

# Draft Environmental Impact Statement

Sunridge Properties  
Rancho Cordova, California  
ID SPK-2009-00511

July 2010



US Army Corps of Engineers, Sacramento District  
1325 J Street  
Sacramento, California 95814-2922  
(916) 557-6605

Prepared by:  
A Joint Venture:  
Brown and Caldwell – Sacramento, California  
CDM – Sacramento, California



# **DRAFT ENVIRONMENTAL IMPACT STATEMENT**

## **SUNRIDGE PROPERTIES** RANCHO CORDOVA, CALIFORNIA

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Lead Agency:  
U.S. Army Corps of Engineers  
Sacramento District

Further Information:  
Michael Jewell  
Chief, Regulatory Division  
U.S. Army Corps of Engineers, Sacramento District  
1325 J Street, Room 1480  
Sacramento, CA 95814-2922  
(916) 557-6605  
[michael.s.jewell@usace.army.mil](mailto:michael.s.jewell@usace.army.mil)

**ABSTRACT**

Prepared in compliance with the National Environmental Policy Act (NEPA), this Draft Environmental Impact Statement (DEIS) analyzes programmatically the potential effects of implementing alternatives for six residential development projects, collectively referred to as the Sunridge Properties. The six projects are located in the Sunridge Specific Plan Area in the City of Rancho Cordova, Sacramento County, California. This DEIS has been prepared as part of ongoing litigation concerning Department of the Army permits issued by the U.S. Army Corps of Engineers (USACE) between 2005 and 2007 for five of the projects, and a pending permit decision for the sixth. The permitted projects are Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98, and Douglas Road 103. A permit decision has not been rendered for the sixth of the projects, Arista del Sol. Under the Proposed Project Alternative, the six projects would collectively require the filling of approximately 29.9 acres of waters of the United States, including wetlands. A stay in the litigation is in place, which precludes further development activities at the six project sites while the USACE reevaluates the impacts of these projects through preparation of this DEIS. The DEIS documents the existing condition of environmental resources in and around areas considered for development, and potential impacts on those resources as a result of implementing the alternatives. The alternatives considered in detail are: (1) No Action (no DA permit needed); (2) Proposed Project (Applicants' Preferred Alternative); and (3) Reduced Footprint.

The DEIS for the Sunridge Properties is available for public review and comment for 45 days from the date of publication of the Notice of Availability in the Federal Register. The NOA was published on July 2, 2010. An electronic version of the DEIS can be found on the Internet at <http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html>. Written comments must be received by August 15, 2010. Please submit your comments in writing, with reference to SPK-2009-00511, to the individual above.



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## ACRONYMS AND OTHER ABBREVIATIONS

1,2-DCE	1,2-Dichloroethene
AAQS	ambient air quality standard
AC&W	Aircraft Control and Warning
ACHP	Advisory Council on Historic Preservation
ACM	Asbestos-containing material
ADT	Average Daily Trips
Aerojet	Aerojet General Corporation
af	acre feet
af/yr	acre-feet per year
AFB	Air Force Base
AHPA	Archaeological and Historic Preservation Act
AICUZ	Air Installation Compatible Use Zone
ALUC	Airport Land Use Commission
ALUCP	Air Land Use Compatibility Plan
ALUP	Airport Land Use Plan
APE	Area of Potential Effect
AQAP	Air Quality Attainment Plan
AT&T	American Telephone and Telegraph Company
BEA	Bureau of Economic Analysis
BP	Before present
BMO	Basin Management Objectives
CAA	Clean Air Act
Cal-Am	California American Water
Cal-EPA	California Environmental Protection Agency
CALINE4	California Department of Transportation's microscale air quality model
Caltrans	California Department of Transportation
CALVENO	California Vehicle Noise
Cal-OSHA	California Occupational Safety and Health Administration
CAO	Cleanup and Abatement Order
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDC	California Department of Conservation
CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CDPH	California Department of Public Health
CEC	California Energy Commission
CEQ	Council for Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CESA	California Endangered Species Act
CEVs	controlled environment vaults
CFR	Code of Federal Regulations
cfs	cubic foot per second
CH4	Methane

## **ACRONYMS AND OTHER ABBREVIATIONS (continued)**

ChAMP	Chemical Assessment and Management Program
CIWMB	California Integrated Waste Management Board
CLUP	Comprehensive Land Use Plan
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
COC	Constituent of Concern
CO <sub>2</sub>	Carbon Dioxide
County	Sacramento County
CRPD	Cordova Recreation and Park District
CSD-1	County Sanitation District No. 1
CSMP	Construction Site Management Program
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
DA	Department of Army
dB	decibel
dBA	decibel A-weighted
dbh	diameter at breast height
DDE	Dichlorodiphenyldichloroethylene
DHS	California Department of Health Services
DMG	California Division of Mines and Geology
DOF	Department of Finance
DOG	California Division of Oil and Gas
DTSC	California Department of Toxic Substances Control
DWSAP	Drinking Water Source and Assessment Program
EA	Environmental Assessment
EBMUD	East Bay Municipal Utilities District
EDU	equivalent dwelling unit
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMD	Sacramento County Environmental Management Department
EPCRA	Emergency Planning and Community Right-to-Know Act
ERNS	Emergency Response Notification System
ESA	Federal Endangered Species Act
FAA	Federal Aviation Administration
FCUSD	Folsom Cordova Unified School District
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FR	Federal Register
ft	foot
FTA	Federal Transit Authority
GET	groundwater extraction and treatment
GHG	Greenhouse gases

## **ACRONYMS AND OTHER ABBREVIATIONS (continued)**

GIS	Geographical Information System
HCD	California Department of Housing and Community Development
HCM	Highway Capacity Manual
HMBP	Hazardous Materials Business Plan
HOV	High Occupancy Vehicle
HSWA	Hazardous and Solid Waste Amendments of 1984
HTRW	Hazardous, Toxic, and Radioactive Waste
HUD	US Department of Housing and Urban Development
HVAC	Heating, ventilating, and air conditioning
Hz	Hertz
IGSM	Integrated Groundwater and Surface Water Model
in/sec	inches per second
IRCTS	Inactive Rancho Cordova Test Site
IRP	Installation Restoration Program
ISO	Insurance Services Office
ITE	Institute of Transportation Engineers
JPA	Joint Powers Authority
kV	kilovolt
L <sub>dn</sub>	Day/Night Noise Level
LAFCo	Local Agency Formation Commission
lb/day	pounds per day
LEDPA	Least environmentally damaging practicable alternative
L <sub>eq</sub>	Noise-equivalent level
LIM	Land Inventory and Monitoring
L <sub>max</sub>	Maximum instantaneous noise level
L <sub>min</sub>	Minimum instantaneous noise level
LOS	Level of Service
LRT	Light Rail Transit
LTS	Less than Significant
LTSWM	Less than Significant with Mitigation
LUFT	Leaking underground fuel tank
MAFB	Mather Air Force Base
MAPA	Mather Airport Policy Area
MBTA	Migratory Bird Treaty Act
MBTE	Methyl Tertiary Butyl Ether
MCL	maximum contaminant level
MDC	McDonnell Douglas Corporation
mgd	million gallons per day
mg/l	milligrams per liter
MOU	Memorandum of Understanding
MRZ	mineral resource zone
msl	mean sea level
MW	megawatt
NASA	National Aeronautics and Space Administration
NDMA	N-nitrosodimethylamine
NEHRP	National Earthquake Hazards Reduction Program
NEHRPA	National Earthquake Hazards Reduction Program Act
NEPA	National Environmental Policy Act

## **ACRONYMS AND OTHER ABBREVIATIONS (continued)**

NESHAP	National Emissions Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NI	No Impact
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrous Oxide
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRCS	USDA Natural Resources Conservation Service
NRHP	National Register of Historic Places
NVWF	North Vineyard Well Field
ODW	CDDH Office of Drinking Water
OEHHA	Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OPR	Office of Planning and Research
OSHA	US Occupational Safety and Health Administration
OU	Operable unit
PAHs	polycyclic aromatic hydrocarbons
Pb	lead
PCBs	Polychlorinated biphenyls
PCA	possible contaminating activities
PCE	Perchloroethylene
pCi/L	Picocuries per liter
PFFP	Public Facilities Financing Plan
PG&E	Pacific Gas and Electric Company
PL	Public Law
PM <sub>10</sub>	particulate matter 10 microns in diameter or smaller
POU	Place of Use
ppb	parts per billion
ppm	parts per million
ppv	peak particle velocity
PSA	Preliminary Site Assessment
psi	pounds per square inch
PUEs	public utility easements
RCRA	Resource Conservation and Recovery Act
RHNA	Regional Housing Needs Allocation
RHNP	Regional Housing Needs Plan
ROAP	Regional Ozone Attainment Plan
ROG	Reactive Organic Gases
ROD	Record of Decision
RT	Regional Transit
RWQCB	Regional Water Quality Control Board
SAC	Strategic Air Command
SACOG	Sacramento Area Council of Governments
SARA	Superfund Amendment and Reauthorization Act
SASD	Sacramento Area Sewer District
SAWWA	Sacramento Area Water Works Association
SB	Senate Bill
SCC	Sacramento County Code



## **ACRONYMS AND OTHER ABBREVIATIONS (continued)**

SCEMD	Sacramento County Environmental Management Department
SCS	Soil Conservation Service
SCWA	Sacramento County Water Agency
SDWA	Safe Drinking Water Act
SERC	State Emergency Response Commission
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SMARA	Surface Mining and Reclamation Act
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMFD	Sacramento Metropolitan Fire District
SMUD	Sacramento Municipal Utility District
SENEL	Single-event noise exposure level
SEL	Sound exposure level
SR	State Route
SRA	State Recreation Area
SRC	Sacramento Rendering Company
SRCSD	Sacramento Regional County Sanitation District
SRSP	Sunridge Specific Plan
SRWTP	Sacramento Regional Wastewater Treatment Plant
SSCAWA	South Sacramento County Agricultural Water Authority
SSHCP	South Sacramento Habitat Conservation Plan
SU	Significant and Unavoidable
SVOCs	Semi-Volatile Organic Compounds
SVRA	State Vehicular Recreation Area
SWRCB	State Water Resources Control Board
SWSI	Supplemental Water Supply Investigation
SYMVCD	Sacramento-Yolo Mosquito and Vector Control District
TAC	Toxic Air Contaminants
TAPs	Toxic Air Pollutants
tbd	to be determined
TCA	Trichloroethane
TCE	Trichloroethylene
TCR	Transportation Concept Report
TDS	Total Dissolved Solids
TIS	Traffic Impact Study
TMA	Transportation Management Association
TSCA	Toxic Substances Control Act
µg/m <sup>3</sup>	micrograms per cubic meter
URBEMIS	urban emissions
U.S.	United States
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UPA	Urban Policy Area
UWMP	Urban Water Management Plan
VOCs	Volatile Organic Compounds
WFP	Water Forum Plan

## **ACRONYMS AND OTHER ABBREVIATIONS (continued)**

WRD	Water Resources Department or Water Resources Division
WSA	Water supply assessment
WSMP	Water Supply Master Plan
WTP	Water Treatment Plant

# EXECUTIVE SUMMARY

## ES.1 BACKGROUND

This Environmental Impact Statement (EIS) has been prepared under the National Environmental Policy Act (NEPA) for six residential development projects in the Sunridge Specific Plan Area located in the City of Rancho Cordova, California. The six projects are collectively referred to as the Sunridge Properties or “Proposed Action” in the EIS. Under its regulatory program, the U.S. Army Corps of Engineers (USACE) will complete decisions for Department of Army (DA) permits for the six projects, based on requirements of the Clean Water Act. The USACE is the lead federal agency responsible for the preparation of this EIS.

Between 2004 and 2007, applicants for nine projects in the Sunridge Specific Plan Area, which is part of the larger Sunrise-Douglas Community Plan Area, submitted DA permit applications to the USACE to fill waters of the United States (U.S.), including wetlands. Following its permit review processes, including preparation of Environmental Assessments (EAs), the USACE issued permits for eight of the nine projects.

Considered in each of the DA permit decisions was an advisory document entitled *The Conceptual Level-Strategy for Avoiding, Minimizing and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area* (Conceptual Strategy) dated June 2004. The Conceptual Strategy was prepared by USACE, the U.S. Fish and Wildlife Service (USFWS), and the U.S. Environmental Protection Agency (USEPA), and presents standards and principles intended to assist developers in minimizing effects to aquatic resources and sensitive species. The developers used the Conceptual Strategy to plan land developments and prepare DA permit applications.

In 2006, the California Native Plant Society (CNPS), the Defenders of Wildlife, and the Butte Environmental Council (Plaintiffs) filed an action in federal District Court, challenging, among other things, the USACE’s issuance of DA permits for the nine projects in the Sunridge Specific Plan Area. The federal judge granted the Plaintiffs a motion for Preliminary Injunction requiring the USACE to take a “harder look” at the impacts of the permit decisions. Based on the Court’s ruling, the USACE then determined that it would need to prepare an EIS to evaluate and present the direct, indirect, and cumulative effects of the permit decisions.

Of the nine projects in the Sunridge Specific Plan Area, three completed the filling of waters of the U.S. in accordance with the issued DA permits before the action was brought to the court. They are North Douglas, Montelena, and Sunridge Park. Five projects were issued DA permits, but the filling of the waters of U.S. was not completed. They are Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98, and Douglas Road 103. The last project, Arista del Sol, is pending a permit decision.

This EIS provides a programmatic analysis of the impacts associated with development of the six properties. In addition to disclosing the individual effects of each project, this EIS assesses the combined effects of permit decisions. This EIS also addresses the cumulative effects to wetlands and waters of U.S. resulting from development in the Sunridge Specific Plan Area and the Conceptual Strategy in maintaining viable wetland communities in the study area. Information presented in this document will be used to supplement project-specific Environmental Assessments previously prepared for five permits. A NEPA document for the sixth project will be prepared and tier from this EIS prior to a permit decision being made.

Based on the analyses in this EIS and comments received from the public, the USACE may take one of several actions related to the DA Permits for the Sunridge Properties. For the five permitted projects, the USACE may: 1) Reinstate one or more of the permits with the permit requirements as currently stipulated, 2) Modify the terms or conditions of one or more of the permits, or 3) Initiate revocation procedures for one or more of the permits. For the one project without a DA permit, the USACE will make a permit decision.

## ES.2 ALTERNATIVES ADDRESSED IN THIS EIS

A **No Action (No DA Permit) Alternative** serves as a basis for comparison of the action alternatives. This alternative is one that involves no construction requiring a DA permit. Under this alternative, the USACE would not reinstate or modify the five DA permits previously issued and would not approve the permit for the Arista del Sol project. As such, developers for the Sunridge Properties would not be authorized to fill waters of the U.S., including wetlands. This would not preclude the developers from undertaking construction activities on the parts of their properties that lie outside of waters of the U.S. For purposes of environmental analyses in this EIS, it was assumed that the developers could complete development activities to within 25 feet of wetlands or waters of the U.S. Approximately 2,060 homes over 303 acres are estimated for the No Action Alternative.

The **Proposed Project Alternative**, which is implementation of the projects as specified in the DA permits for the five permitted projects, and as specified in the DA permit application for the sixth, Arista del Sol, would collectively result in the development of 588.5 acres for residences, neighborhood parks, roads, drainage basins, and commercial space, including 3,258 single family homes, with 153.6 acres undeveloped as wetlands preserves. The Proposed Project Alternative would result in the collective filling of 29.9 acres of waters of the U.S. Based on the guidelines in the Conceptual Strategy, 153.6 acres of existing wetlands would be preserved within the project area. As part of the compensatory mitigation, 34 acres of vernal pool habitat would be created and 53 acres would be preserved at off-site locations.

Based on comments received from the public during EIS scoping, the USACE developed a third alternative referred to as the **Reduced Footprint Alternative**. This alternative is intended to better protect tributaries of Laguna and Morrison Creeks, incorporating topography, watershed boundaries, and existing vernal pools into the design of the area to be preserved. The Reduced Footprint Alternative would result in the residential development of 455.8 acres, including 2,511 single family homes, and the filling of 20.3 acres of the waters of the U.S. A total of 286.2 acres would be undeveloped as an onsite preserve. This alternative includes creation of 20.4 acres and preservation of 40.8 acres of vernal pool habitat at an off-site location.

## ES.3 RESOURCES EVALUATED

The following resource areas are evaluated in this EIS in detail. Detailed analysis was determined to be necessary because some of the effects could be related to the DA permit decisions.

- Biological Resources (including wetlands and endangered species)
- Hydrology, Water Quality, Water Supply, and Groundwater
- Air Quality
- Land Use
- Population, Employment, and Housing
- Traffic and Transportation



- Noise
- Utilities and Public Services
- Public Health and Safety
- Environmental Justice
- Hazardous, Toxic and Radioactive Waste
- Visual Resources
- Historic and Cultural Resources
- Geology and Soils
- Climate Change

The following text provides summaries of the environmental effects of the projects on the resource areas analyzed in detail. Table ES-1 summarizes the comparative analysis of the alternatives for each resource area.

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<b>Table ES-1</b> <b>Comparative Analysis of the Alternatives</b>			
<b>Environmental Consequence</b>	<b>No Action Alternative</b>	<b>Proposed Project Alternative</b>	<b>Reduced Footprint Alternative</b>
<b>Biological Resources</b>			
3.2-1: An adverse effect on a population of threatened, endangered, or candidate species	PotS	LTSWM	LTSWM
3.2-2: A net loss in the habitat value of sensitive biological habitat	PotS	PotS	PotS
3.2-3: Substantial impedance to the movement or migration of fish or wildlife	LTS	LTS	LTS
3.2-4: Substantial population loss of any native fish, wildlife, or vegetation	PotS	LTSWM	LTSWM
<b>Hydrology, Water Quality, Water Supply, Groundwater</b>			
3.3-1: Potential for an increase in the rate and volume of drainage runoff from the site	LTSWM	LTSWM	LTSWM
3.3-2: Potential for discharge that affects surface water quality	LTSWM	LTSWM	LTSWM
3.3-3: Potential for changes in groundwater elevations around the Elk Grove cone of depression	LTS	LTS	LTS
3.3-4: Potential for changes in groundwater elevations adjacent to the proposed well field	LTS	LTS	LTS
3.3-5: Potential for changes in groundwater elevations and around known contaminant plumes	LTS	LTS	LTS
3.3-6: Potential for changes in rate of contaminant plume migration	LTS	LTS	LTS
3.3-7: Potential migration of lower quality (higher TDS) groundwater in Aquifer 2 up into Aquifer 1	LTS	LTS	LTS
Key: LTS = Less than Significant, LTSWM = Less than Significant with Mitigation, NI = No Impact. PotS = Potentially Significant, SU = Significant and Unavoidable.			

<b>Table ES-1</b> <b>Comparative Analysis of the Alternatives (continued)</b>			
<b>Environmental Consequence</b>	<b>Alternative 1: No Action</b>	<b>Alternative 2: Proposed Project</b>	<b>Alternative 3: Reduced Footprint</b>
<b>Hydrology, Water Quality, Water Supply, Groundwater</b>			
3.3-8: Potential for exceedance of drinking water standards	LTS	LTS	LTS
3.3-9: Changes in groundwater elevations adjacent to the proposed well field	SU	SU	SU
3.3-10: Increased need for development of long-term regional surface and groundwater supplies	SU	SU	SU
<b>Air Quality</b>			
3.4-1: Short-term increase in construction-related emissions	LTSWM	LTSWM	LTSWM
3.4-2: Exposure of future residents to odors from the Sacramento Rendering Company (SRC)	SU	SU	SU
3.4-3: Long-term increase in ROG, Nox, and PM10 emissions	SU	SU	SU
3.4-4: Non-conformance with the City of Rancho Cordova General Plan Policy AQ.1.2.3	LTSWM	LTSWM	LTSWM
<b>Land Use</b>			
3.5-1: Conflict with applicable land use laws policies, regulation, or plans of an agency with jurisdiction over the project	LTS	LTS	LTS
3.5-2: Physically divide an established community	LTS	LTS	LTS
3.5-3: Convert prime farmland, unique farmland, or farmland of statewide importance to nonagricultural use	LTS	LTS	LTS
Key: LTS = Less than Significant, LTSWM = Less than Significant with Mitigation, NI = No Impact. PotS = Potentially Significant, SU = Significant and Unavoidable.			



<b>Table ES-1</b> <b>Comparative Analysis of the Alternatives (continued)</b>			
<b>Environmental Consequence</b>	<b>Alternative 1: No Action</b>	<b>Alternative 2: Proposed Project</b>	<b>Alternative 3: Reduced Footprint</b>
<b>Population, Employment, and Housing</b>			
3.6-1: Reduction in available housing	NI	NI	NI
3.6-2: Demand for new housing	NI	NI	NI
3.6-3: Displace substantial numbers of existing people or housing	NI	NI	NI
<b>Traffic and Transportation</b>			
3.7-1: Reduced level of service	SU	SU	SU
<b>Noise</b>			
3.8-1: Temporary exposure to construction generated noise	LTSWM	LTSWM	LTSWM
3.8-2: Potential exposure to stationary-source noise generated by on-site land uses	PotS	PotS	PotS
3.8-3: Potential exposure to off-site stationary source noise	PotS	PotS	PotS
3.8-4: Project-generated increases in traffic noise levels on area roadways	LTS	LTS	LTS
<b>Utilities and Public Services</b>			
3.9-1: Increased demand for energy services	LTSWM	LTSWM	LTSWM
3.9-2: Increased demand for fire protection services	LTSWM	LTSWM	LTSWM
3.9-3: Increased demand for law enforcement services	LTSWM	LTSWM	LTSWM
3.9-4: Increased demand for school services	LTS	LTS	LTS
3.9-5: Increased demand for telephone and cable television services	LTSWM	LTSWM	LTSWM
Key: LTS = Less than Significant, LTSWM = Less than Significant with Mitigation, NI = No Impact. PotS = Potentially Significant, SU = Significant and Unavoidable.			

<b>Table ES-1</b> <b>Comparative Analysis of the Alternatives (continued)</b>			
<b>Environmental Consequence</b>	<b>Alternative 1: No Action</b>	<b>Alternative 2: Proposed Project</b>	<b>Alternative 3: Reduced Footprint</b>
<b>Utilities and Public Services</b>			
3.9-6: Increased demands for transit service	LTSWM	LTSWM	LTSWM
3.9-7: Increased demands for library service	LTS	LTS	LTS
3.9-8: Increased demand for solid waste service	LTS	LTS	LTS
3.9-9: Lack of consistency with the General Plan	LTS	LTS	LTS
3.9-10: Sufficiency of project site parkland to meet project site demand/increased demand on regional parks	LTSWM	LTSWM	LTSWM
<b>Hazardous, Toxic, and Radioactive Waste</b>			
3.10-1: Potential for construction workers and residents exposure to hazardous materials in soil from historic uses of the project site	LTS	LTS	LTS
3.10-2: Potential for future resident exposure to groundwater contaminants from existing water wells in the area	LTSWM	LTSWM	LTSWM
3.10-3: Potential construction worker and residential exposure to hazardous waste from illegal disposal practices	LTSWM	LTSWM	LTSWM
3.10-4: Potential construction worker and residential exposure to hazardous wastes from demolition and construction	LTSWM	LTSWM	LTSWM
Key: LTS = Less than Significant, LTSWM = Less than Significant with Mitigation, NI = No Impact. PotS = Potentially Significant, SU = Significant and Unavoidable.			

<b>Table ES-1</b> <b>Comparative Analysis of the Alternatives (continued)</b>			
<b>Environmental Consequence</b>	<b>Alternative 1: No Action</b>	<b>Alternative 2: Proposed Project</b>	<b>Alternative 3: Reduced Footprint</b>
<b>Public Health and Safety</b>			
3.11-1: Create a public health hazard through the use, production, generation, release, or disposal of materials that pose a hazard to human, animal, or plant populations	LTS	LTS	LTS
3.11-2: Potential safety hazards from construction activities	SU	SU	SU
3.11-3: Human health hazards associated with mosquito-borne diseases	PotS	PotS	PotS
3.11-4: Located on a hazardous materials site that is included on the list generated by Government Code Section 65962.5 (Cortese List)	NI	NI	NI
3.11-5: Create a safety hazard for people living or working at the project sites as a result of a project located within an airport land use plan, located within 2 miles of a public airport, or located in the vicinity of a private airstrip	NI	NI	NI
3.11-6: Expose people to a significant risk of loss, injury, or death from exposure to wildland fires.	NI	NI	NI
<b>Environmental Justice</b>			
3.12-1: Potential effects on low-income populations	LTS	LTS	LTS
3.12-2: Potential effects on minority populations	LTS	LTS	LTS
<b>Visual Resources</b>			
3.13-1: Alteration of a scenic vista	LTS	LTS	LTS
3.13-2: Damage to scenic resources within a state scenic highway	NI	NI	NI
Key: LTS = Less than Significant, LTSWM = Less than Significant with Mitigation, NI = No Impact. PotS = Potentially Significant, SU = Significant and Unavoidable.			

<b>Table ES-1</b> <b>Comparative Analysis of the Alternatives (continued)</b>			
<b>Environmental Consequence</b>	<b>Alternative 1: No Action</b>	<b>Alternative 2: Proposed Project</b>	<b>Alternative 3: Reduced Footprint</b>
<b>Visual Resources</b>			
3.13-3: Degradation of visual character	SU	SU	SU
3.13-4: Temporary degradation of visual character for developed land uses caused by construction staging areas	SU	SU	SU
3.13-5: New light and glare effects	LTSWM	LTSWM	LTSWM
3.13-6: New skyglow effects	SU	SU	SU
<b>Historic and Cultural Resources</b>			
3.14-1: Loss or damage to recorded cultural resources sites	NI	NI	NI
3.14-2: Loss or damage to historic sites, buildings, and structures	NI	NI	NI
3.14-3: Potential damage to undiscovered prehistoric sites or Native American burials	PotS	PotS	PotS
<b>Geology and Soils</b>			
3.15-1: Potential temporary, short-term construction-related erosion	PotS	PotS	PotS
3.15-2: Potential damage to structures from seismic activity and related geologic hazards	LTS	LTS	LTS
3.15-3: Potential damage to structure from construction on unstable soils	PotS	PotS	PotS
3.15-4: Loss of mineral resources	LTS	LTS	LTS
3.16-1: Short-term increase in construction-related GHG emissions	LTS	LTS	LTS
3.16-2: Long-term increase in GHG emissions	LTSWM	LTSWM	LTSWM
3.16-3: Potential to conflict with or obstruct implementation of GHG reduction measures or goals under AB 32	LTSWM	LTSWM	LTSWM
Key: LTS = Less than Significant, LTSWM = Less than Significant with Mitigation, NI = No Impact. PotS = Potentially Significant, SU = Significant and Unavoidable.			

## BIOLOGICAL RESOURCES

This EIS assesses the effects of the alternatives on vegetation, wildlife, special-status species, wetlands and vernal pools. The study area is comprised primarily of non-native grassland and wetland complexes, including old-terrace type vernal pools. Old-terrace type vernal pools include vegetation that is native, and dominated by annual herbs and grasses. The study area generally supports wildlife species that utilize non-native grasslands and vernal pools. Many bird species are known to inhabit the study area, including raptors, while large mammals are generally absent. Vernal pool complexes support special-status crustaceans. Vernal pool habitat has been noted by the USFWS and others as requiring protection because it is unique and supports special-status species.

In 2004, USACE, USEPA, and USFWS prepared a conceptual-level strategy for avoiding, minimizing, and preserving aquatic resource habitat in the Sunrise-Douglas Community Plan Area. The Conceptual Strategy sets forth ten principles and standards that should be followed during development of projects within the Sunrise-Douglas Community Plan area in order to achieve reasonable protection and conservation of federally threatened and endangered species under the Endangered Species Act, while taking a regional approach to avoidance and minimization of impacts to waters of the U.S., including wetlands, in accordance with Section 404(b)(1) guidelines under the Clean Water Act (USACE, 2005a).

Based on previous studies and focused plant and wildlife species surveys, two special-status species occur within the study area: the threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and the endangered vernal pool tadpole shrimp (*Lepidurus packardii*). Both of these species have the potential to occur in vernal pools at the project sites. The project sites are not within designated critical habitat for these species.

Under the No Action Alternative, none of the wetlands and other waters of the U.S. within the study area would be filled. As such there would be no direct impact resulting from a Corps permit. For this alternative, it was assumed development activities would occur up to 25 feet of waters of the U.S. Because of the potential for indirect effects on listed species, the six projects might need to obtain permits under Section 10 of the Endangered Species Act from the USFWS. In Biological Opinions issued for the five of the six projects DA permits, the USFWS indicated that there would be a potential for indirect effects for activities within 250 feet of wetland and vernal pools habitats. Therefore, significant and unavoidable indirect effects could still occur under the No Action Alternative.

Under the Proposed Project Alternative, 742 acres would be developed into residential, neighborhood parks, road improvements, preserve space, drainage basin, and commercial space. A total of 153.6 acres would be set aside as wetland preserve. There would be a total net loss of 589 acres of non-native annual grasslands within which 29.9 acres of waters of the U.S., including 23.03 acres of vernal pools, would be filled. Significant impacts to the threatened vernal pool fairy shrimp and the endangered vernal pool tadpole shrimp would occur under the Proposed Project Alternative. Direct effects would occur through mortality to these species and permanent loss of vernal pool habitat, and indirect effects would occur through loss or alteration of upland and swale areas that support aquatic habitat. This alteration includes fragmentation of habitat and changes to hydrology as well as increased sediment, pollutants, and nutrients to wetlands downstream. In addition, increased human presence would result in the introduction of invasive plants, feral and non-feral cats and dogs and other non-native predators to sensitive species, and hazardous and non-hazardous waste and materials. The USFWS estimates that any wetland or vernal pool habitat within 250 feet of project development may be indirectly impacted. To mitigate for these impacts, 34.2 acres of vernal pool habitat would be created offsite as compensatory mitigation, and 52.7 acres vernal pool habitat would be preserved offsite as compensatory preservation. This offsite mitigation would occur at the Gill Ranch Open Space Preserve, a 10,400-acre preserve in eastern Sacramento County that consists of annual grassland with vernal pool complexes throughout.

Under the Reduced Footprint Alternative, development would be similar to the Proposed Project Alternative except for the additional preservation of an area comprising the headwaters of Laguna Creek near Grantline Road and a small additional area in the Morrison Creek watershed. The Reduced Footprint Alternative would contain 35 percent less development for the Grantline 208 project, 11 percent less development for the Douglas Road 98 project, and 41 percent less development for the Arista del Sol project. The other three project sites would allow similar amounts of development as the Proposed Project Alternative. Under the Reduced Footprint Alternative there would be a total net loss of 456 acres of non-native annual grasslands within which 20.3 acres of waters of the U.S. would be filled. As with the Proposed Project Alternative, significant impacts to the threatened vernal pool fairy shrimp and the endangered vernal pool tadpole shrimp would occur under the Reduced Footprint Alternative. Direct impacts would occur through mortality to these species and permanent loss of vernal pool habitat, and indirect impacts would occur through loss or alteration of upland habitat, increased human presence, changes to hydrology, increased sediment, pollutant and nutrient influx, or other created conditions. A total of 286 acres of wetland habitat would be preserved on-site. To mitigate for loss of vernal pool species and habitat, 20.4 acres of vernal pool habitat would be created offsite as compensatory mitigation, and 40.8 acres of vernal pool habitat would be preserved offsite as compensatory preservation. Depending on the outcome of mitigation, specifically whether the replacement of habitat is of equal value, the impacts to threatened, endangered, or candidate species are potentially significant. The value of the replacement habitat also determines the potential for loss of habitat value.

Both the Proposed Project Alternative and Reduced Footprint Alternative have the potential for interruption of wildlife movement through the filling of wetlands and corridor habitat. The No Action Alternative would have the greatest potential for impacting wildlife populations because development could take place within 25 feet of wetlands.

## **HYDROLOGY, WATER QUALITY, WATER SUPPLY, AND GROUNDWATER**

This EIS assesses effects from the alternatives on water resources, including hydrology, surface and groundwater quality, and surface and groundwater supply. The six Sunridge Specific Plan project properties lie in the headwaters of Laguna and Morrison Creeks, which is an area with a large number of vernal pools created due to local soil drainage properties that seasonally pond rainwater. The hydrologic regime is dominated by seasonal precipitation and stormwater runoff, primarily during the months of November through March.

Because the nature of these projects is development resulting in a high percentage of grading, ground contouring and new impervious surfaces, the overall drainage system would be altered, changing the surface hydrology. Surface runoff would be expected to increase under all three alternatives. However, the projects include surface water detention facilities that would be designed per Sacramento County regulations to contain stormwater and urban runoff, so that overall discharges from the project sites would be the same as under existing conditions. It is anticipated that the stormwater detention basins would be similar for all alternatives and thus there is no difference between the alternatives.

Water supply for the projects, which may be a combination of new surface water sources and groundwater, is uncertain and under litigation. There is potential for significant adverse effects to water supply under all three alternatives.

Groundwater in the vicinity of the project sites is contaminated with industrial solvents. Off-site groundwater is expected to be one water supply source and increased groundwater pumping may cause induced migration of the contamination plumes. Prevention of groundwater impacts would depend on actions taken by water agencies in identification of pumping and management of the groundwater resource.

## **AIR QUALITY**

The air quality assessment addresses air quality-related impacts from the alternatives related to exceedances of regulatory air quality threshold levels due to construction-related emissions, exceedances of air quality threshold levels due to increased vehicle traffic-related emissions, exposure of future residents to odors from surrounding existing industries that could lead to exposures and public complaints, and non-conformance with air quality policies found in the Sacramento County General Plan.

Sacramento County is in attainment for state and federal ambient air quality standards with the exception of the federal air quality standards for ozone, and the federal and state standards for particulate matter (PM10 and PM2.5). Sacramento County is part of the larger Sacramento Federal Ozone Nonattainment Area which is designated a “serious” nonattainment area for the federal eight-hour ozone standard, and is designated a “serious” nonattainment area for the state one-hour ozone standard. Thus, the Sacramento Metropolitan Air Quality Management District (SMAQMD) has petitioned the USEPA to change the boundaries for the particulate non-compliance area. SMAQMD has developed regulations and programs to minimize emissions of all air pollutants – including those that exceed state and federal standards. Due in part to the implementation of these regulations and programs, the Sacramento region’s air quality continues to improve.

Activities associated with construction of single family homes and associated infrastructure would result in the temporary generation of emissions of reactive organic gases (ROG), oxides of nitrogen (NOx) and PM10. These emissions would result from construction activities including ground disturbance, construction worker commute trips, asphalt paving, mobile and stationary construction equipment exhaust, soil erosion, and architectural coatings.

Because all three alternatives would involve some degree of construction, emissions would be generated with the Proposed Project Alternative producing the greater amounts and the No Action Alternative generating the least. It is assumed that the developers would comply with SMAQMD rules and regulations to mitigate for the temporary air quality emissions from construction and thus air quality impacts would be insignificant.

Increased vehicle traffic emissions as a result of new residences would be an unavoidable adverse air quality effect. Control of vehicle emissions is addressed at the regional and state level and thus cannot be mitigated. It is anticipated that policies stated in the Sacramento County General Plan would be enforced to address regional air emission issues under all three alternatives.

Odors from the Sacramento Rendering Plant near the project sites would remain a public nuisance issue. Implementation of any of the alternatives could expose a greater population to the nuisance odors. Future residents would be notified of the existence of the plant, which is the only viable mitigation measure.

## **LAND USE**

The land use assessment addresses the compatibility of the alternatives with general land use plans and the loss of agricultural lands. Agricultural land conversion in general is a significant issue in the Sacramento Valley.

The project sites are within the City of Rancho Cordova, which incorporated in 2003. Historically, land use in the area consisted of grazing land and some stock ponds. Scattered farmsteads, buildings and other agricultural infrastructure also typified lands within the area. In recent decades, some business and industrial complexes and residential developments have been constructed in the area east of Sunrise Boulevard. Mather Field is now in operation as a civilian air field and business park. Surrounding land



use consists of the Security Industrial Park and Aerojet General property to the north, Mather Field and industrial properties to the west, and agricultural lands to the south and east. Kiefer Landfill is located to the south and a rendering plant to the north.

The Proposed Project Alternative would comply with the City of Rancho Cordova General Plan and Sunridge Specific Plan since urban development would be consistent with these plans. The Reduced Footprint Alternative would most likely partially meet the development plans of the City of Rancho Cordova, while the No Action Alternative would comply with the plan goals the least.

The alternatives would result in the conversion of agricultural land to urbanized land. Although agricultural land conversion can be controversial and is often considered a significant land use impact, the General Plan established conversion to urban development as a goal; therefore the conversion is not considered significant for all three alternatives.

## **POPULATION, EMPLOYMENT, AND HOUSING**

The population and housing/socioeconomics assessment addresses the issue of whether adequate housing exists for workers who would construct the projects. The Housing Element of the Rancho Cordova General Plan identified housing solutions to solve regional housing need problems and meet or exceed the regional housing needs allocation. The City incorporated in 2003 as a jobs-rich community with homes and apartments that could not meet the housing demands of the workforce. In the Housing Element, the City outlines goals, policies, and actions to ensure a suitable mix of housing to match the community's needs. Implementation of the Sunridge Specific Plan is one means of addressing housing needs. Construction of new housing as addressed in this EIS would therefore be beneficial to the City and region. Although the current economic climate for the Sacramento Metropolitan Area is not conducive to large-scale residential development, it is expected that housing demand will increase as the economy recovers.

The environmental analysis addressed the potential effect of temporary construction workers placing a strain on the local housing market under the assumption that there was an inadequate local worker population and workers would need to be imported and housed. However, the analysis shows that an adequate local population would exist, given regional economic conditions, and therefore no new housing for workers would be necessary. This analysis applies to all three alternatives.

Implementation of the Sunridge Specific Plan, including the six projects addressed in this EIS, would have a beneficial effect on the local economy. The projects would provide for temporary construction jobs and long-term maintenance and support services jobs.

## **TRAFFIC AND TRANSPORTATION**

The traffic and transportation assessment addresses whether the alternatives would cause an adverse effect to traffic. Under existing conditions, some roadways in the project area are congested with a poor level of service. Traffic and transportation issues are recognized in the Sunridge Specific Plan and roadway improvements have been planned. The roadway improvements are to be implemented irrespective of completion of the alternatives. However, even with mitigation, some roadway intersections will still experience a poor level of service during peak traffic periods. The transportation impacts therefore are considered significant and unavoidable for all three alternatives. The transportation impacts would occur with or without implementation of the alternatives discussed in this EIS. Because the Proposed Project Alternative would result in construction of the greatest number of homes resulting in the largest number of new vehicles on the road, the Proposed Project Alternative would contribute the greatest impact to the local traffic issues. The Sunrise-Douglas Community Plan/Sunridge Specific Plan

EIR includes mitigation measures proposed for the area to address the overall traffic congestion issues, which would help to offset traffic impacts for all three alternatives.

## **NOISE**

The noise analysis in this EIS addresses effects from the alternatives including construction noise on existing land uses, increased traffic noise related to the new housing, and noise from existing sources that may affect new noise-sensitive receptors occupying the new housing. Noise receptors in this analysis are defined as residential homes and schools. The existing noise sources in the project area are reflected by traffic traveling on surrounding roadways (along Sunrise Boulevard, Douglas Road, Grant Line Road, and the Jackson Highway) Kiefer Boulevard industrial operations, and aircraft overflights from nearby Mather Field. Stationary sources of noise in the vicinity of the project area include the Cordova Shooting Center, American River Aggregates and Asphalt Plant, Kiefer Road Landfill, the Sacramento Rendering Company, and Douglas Security Park.

Construction of the three alternatives would include site preparation, staging, excavation, paving, and building construction activities. Construction activities would be performed by workers utilizing hand tools and power tools. Increased noise would occur during daylight hours and would be predicted to not exceed 65 dBA at the closest existing noise-sensitive receptor. Therefore, there would not be any significant noise effects from all three alternatives.

Traffic volumes producing greater noise levels, would increase as a result of all three alternatives, with the Proposed Project Alternative likely producing the greatest traffic noise levels. Future residential uses within the project area adjacent to major roadways are sensitive receptors to the traffic noise generated by the project itself. To mitigate traffic noise impacts to less than 60 or 65 dBA, the standard required by the General Plan Noise Element, setbacks from the road centerline would be maintained along major roadways or noise barriers would be constructed along the major roadway and residential use interfaces. Noise levels for the project area will increase under all three alternatives, but those levels are not expected to produce a significant noise impact.

## **UTILITIES AND PUBLIC SERVICES**

The utilities and public service analyses assesses whether existing services were adequate to address the needs of the planned developments, and would not negatively impact (stress) the delivery of those services to the public. The utilities and services addressed in this EIS are: electrical and gas energy, fire protection, law enforcement, schools, telephone and cable services, public transportation, library, solid waste, and parks and recreation. The analyses of these services, taken primarily from the Sunridge Specific Plan for the Proposed Project Alternative, indicated that there would be a potential for negative effects unless those effects were to be addressed through specific mitigation measures as outlined in the Sunridge Specific Plan. Although resulting in less development, the No Action and Reduced Footprint Alternatives would have similar effects to utilities and public service; therefore, the same mitigation measures would apply.

## **HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)**

The HTRW assessment evaluates the potential for chemical or radioactive wastes to be present in the project area that could affect construction workers and/or public health. The predominant historical uses of the Specific Plan area were fallow land, or dry-farmed and natural grass grazing land since at least the 1950s. These agricultural uses typically require little to no application of environmentally persistent pesticides. In 1991, surface soil samples from a site near an old olive orchard were analyzed. The soil samples detected only dichlorodiphenyldichloroethylene, polychlorinated biphenyls, and inorganic lead

below the Department of Toxic Substance Control (DTSC) health risk guidelines. The investigation indicated that the olive orchard had been out of production for several years prior to environmental assessment and the use of potentially persistent pesticides had been uncommon. Therefore, the potential for residual agricultural chemical concentrations in existing surficial soils is low. This determination applies to all three alternatives.

Construction work involves the use of hazardous chemicals. Proper management and control of chemicals, through recommended mitigation measures, would be necessary to prevent adverse environmental effects. The same mitigation measures would apply to all three alternatives.

## **PUBLIC HEALTH AND SAFETY**

The public health assessment looks at whether the alternative would create human health hazards through use of chemicals at the site, would expose humans to the potential for mosquito-borne diseases, would be located on an existing hazardous materials site, would create a safety hazard because the site was near an active airport, or would expose residents to the potential for wildland fires. Because wetlands would remain near populated areas, mosquito-borne diseases would pose a threat to human health. The property is not a listed hazardous waste site and use of chemicals during construction can be controlled in a manner protective of public health. The project properties are not within the landing pattern of Mather Field and development would reduce the potential for wildland fires.

## **ENVIRONMENTAL JUSTICE**

The Environmental Justice evaluation assesses the potential for the project to disproportionately affect low income or minority populations. Because there are no low-income or minority populations living at the project sites and the nearest low-income neighborhood near Mather Field is being redeveloped, implementation of any of the three alternatives would not adversely affect low income or minority populations.

## **VISUAL RESOURCES**

The visual resource analysis addresses the compatibility of the alternatives with existing visual resources. The analysis includes an assessment of alteration of a scenic vista, damage to scenic resources within a State Highway corridor, degradation of the area's scenic quality, temporary effects due to construction staging, introduction of new light and glare effects, and introduction of a new skyglow effect.

The existing condition foreground views of the project area are essentially rural and agricultural in nature. Grassland habitat and occasional vernal pool features are the dominant short-range visual resources. Mid-range views (200 to 500 feet) are similar, taking in occasional rural homesteads, power lines, evidence of agricultural operations, and primarily open vistas. Long-range views (horizon) reflect the varied nature of existing land uses in the area. Long-range vistas include vast open rural/agricultural views, power lines, industrial development, military/airport development, and evidence of aggregate operations, with the Sierra Nevada Mountains visible in the background on clear days.

Under all three alternatives, existing views would be changed from rural to residential and background views blocked by residences, other structures, fences, and landscaping. These effects are recognized in the Sunridge Specific Plan, which adopts standards and guidelines to address the urban features. The overall scenic change from rural to residential is a significant change that is addressed by and is consistent with the Sunridge Specific Plan. The effects to visual resources are similar for all three alternatives.

There is no Scenic Highway in the area of analyses, thus no impacts to highway corridor scenic resources. The construction staging visual impact would be temporary and mitigated through fencing. Glare and skyglow effects would need to be addressed through City of Rancho Cordova street lighting standards.

## **HISTORIC AND CULTURAL RESOURCES**

The cultural resources assessment addresses the potential for the alternatives to damage recorded cultural resource sites, historic sites or buildings, or damaging as-yet-to be discovered prehistoric sites or Native American burials. Three of the parcels were subject to cultural resource inventory surveys and a fourth to a walk-over survey. These surveys concluded that there are no cultural resource features present. Therefore, the project would likely not affect cultural resources. Monitoring would be required during earthwork to prevent adverse effects to any undiscovered resources for all three alternatives.

## **GEOLOGY AND SOILS**

The geology and soils assessment addresses whether the alternatives would result in the loss of surface soils during construction, the potential for damage to a structure from seismic activity and related activities, potential for damage to a structure resulting from construction on unstable soils, and loss of a valuable mineral resource. The assessment determined that there was potential for significant impacts to soils during construction of the projects and no potential for significant damage as a result of an earthquake. Expansive soils do exist that could potentially damage building foundations if proper engineering is not followed. There are no mineral resources that would be lost if the projects were to be constructed under any of the three alternatives.

## **CLIMATE CHANGE**

The climate change assessment addresses whether greenhouse gas emissions resulting from development of the alternatives would lead to a significant contribution to climate change, and conformity with Federal, state, or regional policies.

# **ES.4 CUMULATIVE EFFECTS**

## **BIOLOGICAL RESOURCES**

The Biological Resources cumulative effects assessment summary focuses on vernal pool species and the planned mitigation.

Project implementation would result in the placement of fill material into waters of the U.S. including vernal pools, seasonal wetlands and seasonal wetland swales, seeps, drainage channels, ditches, and ponds. The potential for a resource or ecosystem to sustain its structure and function depends on its resistance to stress and its ability to recover. Determining the magnitude and significance of the environmental consequences of the Proposed Action Alternative in the context of, and when added to, other past, present, and reasonably foreseeable actions, is key to determining the impact on resources.

Prior studies have documented an 87 percent reduction in the original vernal pool habitat acreage in the Central Valley (Holland, 2009) and a 15 to 33 percent reduction of the original biodiversity of vernal pool crustaceans (King, 1998). These direct losses of habitat generally represent irreversible damage to vernal pools, and alterations as a result of urbanization often disrupt the physical processes conducive to functional vernal pool ecosystems. The more severe the alteration and destruction, the more difficult it is to recover such areas in the future due to disruption of soil formations, hydrology, seed banks, and other components of a functional vernal pool ecosystem.

Based on the data currently available, 360.6 acres of direct impact to waters of the U.S. have or will foreseeably occur within the Mather Core Area. This includes direct impacts to 209 acres of vernal pools, and 151.6 acres of other waters. Information regarding indirect impacts is very limited, but at least an additional 38.2 acres of vernal pools and 6.1 acres of other aquatic habitats have or will be indirectly impacted. Of the aquatic habitats contained within the Mather Core Area, approximately 22% of the vernal pools will be preserved on-site, and 44% of other waters will be preserved on-site.

For the 404.9 acres of waters of the U.S. that have or are proposed to be impacted, 371.1 acres have been or are proposed to be created or restored as compensatory mitigation, representing a ratio of about 0.92:1. Since most of the compensatory mitigation was not or will not be initiated until around the time the impacts occur, there will be temporal losses of functions and services as aquatic habitat restoration and creation takes time to develop and may not always be successful upon first attempt.

Further, only approximately 56 acres of the vernal pool compensatory mitigation has been or is proposed to be completed within the Mather Core Area, and approximately 27 acres of vernal pools that have been created in the Core Area are exhibiting limited success, according to recent monitoring reports. (The Sunridge Properties site lies within the Mather Core Area, a region targeted by the U.S. Fish and Wildlife Service (USFWS) for the initial focus of vernal pool protection measures.) As approximately 76 percent of the vernal pool compensatory mitigation has or would occur outside the Mather Core Area, a permanent loss of vernal pool functions and services would occur in the Mather Core Area, affecting the habitat preservation goals outlined in the USFWS Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon.

## **SURFACE WATER AND GROUNDWATER SUPPLY**

The City of Rancho of Cordova gave tentative map approval to the Sunridge Specific Plan based on supplies that the Sacramento County Water Agency (SCWA) is developing at the North Vineyard wellfield. SCWA is also developing a new surface water supply that will ultimately be used conjunctively to supply the Sunridge Properties and other developments in southeastern Sacramento County. The water demand would have cumulatively considerable effects to the regional water supply conditions and groundwater levels overall.

## **SURFACE WATER QUALITY**

The Sunridge Properties, in combination with proposed and ongoing projects within the Mather Core Area, would have a cumulatively considerable contribution to decreased water quality within Morrison and Laguna Creeks.

## **AIR QUALITY**

The Sacramento region currently is not in compliance with air quality standards for ozone and particulate matter. Construction of the Sunridge Properties would have a cumulatively considerable impact on air quality.

## **TRAFFIC AND TRANSPORTATION**

Traffic congestion in eastern Sacramento County is currently significant with low levels of service at several intersections. Although traffic improvements are planned by the County and the City of Rancho Cordova, the cumulative transportation analysis indicates that impacts from the Sunridge Properties will be cumulatively considerable.

## **NOISE**

Construction and new traffic noise from the Sunridge Properties, combined with other projects in the area, will be cumulatively considerable.

## **PUBLIC HEALTH**

The Sunridge Properties, combined with other local projects, would put more people in closer proximity to wetlands. This would increase the potential for exposure to mosquito-borne diseases.

## **VISUAL RESOURCES**

The Sunridge Properties, combined with other local projects, would continue the visual character change of the landscape from rural to urban.

## **CULTURAL RESOURCES**

Although no cultural resources are known at any of the Sunridge Properties, the site has not been thoroughly investigated for buried cultural artifacts or Native American remains. The Sunridge Properties, combined with similar projects in the area, would have the potential for cumulatively considerable damage to as-yet-undiscovered prehistoric or Native American burials, if monitoring for these features is not included as part of earthwork activities.

## **CLIMATE CHANGE**

Construction of the Sunridge Properties would have a cumulatively considerable impact on greenhouse gas emissions.

## **ES.5 COMPLIANCE WITH LAWS, POLICIES, AND PLANS**

Table ES-2 lists the laws, policies, and plans that the developers must address in constructing their projects. These apply to all alternatives and compliance would be required irrespective of a DA permit decision.

<b>Table ES-2</b> <b>Compliance with Applicable Laws, Policies, Plans,</b> <b>and Permit Requirements</b>	
<b>Applicable Laws, Policies, Plans,</b> <b>and Permit Requirements</b>	<b>Method of Compliance</b>
<b>Federal</b>	
National Environmental Policy Act	Addressed by this EIS
Endangered Species Act	Consultation with USFWS; Amendment to existing Biological Opinions, if appropriate
Migratory Bird Treaty Act	Addressed in EIS
Fish and Wildlife Coordination Act	Consultation with USFWS, Coordination Act Report, if appropriate
Executive Order 11990 – Protection of Wetlands	Addressed in EIS, CWA 404 permits
Vernal Pool Recovery Plan	Consultation with USFWS, Amendment to existing Biological Opinions, if appropriate
South Sacramento Habitat Conservation Plan (proposed)	Consultation with USFWS, Amendment to existing Biological Opinions, if appropriate
Clean Water Act	DA permit under Section 404 of CWA; Water quality certification under Section 401 of CWA
Safe Drinking Water Act	Ongoing reporting to CDPH
Clean Air Act	Addressed in EIS
Executive Order 12898 – Environmental Justice	Addressed in EIS
National Historic Preservation Act	Addressed in EIS; Consultation with SHPO under Section 106 NHPA
Archeological and Historic Preservation Act	Addressed in EIS
National Natural Landmarks	Addressed in EIS
Farmland Protection Policy Act	Addressed in EIS
Toxic Substances Control Act	Addressed in EIS
Resource Conservation and Recovery Act	Addressed in EIS
Comprehensive Environmental Response, Compensation, and Liability Act	Addressed in EIS
Key: CDPH = California Department of Public Health, CWA = Clean Water Act, EIS = Environmental Impact Statement, NPDES = National Pollutant Discharge Elimination System, SHPO = State Historic Preservation Office, USFWS = United States Fish and Wildlife Service	

<b>Table ES-2</b> <b>Compliance with Applicable Laws, Policies, Plans,</b> <b>and Permit Requirements (continued)</b>	
<b>Applicable Laws, Policies, Plans,</b> <b>and Permit Requirements</b>	<b>Method of Compliance</b>
<b>State</b>	
California Endangered Species Act	Unknown
California Fish and Game Code	Addressed in EIS
Porter-Cologne Water Quality Control Act	Addressed in EIS, Waste Discharge Requirements
California Department of Public Health Requirements	Ongoing reporting to CDPH
Senate Bill 901/Sacramento County General Plan Policy CO-20	Addressed in EIS
California Government Code- Environmental Justice	Addressed in EIS
California Clean Air Act	Addressed in EIS
California Air Resources Board and Ambient Air Quality Standards	Addressed in EIS
California Public Resources Code- Historic and Cultural Resources	Addressed in EIS
Farmland Mapping and Monitoring Program	Addressed in EIS
Williamson Act	Addressed in EIS
<b>Local</b>	
Rancho Cordova General Plan	Addressed in EIS
Zone 40 Water Supply Master Plan	Addressed in EIS
Project Level Water Supply Master Plan	Subdivision Map Approval
Water Forum Plan	Addressed in EIS
Regional Housing Needs Plan	Addressed in EIS
City of Rancho Cordova Transit Master Plan	Addressed in EIS
Mather Comprehensive Land Use Plan and Mather Airport Policy Area	Addressed in EIS
Fire Codes and Guidelines	Building Permit
Sacramento County Land Grading and Erosion Control Ordinance	NPDES Permit Compliance
Key: CDPH = California Department of Public Health, CWA = Clean Water Act, EIS = Environmental Impact Statement, NPDES = National Pollutant Discharge Elimination System, SHPO = State Historic Preservation Office, USFWS = United States Fish and Wildlife Service	



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# 1 INTRODUCTION AND STATEMENT OF PURPOSE AND NEED

This document is an Environmental Impact Statement (EIS) prepared under the National Environmental Policy Act (NEPA) to programmatically analyze and disclose the potential environmental effects of six residential development projects in the Sunridge Specific Plan Area located in the City of Rancho Cordova in southeastern Sacramento County (County), California. Collectively, the projects are referred to as the Sunridge Properties in this document.

Under Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (USACE) issues or denies Department of the Army (DA) permits for activities involving a discharge of dredged or fill material into waters of the United States, including wetlands. Permit applications for the six projects, each of which include such a discharge, were received by the USACE between 2005 and 2007. Although each of the six projects has independent utility and each could proceed absent the other projects, the USACE is approaching the projects and DA permit decisions programmatically as a “major Federal action” requiring the preparation of an EIS. The USACE is the lead Federal agency under NEPA for this action.

## 1.1 SETTING

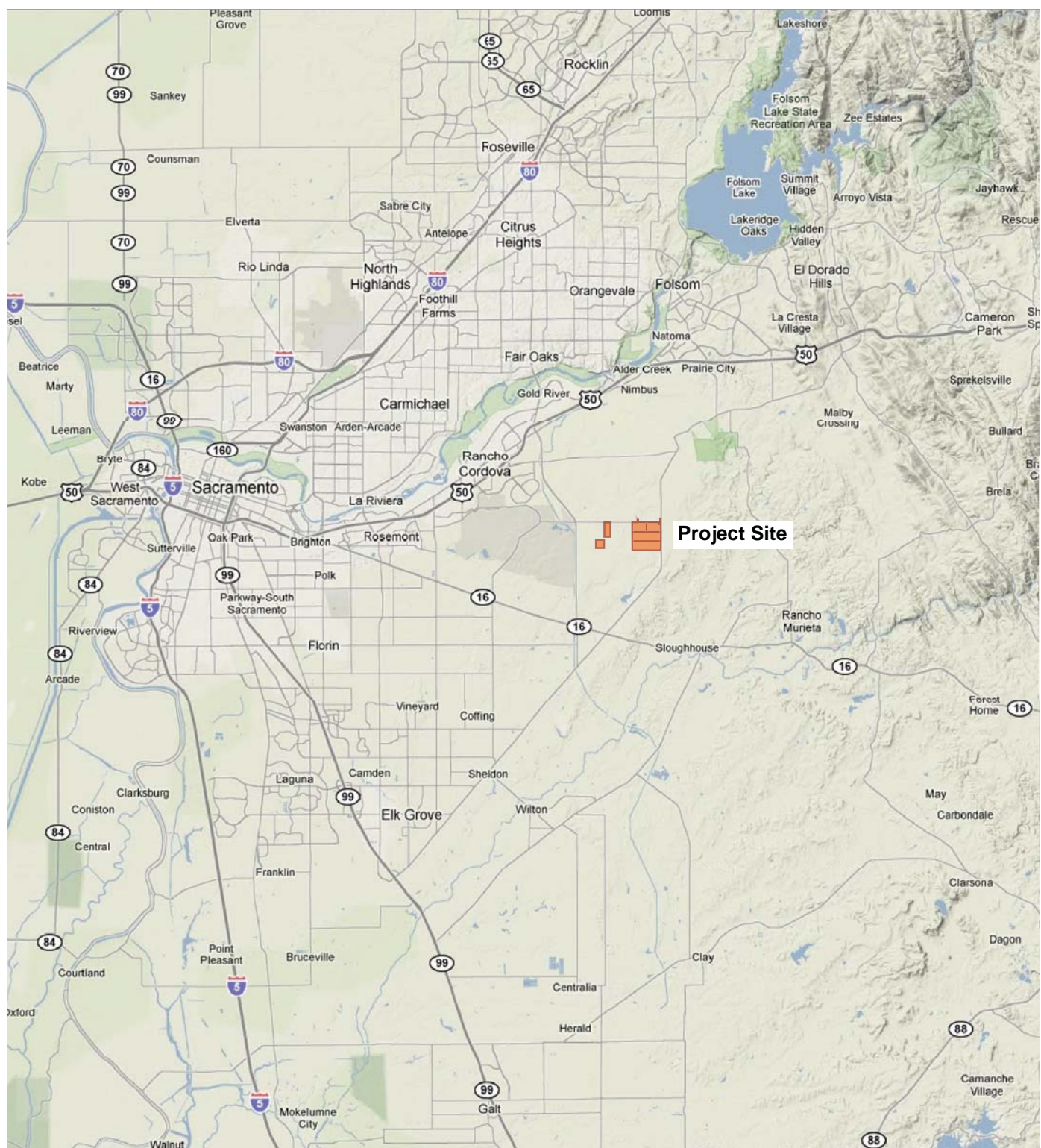
The Sunridge Properties are located in the Sunridge Specific Plan Area, which lies east of Sunrise Boulevard and the Folsom South Canal, south of Douglas Road, west of Grant Line Road, and north of Kiefer Boulevard, in the City of Rancho Cordova, Sacramento County, California (see Figure 1-1). The Sunridge Specific Plan Area is a master-planned area comprised of a total of nine residential developments. Three of the nine properties, North Douglas, Montelena, and Sunridge Park, are in the process of being developed. The remaining six properties addressed in this EIS are Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98, Douglas Road 103, and Arista del Sol. Figure 1-2 shows the boundaries of the project sites comprising the Sunridge Properties assessed in this EIS. Additional details regarding the six properties are presented in Section 1.4.

The Sunridge Properties are located in a region west of the Sierra Nevada foothills, at the eastern edge of the alluvial Sacramento Valley. The Sacramento Valley is a nearly flat alluvial plain that extends almost 180 miles from the Sacramento–San Joaquin Delta on the south to Redding on the north, and approximately 50 miles from the Sierra Nevada foothills on the east to the Coast Range on the west. The climate is characterized by warm, dry summers with an almost complete absence of rain, and mild winters with an average annual rainfall of 18 inches per year.

The Sunrise-Douglas Community Plan/Sunridge Specific Plan (County of Sacramento, 2001) (Sunridge Specific Plan) was approved by the County in 2002 and is part of a larger planning effort by the City of Rancho Cordova, called the Sunrise-Douglas Community Plan (Community Plan). The Plan Area, which encompasses approximately 2,600 acres, is located primarily south and east of the intersection of Douglas Road and Sunrise Boulevard.

The Area of Analysis for this EIS includes the Sunridge Specific Plan Area where the projects assessed in the EIS are located. Other proposed and permitted projects are addressed in the cumulative impacts analysis in this document. Chapter 4 of this EIS provides more details on the cumulative impact Area of Analysis.

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Source: Google Maps, terrain

Figure 1-1. Regional Location

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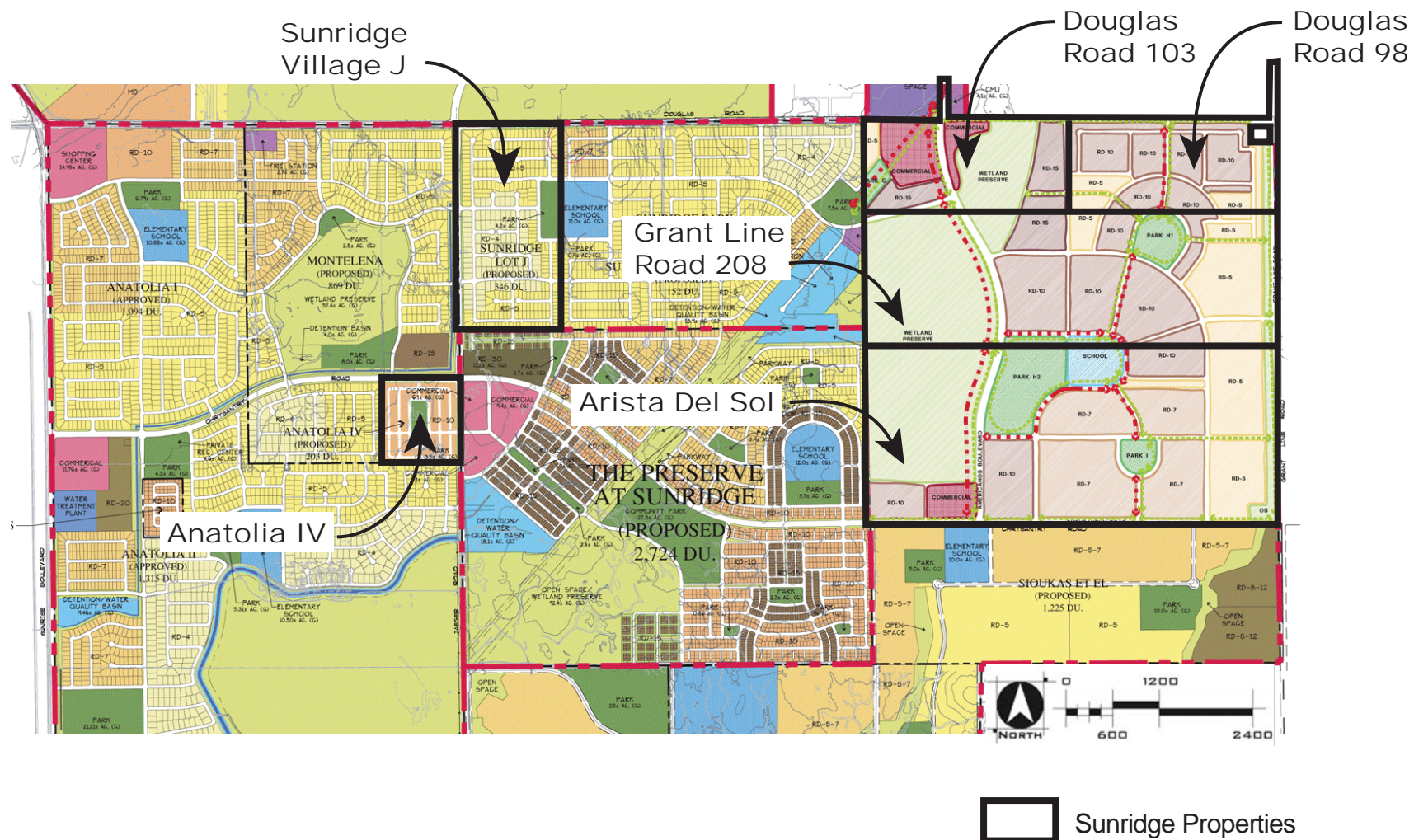


Figure 1-2. Project Site

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## 1.2 BACKGROUND

In May 2002, prior to its certification of the Sunrise-Douglas Community Plan Environmental Impact Report (EIR), the County initiated meetings with the U.S. Fish and Wildlife Service (USFWS), the USACE, and the U.S. Environmental Protection Agency (USEPA) (collectively the Federal Agencies), the California Department of Fish and Game, landowners and interested developers within the Community Plan to discuss vernal pools and permitting, including possible large scale preservation. On July 17, 2002, the County approved both the Community Plan and the Sunridge Specific Plan EIR. The conditions of approval for the Specific Plan require individual applicants to obtain any necessary USACE permit for fill of waters of the United States. On July 1, 2003, the Community Plan was incorporated into the City of Rancho Cordova, bringing the Community Plan area under the City's land use jurisdiction.

Between 2004 and 2007, developers for the nine projects in the Plan Area submitted applications for DA permits to the USACE to fill waters of the U.S., including wetlands. All nine projects largely followed the Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area (Conceptual Strategy), an advisory document developed by the USACE, USEPA and USFWS (Appendix A). Following the permit review process, which includes public participation, the USACE prepared several Environmental Assessments (EAs) under NEPA (Appendix B), and issued DA permits for eight of the nine projects (Appendix C). The ninth project, Arista del Sol, is still pending a permit decision.

The USFWS issued the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* in 2005 to present the overall strategy to protect and enhance vernal pool species so that when successful the species can be delisted from endangered species status. The recovery plan addresses 33 plant and animal species, 20 of which are listed as threatened or endangered, that occur either exclusively or primarily within vernal pool, swale or ephemeral freshwater habitat. The primary threats to the species and their habitats are urban development with associated infrastructure, agricultural conversion, altered hydrology, nonnative invasive species, and grazing. The goals of the recovery plan are to further understand the requirements of the species, stabilize populations from further decline, institute measures to facilitate recovery and habitat protection, and ultimately delist the species.

In June 2006, the California Native Plant Society, Defenders of Wildlife, and Butte Environmental Council (plaintiffs) filed an action in federal District Court challenging, among other things, the USACE's issuance of the Clean Water Act Section 404 permits for the nine projects in the Sunridge Specific Plan Area and the use of the Conceptual Strategy as an agency action (*California Native Plant Society, et al. v. U.S. Environmental Protection Agency, et al.*, Case No. 06-3604-PJH). In October 2006, plaintiffs sought a temporary restraining order to stop ongoing development activity on the project sites pending adjudication of the merits. The Court denied the temporary restraining order but heard plaintiffs' Motion for preliminary injunction in December 2006. Seven months later, in July 2007, the Court granted a preliminary injunction on a portion of plaintiffs' complaint, finding that plaintiffs had raised a serious question as to whether the USACE took the requisite "hard look" at cumulative impacts and alternatives in the EAs prepared for each of the DA permits and, accordingly, enjoined "any further construction, groundbreaking, earthmoving, or other on-the-ground activity that may affect vernal pool habitat or endangered or threatened species, taken in reliance on the Section 404(b) permits." In accordance with the Preliminary Injunction Order, the USACE sent formal letters to five permittees suspending the Clean Water Act Section 404 permits for the five projects subject to the Court's order. The sixth project, Arista del Sol, has not yet been permitted. The USACE agreed to provide plaintiffs with a copy of any DA permit issued for that project and to provide at least sixty (60) days advance notice of any construction, groundbreaking, earthmoving, or other on-the-ground activity that may affect vernal pool habitat or endangered or threatened species at the Arista del Sol project site taken in reliance on a DA permit. The



Court later modified the Preliminary Injunction Order to clarify that the injunction did not apply to the three permitted projects (North Douglas, Montelena, and Sunridge Park) that had already filled in waters of the U.S. in reliance on their permits.

At a subsequent Case Management Conference, Federal defendants requested a partial “remand” in order to supplement the decision documents to address the procedural NEPA concerns raised by the Court’s Preliminary Injunction Order. The Court delayed adjudication of the merits, in part to allow Federal defendants time to undertake the “remand” and scheduled a date of March 28, 2008 for USACE to produce any supplemental environmental assessments and decision documents. The date was later postponed to May 12, 2008. On May 12, 2008, the USACE filed a *Notice of Filing Regarding Further Administrative Action*, in which it stated:

“The Corps has reviewed and analyzed the environmental assessments in light of the standards and principles set forth in the Court’s [Preliminary Injunction] Order as to the Plaintiffs’ second cause of action. Based upon that further review, the Corps has elected not to issue revised environmental assessments. Instead, with respect to Plaintiffs’ second cause of action, the Corps believes it is appropriate to proceed with preparation of an Environmental Impact Statement pursuant to NEPA and its implementing regulations.”

In December 2008, the Court granted a stay in the litigation until November 2010 to allow USACE to complete preparation of an EIS. The Preliminary Injunction and USACE permit suspensions remain in effect.

Because three of the permittees, acting in reliance on the DA permit, filled waters of the U.S. as authorized under their permit, this EIS does not specifically analyze the individual effects of those projects. This EIS addresses the other six (collectively, Sunridge Properties) subject to the injunction. However, all projects in the Sunridge Specific Plan Area, as well as other past, present and reasonably foreseeable activities in the Area of Analysis applicable to the evaluated resources, including the three projects already developed, are part of the cumulative effects analysis found in Chapter 4 of this EIS.

### **1.3 CONCEPTUAL STRATEGY**

From March to May 2004, representatives of the USACE, USEPA and USFWS met to formulate a conceptual approach to avoid, minimize, and preserve aquatic resource habitat in the Sunrise-Douglas Community Plan Area. This effort was intended to achieve reasonable protection and conservation of federally threatened and endangered species under the Endangered Species Act (ESA), while taking a regional approach to avoidance and minimization of impacts to the waters of the U.S., including wetlands, in accordance with the USEPA 404(b)(1) guidelines (Guidelines). The meetings resulted in an advisory document entitled “A Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area” (Appendix A).

To meet the goals of the ESA and CWA, the Federal Agencies arrived at the boundaries of the “Preserve Areas” based on best professional judgment and limited information regarding regional and site-specific species accounts and wetland delineations, while recognizing that development was planned in the area. Of particular focus was the preservation of vernal pool complexes and corridors for Morrison Creek and Laguna Creek. The mapped boundaries are the smallest that would be acceptable to the Federal Agencies and are based on ten principles and standards that would be followed by permittees as each element of the overall development proceeds.

The Conceptual Strategy is not part of the Proposed Action being evaluated in this EIS. The Conceptual Strategy was developed as an advisory document for permittees and planners during the design and

planning of projects in the Sunrise-Douglas Community Plan Area. The Federal Agencies used the strategy, along with other information, to aid in the review of proposed development and evaluate the probable individual and cumulative effects on aquatic resources and sensitive species. The Federal Agencies anticipated that permit decisions and biological opinions would be completed on a case-by-case basis, using site-specific and aquatic resource habitat information. Each proposed project would be evaluated on its own merits, within the larger context of the Sunrise-Douglas Community Plan Area. Depending on the particular hydrology, habitat features, and development plans for a particular parcel, it was anticipated the preserve boundaries may need to be adjusted to minimize direct and indirect impacts to aquatic resources. Appropriate compensatory mitigation would be developed following demonstrated avoidance and minimization of project impacts.

In this document, the Conceptual Strategy was used to inform the consideration of alternatives.

## **1.4 SUNRIDGE PROPERTIES**

The Proposed Action addressed in this EIS reflects planning goals developed in the Master Plan for Sacramento County, Sunrise-Douglas Community Plan, Sunridge Specific Plan, and applications for DA permits provided to USACE. These documents responded to needs for additional housing, as indicated by market forces. Permittees purchased land in areas designated for development in the planning documents with the intent to develop the properties per planning document goals. Each permittee created a project description with design considerations that incorporated elements of the Conceptual Strategy and submitted applications for DA permits to the USACE to fill wetlands and other waters of the U.S.

With the Conceptual Strategy being one of many factors considered in its permit decision, the USACE issued permits for five of the six projects that are the subject of this EIS and were included in the modified Injunction Order. Projects receiving DA permits were: Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98, and Douglas Road 103 (see Appendix C). The sixth project, Arista del Sol, had a pending permit application at the time of the lawsuit and no permit decision has been made by USACE. The acreage of waters of the U.S. that would be filled by each project was obtained from the DA permits for each project, except for Arista del Sol, where it was obtained from the permit application. The Biological Opinions prepared by the USFWS for each project are found in Appendix D.

The Proposed Action evaluated in this EIS combines the six development projects at a programmatic level to address a greater detailed cumulative impacts analysis. Collectively, they are referred to as the Sunridge Properties. The Sunridge Properties are summarized below, and are described further in Chapter 2 as part of the Proposed Action.

### **1.4.1 ANATOLIA IV**

The Anatolia IV project received a DA permit (USACE ID: SPK-1994-00210) from USACE on October 2, 2006. It is located on a 24-acre site south of Douglas Road and adjacent to the west side of Jaeger Road. The project involves filling approximately 1.4 acres of waters of the U.S., including wetlands, to construct 134 houses, roadways, and other infrastructure. As compensation for the loss of waters, the permittee purchased 1.4 acres of vernal pool creation credits at the Laguna Terrace Mitigation Bank, and purchased 2.7 credits of preservation credits from the Anatolia Preserve to satisfy USFWS requirements, and 2.7 credits at Gill Ranch to satisfy USACE requirements. No on-site preserve area is proposed. The permittee for this project is the Sunridge, LLC.

### **1.4.2 SUNRIDGE VILLAGE J**

The Sunridge Village J project received a DA permit (USACE ID: SPK-2001-00230) from USACE on October 24, 2006. It is located on an 81.3-acre site in the southwest corner of the intersection formed by Douglas Road and Jaeger Road. The project involves filling approximately 3.0 acres of waters of the U.S., including wetlands, to construct 369 houses, roadways, and other infrastructure. No on-site preserve area is proposed. As compensation for the loss of waters, the permittee paid for the creation of 3.4 acres of vernal pools and the preservation of functioning wetland habitat. The Corps' required mitigation action has been completed. The USFWS Biological Opinion concluded that the project would adversely affect approximately 2.49 acres of vernal pool habitat, 1.88 acres directly and 0.36 acres indirectly. As mitigation the USFWS identified preserving 9.96 acres at Bryte Ranch Conservation Bank and creating 2.10 acres of vernal pool and seasonal wetland habitat. The permittee for this project is Cresleigh Homes.

### **1.4.3 GRANTLINE 208**

The Grantline 208 project received a DA permit (USACE ID: SPK-1994-00365) on October 25, 2006. It is located on a 211-acre site in the southeast corner of the intersection formed by Douglas Road and Grant Line Road. As part of the project, approximately 5.7 acres of waters of the U.S., including wetlands, would be filled to construct 855 houses, roadways, and other infrastructure. The permittee proposes to preserve 68.1 acres of wetlands within its property. Compensatory mitigation identified in the DA permit is the restoration and/or creation of 6.2 acres of vernal pool habitat off-site. This action has not been taken, but it is expected to occur within the Gill Ranch Open Space Preserve, a 10,400-acre preserve in eastern Sacramento County. The USFWS Biological Opinion concluded that the project would adversely affect approximately 5.55 acres directly and 0.45 acres indirectly of vernal pool habitat. To mitigate for this loss, the USFWS instructed the permittee to preserve 11.55 acres of vernal pool habitat at either the Town Center Property or Anatolia Conservation Bank, and to create 6.0 acres of vernal pool crustacean habitat. The permittee for this project is Grantline Investors, LLC.

### **1.4.4 DOUGLAS ROAD 98**

The Douglas Road 98 project received a DA permit (USACE ID: SPK-2002-00568) on May 31, 2006. It is located on a 105-acre site south of Douglas Road and adjacent to the west side of Grant Line Road. As part of the project, approximately 3.9 acres of waters of the U.S., including wetlands, would be filled to construct 693 houses, roadways, and other infrastructure. No on-site preserve area is proposed. To compensate for the loss of waters, 3.9 acres of wetland habitat would be constructed or created off-site. This action has not been taken; but is expected to occur within Gill Ranch Open Space Preserve, a 10,400-acre preserve in eastern Sacramento County. The USFWS Biological Opinion concluded that the project would adversely affect 3.70 acres of vernal pool habitat. To mitigate for this loss, the permittee is required to preserve either 7.8 acres of vernal pool crustacean habitat at the Anatolia preserve or 15.6 acres at Borden Ranch, and create 3.91 acres at the Silva Consolidated Conservation Bank. The permittee for this project is Woodside Homes.

### **1.4.5 DOUGLAS ROAD 103**

The Douglas Road 103 project received a DA permit (USACE ID: SPK-1997-00006) on June 18, 2007. It is located on a 106-acre site adjacent to the south side of Douglas Road and west of Grant Line Road. As part of the project, approximately 2.0 acres of waters of the U.S., including wetlands, would be filled to construct 301 houses, roadways, and other infrastructure. The permittee proposes to preserve 44 acres of wetlands on-site. Compensatory mitigation identified in the DA permit but not yet implemented includes restoring or creating 7.3 acres of vernal pool habitat and preserving 5.9 acres of vernal pool

habitat off-site. Mitigation is expected to occur within Gill Ranch Open Space Preserve, a 10,400-acre preserve in eastern Sacramento County. In the Biological Opinion, the USFWS concluded that the project would directly affect 1.97 and indirectly affect 2.91 acres of vernal pool crustacean habitat. To mitigate for this loss, the USFWS directed the permittee to restore 4.88 acres of vernal pool habitat. The permittee for this project is Douglas Grantline 103 Investors, LLC.

#### **1.4.6 ARISTA DEL SOL**

The Arista del Sol project (USACE ID: SPK-2004-00458) is located on a 215-acre site south of Douglas Road and adjacent to the west side of Grant Line Road. The applicant proposes to fill approximately 13.9 acres of waters of the U.S., including wetlands, to construct 906 houses, roadways, and other infrastructure. The permittee proposes to preserve 42 acres of wetlands on-site. According to the Biological Opinion issued for the project, approximately 12 acres of wetland habitat would be created and 22.5 acres of wetland habitat preservation would occur off-site. Mitigation is expected to occur within Gill Ranch Open Space Preserve, a 10,400-acre preserve in eastern Sacramento County. The applicant for this project is Pappas Investments.

### **1.5 NATIONAL ENVIRONMENTAL POLICY ACT AND ENVIRONMENTAL IMPACT STATEMENT PROCESS**

This EIS has been prepared in accordance with the requirements of NEPA of 1969 (42 U.S. Code (USC) §4321, as amended) and the Council for Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations (CFR) Parts 1500-1508), dated July 1, 1988, and Appendix B to 33 CFR Part 325, NEPA Implementation Procedures for the USACE Regulatory Program. The NEPA requirements state that agencies of the Federal Government shall prepare a detailed statement in order to evaluate “major federal actions significantly affecting the quality of the human environment.” A “major federal action” may include projects financed, assisted, conducted, regulated, or approved by a Federal agency.

The EIS is a disclosure document intended to inform decision makers and the public of the potential significant environmental effects of the proposed action and alternatives to the proposed action. The EIS identifies potential means to reduce or avoid significant effects and analyzes feasible alternatives to the proposed action. The USACE will consider information in this EIS along with other information before making a final decision.

In addition, this EIS is a programmatic, rather than project-level, document. A programmatic document evaluates collectively a group of similar actions at a broad level. Each of the actions is intended to be evaluated at a project-specific level once the details of the project(s) are known. Agencies rely on programmatic analyses to focus the scope of alternatives, environmental effects analyses, and mitigation in subsequent tiered levels of documentation. In this case, project-specific analyses were previously completed between 2004 and 2007 for five of the six Sunridge Properties projects through project-specific EAs. As a programmatic document, this EIS is intended to validate the existing EAs for DA permits as tiered documents. The EAs will need to be supplemented to reflect this EIS. The sixth project, Arista del Sol, has a DA permit decision pending and will require a new NEPA document that tiers from this EIS. This programmatic analysis, therefore, applies to a broader geographic area and range of effects than was addressed by any individual EA and expands on the previous analyses to evaluate cumulative effects more effectively.

One of the initial steps in the environmental review process is “scoping.” Scoping is defined in the CEQ NEPA regulations as “an early and open process for determining the scope of issues to be addressed and

for identifying significant issues related to a proposed action.” Scoping is intended to be part of the process for development and preparation of a NEPA document and not a single event or meeting. This EIS has been developed to be consistent with the CEQ’s NEPA scoping guidelines.

A Notice of Intent (NOI) to prepare an EIS for the Sunridge Properties was published in the Federal Register on July 20, 2009 (Vol. 74, No. 137, pg. 35166). On the same date, the USACE also issued a public notice regarding its intent to prepare an EIS. The NOI and public notice requested public scoping comments be submitted to the USACE by August 31, 2009. As part of its scoping for this document, the USACE held two public scoping meetings in Rancho Cordova on July 30, 2009. Appendix E of this Draft EIS contains public meeting materials and comments provided during the scoping period.

This Draft EIS has been distributed for public review and comment in accordance with NEPA and its implementing regulations (40 CFR Parts 1500 – 1508). Copies of the EIS have been submitted to the USEPA and appropriate information repositories. A Notice of Availability to review and comment on the Draft EIS has been issued for a 45-day public review period. Public comments and responses will be compiled and addressed in the Final EIS.

Once the Final EIS is completed, a Notice of Availability will be published in the Federal Register and local newspapers stipulating when it will be available for a 30-day review, prior to the signing of a Record of Decision (ROD). The ROD is a written, public record explaining the reasons the USACE chose a particular course of action. The selected action and all mitigation measures will be identified in the ROD. No DA permit will be issued, reissued or revoked until the ROD is signed.

## **1.6 INTENDED USE OF THIS DOCUMENT**

This document is designed to programmatically analyze the six projects comprising the Sunridge Properties and be responsive to the Court Preliminary Injunction Order. Specifically, the USACE intends to use this document to make one or more of the following decisions:

1. To reissue one or more of the five DA permits issued for the Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98 and Douglas Road 103 projects, after supplementing site-specific environmental assessments tiered from this EIS;
2. To modify the conditions of one or more of the five DA permits issued for the Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98 and Douglas Road 103 projects, after supplementing site-specific environmental assessments tiered from this EIS;
3. To initiate revocation procedures for one or more of the DA permits issued for the Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98 and Douglas Road 103 projects, not allowing for discharge of fill material into waters of the U.S.; and
4. To make a DA permit decision for the Arista del Sol project, after preparing a site-specific NEPA document tiered from this EIS.

## **1.7 AUTHORITY**

Because the Proposed Action involves discharges of fill material to waters of the US, including wetlands, the USACE is required to review and make permit decisions on the actions under Section 404 of the CWA. Under its Regulatory Program, the USACE has the authority to review and issue DA permits (33 USC §1344). The USACE review process is described at 33 CFR Parts 320 through 332. In its regulatory capacity, the USACE is neither a proponent nor opponent of a project seeking permission.

Under NEPA, the USACE is the lead agency responsible for preparing the EIS for the six Sunridge Properties (the “major federal action”), including analyzing and disclosing the environmental effects of the Proposed Action. Both the USEPA and USFWS were invited to participate as cooperating agencies but declined.

## **1.8 PURPOSE AND NEED**

### **1.8.1 NEED FOR THE PROPOSED ACTION**

The County has been undergoing continuous growth, and increased housing needs have been identified as part of community planning efforts addressed in the Sacramento County General Plan, Sunrise-Douglas Community Plan, Sunridge Specific Plan, and the City of Rancho Cordova. The Proposed Action is necessary to meet a portion of the identified housing needs and to address housing shortages projected for the Sacramento region in the above-mentioned plans. In accordance with the planned growth for south Sacramento County, six developers purchased property within the Sunridge Specific Plan Area with the intent to develop the property for residential purposes to meet the identified housing needs.

### **1.8.2 PURPOSE OF THE PROPOSED ACTION**

NEPA regulations (40 CFR §1502.13) require that an EIS contain a statement of purpose and need that “briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives, including the proposed action.” The statement of purpose and need is important under NEPA in helping the USACE to develop and assess a reasonable range of alternatives to the Proposed Action in the EIS.

In addition to NEPA requirements related to the purpose and need, the USEPA Guidelines impose additional requirements on USACE’s definition of purpose and need for the permit actions under the CWA. The USEPA Guidelines further sub-divide the project purpose into a basic project purpose, which is used to determine if an action is water dependent and must be located in or near an aquatic site, and the overall project purpose, which more narrowly defines the project purpose and considers the needs of the permit applicant.

The basic project purpose of the Proposed Action is to construct a residential development. Residential development is not a “water dependent” activity. As such, under the Guidelines, alternatives which do not involve special aquatic sites (wetlands) are presumed to exist unless clearly demonstrated otherwise.

The overall purpose of the Proposed Action is to construct a large residential development, including supporting infrastructure, in southeast Sacramento County.

The evaluation of a reasonable range of practicable alternatives to meet the overall project purposes is discussed in Chapter 2 of this EIS.

## **1.9 SIGNIFICANT ISSUES**

Wetlands and associated vernal pools are of particular concern to resource agencies and special interest groups due to the historical reduction of their extent. Wetlands and vernal pools occupy land that first was conducive to agricultural development and now community development. The approximately 7 million acres of vernal pool landscapes that were estimated to be present in the 1800s has been reduced to less than 967,600 acres, an 87% reduction in the original habitat acreage (Holland, 1998b). Based on observed species distribution profiles and habitat loss estimates of 50% to 85%, modeling has predicted

that 15% to 33% of the original biodiversity of Central Valley vernal pool crustaceans has been lost since the 1800s (King, 1998). Any development within wetlands and vernal pools continues the trend for habitat loss. Although mitigation is now required for the loss of wetlands and vernal pools, the USFWS's analysis of the losses indicates that replacement habitat does not always equate to the quality of the original habitat.

## **1.10 THE PRIMARY STUDIES AND REPORTS USED TO DEVELOP THIS EIS**

It should be noted that this list is not exhaustive of primary studies and reports used to develop this draft EIS. Other relevant documents were consulted as cited in the Draft EIS.

A Conceptual Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Area. June 2004 (Conceptual Strategy).

Clean Water Act §404(b)(1) Alternatives Supplemental Submittal Sunrise Douglas Arista del Sol Property April, 2006.

Department of the Army Permit Evaluation and Decision Document: Douglas Road 98, Application No. 200200568, Douglas Road 98 Village J.

Department of the Army Permit Evaluation and Decision Document: Centex and Pulte LLC, Application No. 200100448, Montelena Project.

Department of the Army Permit Evaluation and Decision Document: Cresleigh Homes Corporation, Application No. 200100230, Sunridge Village J.

Department of the Army Permit Evaluation and Decision Document: Jim Galovan, Grantline Douglas 103 Investors, LLC, Application No. 199700006, Douglas Road 103.

Department of the Army Permit Evaluation and Decision Document: Grantline Investors, LLC, Application No. 199400365, Grantline 208 Project.

Department of the Army Permit Evaluation and Decision Document: Application No. 199400218, North Douglas Project.

Department of the Army Permit Evaluation and Decision Document: Sunridge, L.L.C., Mark Enes, No. 199400210, Anatolia IV.

ECORP. 2004. Biological Resource Assessment for North Douglas. Report prepared for Lennar Communities, Inc.

ECORP. 2004. Biological Resource Assessment for Sunridge Ranch. Report prepared for Centex Homes.

Foothill Associates. 2004. Anatolia IV Biological Assessment. Report prepared for Pappas Investments..

Foothill Associates. 2005. Arista del Sol Biological Assessment. Report prepared for U.S. Fish and Wildlife Service on Behalf of Sunridge LLC.

Foothill Associates. 2005. Douglas Road 103 Biological Assessment. Report prepared for Woodside Homes.

Foothill Associates. 2004. Douglas Road 98 Biological Assessment. Report prepared for U.S. Fish and Wildlife Service on Behalf of Woodside Homes of California.

Foothill Associates. 2005. Grantline 208 Biological Assessment. Report prepared for River West Investments.

Foothill Associates. 2004. Sunridge Village J Biological Assessment. Report prepared for USFWS on behalf of Cresleigh Homes.

Holland 1998b. As referenced in Holland, Robert F. Ph.D. 2009. Great Valley Vernal Pool Distribution; Rephotorevised 2005. Prepared for Placer Land Trust, Auburn, CA. September 2009.

Holland, R.F. 2009. Great Valley Vernal Pool Distribution Rephoto, revised 2005. Prepared for Placer Land Trust, September.

King, Jamie L. 1998. Loss of Diversity as a Consequence of Habitat Destruction in California Vernal Pools. Ecology, Conservation, and Management of Vernal Pool Ecosystems-Proceedings from a 1996 Conference. California Native Plant Society, Sacramento, CA. 1998. pp 119-123.

Sunrise-Douglas Community Plan Environmental Impact Report, 2001.

Sunrise-Douglas Community Plan/Sun Ridge Specific Plan Project Environmental Impact Report, County of Sacramento, March 1999.

USFWS Section 7 Consultation documents on the Proposed Douglas Road 103 Project. March, 2006.

USFWS Section 7 Consultation documents for the Proposed Grantline 208 Project. May, 2006.

USFWS Section 7 Consultation documents on the Proposed Arista del Sol Project. June, 2006.

USFWS Section 7 Consultation documents for the Proposed Sunridge Park Project. January, 2005.

USFWS Section 7 Consultation documents for the Proposed Sunridge Village J Project. December, 2004.

USFWS Formal Endangered Species Consultation documents on the Proposed Douglas Road 98 Project. January, 2005.

USFWS Formal Section 7 Endangered Species Consultation documents on the North Douglas Project. December, 2004.

USFWS Formal Endangered Species Consultation documents on the Proposed Anatolia IV Project. December, 2004.

## **1.11 REPORT ORGANIZATION**

This EIS has been organized to present information regarding the Proposed Action and alternatives, and the effects associated with implementing the alternatives. The EIS follows the recommended EIS format and conforms to other NEPA requirements for evaluating potential effects on the environment.



This EIS has been organized in the following manner:

- The cover sheet provides lead agency and contact information, an abstract of the EIS, and comment submission information.
- The executive summary presents an overview of the project and alternatives, environmental impacts, mitigation measures, and conclusions about the net effects.
- Chapter 1 introduces the project and provides the background for the preparation of this EIS.
- Chapter 2 describes the proposed action and alternatives.
- Chapter 3 describes the existing environmental conditions for the Area of Analysis along with the environmental effects of implementation of the proposed project and alternatives to the proposed action.
- Chapter 4 presents the cumulative effects analysis and provides disclosures required by NEPA and the CEQ.
- Chapter 5 provides the discussion on how implementation of the proposed project or alternatives would address compliance with applicable laws and regulations.
- Chapter 6 provides the public participation aspects of this EIS.
- Chapter 7 provides the list of preparers of this EIS.

## 2 PROPOSED ACTION AND ALTERNATIVES

Chapter 2 describes the process used for developing alternatives to the Proposed Action, the alternatives considered, and the screening criteria and principles used to retain and eliminate alternatives. The alternatives that were considered during the preparation of this environmental impact statement (EIS) are described, including the rationale for why certain alternatives were not carried forward in the evaluation. Three alternatives were selected to be carried forward for analysis in the EIS.

### 2.1 NEPA REQUIREMENTS

The Council on Environmental Quality (CEQ) Regulations require that the evaluation of alternatives in an EIS include (40 Code of Federal Regulations (CFR) §1502.14):

- An objective evaluation of reasonable alternatives;
- Identification of the alternatives considered but eliminated from detailed study, along with a brief discussion of the reasons that these alternatives were eliminated;
- Information that would allow reviewers to evaluate the comparative merits of the proposed action and the alternatives considered in detail;
- Consideration of a no action alternative;
- Identification of the agency's preferred alternative, if any; and
- Appropriate mitigation measures not already included in the proposed action or alternatives.

Additionally, under its National Environmental Policy Act (NEPA) implementing regulations, the USACE is required to identify and consider a “no permit” alternative. The no permit alternative is one that would not require a DA permit to construct the project (33 CFR Part 325, Appendix B). The no permit alternative in this EIS serves as the No Action Alternative.

Alternatives to the Proposed Action that were considered and evaluated in this EIS are described below. NEPA requires the analysis of alternatives to occur at a substantially similar level of detail as that devoted to the proposed action. The NEPA regulations require agencies to rigorously explore and objectively evaluate all reasonable alternatives and to devote substantial treatment to each alternative considered, including the proposed action.

The CEQ provides guidance on the range of alternatives to be analyzed (see CEQ's Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act, Nos. 1a, 1b, and 2a). The range of alternatives must include all reasonable alternatives. Reasonable alternatives include “those that are practical or feasible from the technical and economic standpoint” and that are based on “common sense, rather than simply desirable from the standpoint of the applicant.” Where there are a large number of possible alternatives, only a reasonable number that cover the spectrum of alternatives must be analyzed and compared in the EIS.

## 2.2 USEPA SECTION 404 (b) (1) GUIDELINES

The United States Environmental Protection Agency (USEPA) Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material (USEPA Guidelines) enumerate the substantive criteria to be used by the U.S Army Corps of Engineers (USACE) in evaluating discharges of fill material into waters of the U.S. under Section 404 of the Federal Clean Water Act (CWA). For USACE actions subject to NEPA, “the analysis of alternatives required for NEPA environmental documents will in most cases provide the information for the evaluation of alternatives” under the USEPA Guidelines (40 CFR §230.10(a)(4)). The USEPA Guidelines were developed as the substantive environmental standards by which all applications for DA permits under Section 404 CWA are evaluated. The USEPA Guidelines specifically require that “no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences” (40 CFR §230.10(a)).

The key provisions of the USEPA Guidelines are listed below:

- The discharge must be the least environmentally damaging practicable alternative (LEDPA).
- For non-water dependent projects, practicable alternatives that do not involve special aquatic sites are presumed to be available to the applicant unless clearly demonstrated otherwise;
- All practicable alternatives to the proposed discharge that do not involve a discharge into a special aquatic site are presumed to have less adverse impacts on the aquatic ecosystem, unless clearly demonstrated otherwise;
- The discharge must not violate any water quality standard or toxic effluent standard, or jeopardize the continued existence of a threatened or endangered species;
- The discharge must not result in a significant degradation of the waters of the U.S.; and
- Unavoidable impacts on the aquatic ecosystem must be mitigated.

In contrast to the reasonable range of alternatives under NEPA, the USEPA Guidelines define practicable alternatives as “available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purposes” (40 CFR §231.10 (a)(2)). Practicable alternatives under the USEPA Guidelines are considered a subset of the more broadly defined reasonable alternatives under NEPA. The range of alternatives carried forward for detailed analysis in the EIS are those that meet the need and overall project purpose, and are considered reasonable under NEPA and practicable under the USEPA Guidelines..

## 2.3 DEVELOPMENT AND SCREENING OF ALTERNATIVES

The Proposed Action is to develop six properties in the Sunridge Specific Plan Area (“Sunridge Properties”). As indicated in Chapter 1, the overall purpose of the Proposed Action is to construct a large residential development, including supporting infrastructure, in southeast Sacramento County. Alternatives to the Proposed Action were developed based on the following considerations:

- NEPA alternatives development and principles [40 CFR §1502.14; CEQ Forty Questions];

- USEPA alternatives development and screening criteria under the USEPA Guidelines;
- Need for and purpose of the Proposed Action;
- Existing NEPA documents prepared for projects in the Sunrise-Douglas Community Plan Area;
- Comments submitted during the public scoping process;
- Review of potential off-site alternatives; and
- The Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area (Conceptual Strategy) developed by the USACE, USFWS, and USEPA.

An initial set of potential alternatives was evaluated to determine whether they were reasonable and practicable. The criteria and principles used to evaluate and screen alternatives to the Proposed Action include:

- USACE regulatory authority under the CWA;
- Availability of land;
- Ability to meet the overall purpose;
- Site topography and other physical barriers to development;
- Potential impacts to waters of the U.S., including wetlands;
- Potential effects on special status species; and
- Aquatic habitat and corridor continuity

## **2.4 ALTERNATIVES CONSIDERED DURING PREPARATION OF THIS EIS**

This section describes alternatives that were developed for the Sunridge Properties during preparation of the EIS using the principles and criteria defined in Section 2.3, and which are eliminated or carried forward for evaluation.

### **2.4.1 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD**

This section describes alternatives that were considered during development of the EIS that were not carried forward for analysis. Alternatives were not carried forward if they were deemed not reasonable or practicable, or had greater adverse environmental effects. The rationale follows the description of each alternative evaluated.

#### **2.4.1.1 CALIFORNIA NATIVE PLANT SOCIETY 500-FOOT SETBACK ALTERNATIVE**

On August 31, 2009, the California Native Plant Society (CNPS) submitted a comment letter requesting “that an alternative that is even more protective of resources than the [Proposed Project Alternative] be analyzed in the EIS for the [Sunridge Properties]. Specifically, we request that the tributaries to Morrison

and Laguna Creeks be fully buffered by at least 500 feet on both [sides]. Furthermore, the edges of the proposed onsite avoidance area must be smoothed in order to minimize edge effects.” The intent of this alternative is to protect the headwaters of Laguna Creek, as well as a portion of Morrison Creek, and would include a 500-foot setback on each side of Morrison and Laguna Creeks, as well as a tributary to Laguna Creek. The 500-foot setback lies on the Douglas 98, Douglas 103, Grantline 208 and Arista del Sol project sites (Figure 2-1).

The CNPS alternative would likely result in the fill of approximately 23 acres of vernal pools and approximately 16,900 linear feet of stream. Furthermore, the 500-foot setback from Morrison and Laguna Creeks, while protective of the headwaters and vernal pools immediately adjacent to creeks, also does not encompass a large number of high-quality vernal pools in other locations within the project sites. Specifically, the CNPS alternative would result in the loss of a large assemblage of vernal pools in the western portions of the Grantline 208 and Arista del Sol project sites. These wetlands are identified for preservation in the Conceptual Strategy, as well as the Proposed Project Alternative.

The CNPS alternative includes preserving a large upland area on the Douglas 98 site with two very small ephemeral tributaries and only a few wetlands. The relative hydrological and biological contribution of these aquatic resources to the Morrison Creek watershed appears to be extremely minor. The proposed preserve extends into Douglas 103, which supports the primary headwaters for Morrison Creek and a substantially greater density of vernal pools.

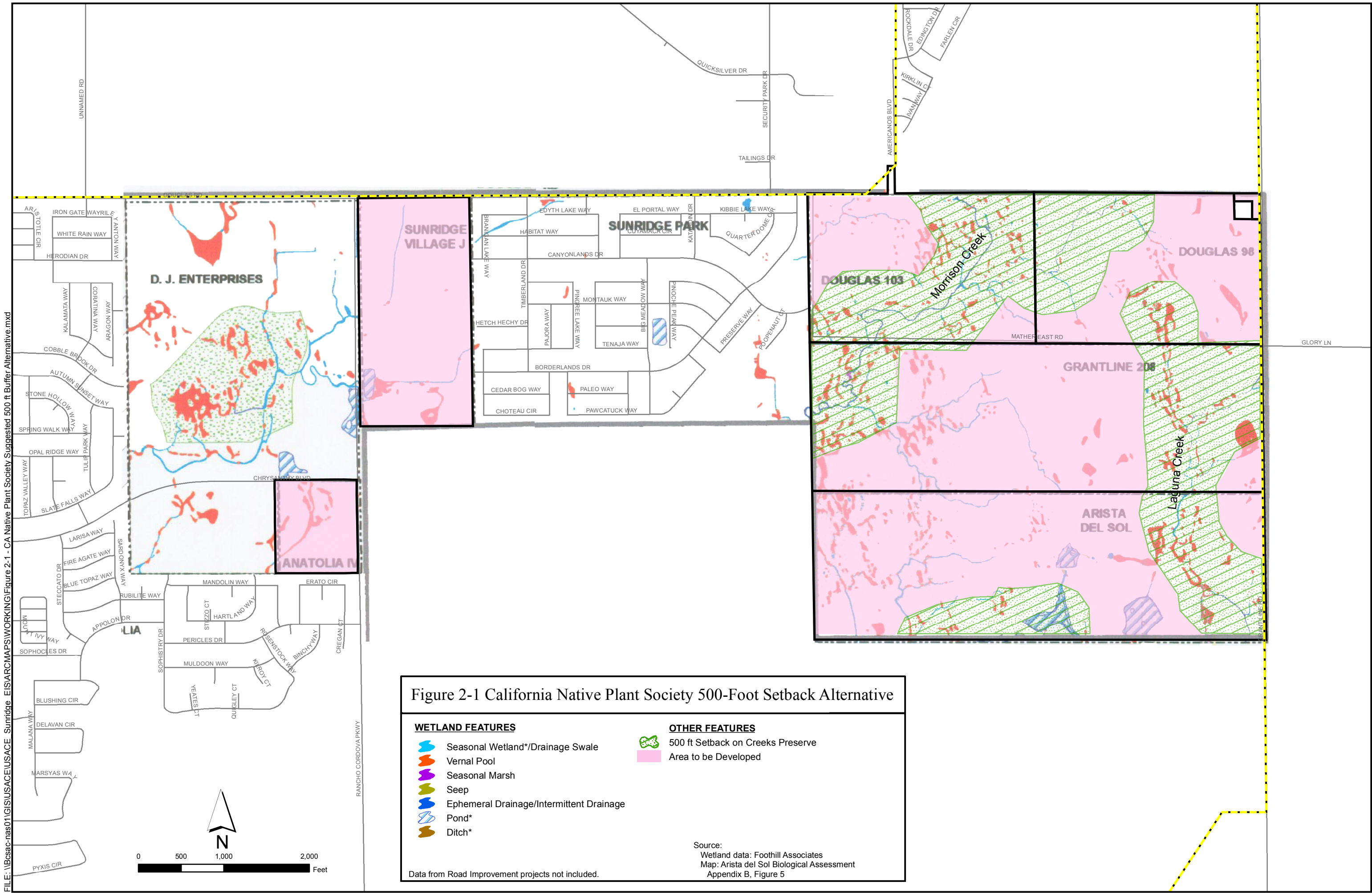
An alternative referred to as the Reduced Footprint Alternative was developed in part to address CNPS concerns. This alternative does not strictly focus on the Laguna and Morrison Creek headwater corridors, but is balanced with greater vernal pool preservation. The Reduced Footprint Alternative, described in Section 2.4.2.3, includes a larger preserve area and incorporates a setback that is hydrologically sensitive to the primary tributaries of Morrison and Laguna Creeks. In particular, the Laguna Creek Preserve under the Reduced Footprint Alternative is very similar to the alternative put forth by CNPS. The Reduced Footprint Alternative also recognizes the very limited value to the watershed provided by the small tributaries and low number of vernal pools on the Douglas 98 site.

Under the CNPS alternative, the acreage of vernal pools and streams impacted would be greater than that filled under the Reduced Footprint Alternative. The CNPS alternative would also result in greater direct impacts to vernal pools than the Proposed Project Alternative.

## **ELIMINATION RATIONALE SUMMARY**

- CNPS concerns incorporated into the Reduced Footprint Alternative which is carried forward in the analysis;
- Entails filling a large number of high quality vernal pools in the western portion of the Grantline 208 and Arista del Sol sites; and
- Greater quantity of filled acreage of aquatic resources than the Reduced Footprint Alternative, and greater impact to vernal pools than the Proposed Project Alternative.

FILE: \\Bcsac-nas01\GIS\USACE\USACE Sunridge EIS\ARC\MAPS\WORKING\Figure 2-1 - CA Native Plant Society Suggested 500 ft Buffer Alternative.mxd



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#### **2.4.1.2 NO DEVELOPMENT AT ARISTA DEL SOL ALTERNATIVE**

This alternative involves development of the five permitted projects but no development of the proposed Arista del Sol project (Figure 2-2). This alternative was initially considered because Arista del Sol is the only project for which a decision on a Department of the Army (DA) permit is still pending.

Although the six Sunridge Properties projects are considered collectively in this EIS, each has independent utility and could be constructed and implemented absent the other projects. This alternative was not carried forward in this EIS because it would not meet the “reasonable” test under NEPA. No development at this site would also fail to meet the development objectives of the applicant for the Arista del Sol project.

This alternative is primarily focused on reducing the overall acreage of vernal pool and stream impacts through the convenience of eliminating the one project for which a DA permit decision has not been made. Not developing Arista del Sol would avoid reducing vernal pool acreage by 13.9 acres. However, it is not sensitive to natural resources in the area since it does not seek to specifically preserve the continuity of vernal pool assemblages, maintain headwater streams or provide corridors for wildlife movement. For instance, under this alternative, a portion of the Laguna Creek headwaters would not be filled; however, upstream headwaters would be filled in.

With no development on the Arista del Sol site, cattle grazing would likely continue and result in on-going grazing-related direct and indirect environmental effects, such as, fecal contamination in the vernal pools, and loss of continuity of wetlands, without any preservation and management of the aquatic resources that would be required as a result of a DA permit. Previously approved developments to the north (Grantline 208, Douglas 98 and Douglas Road 108) and west (Anatolia IV and Sunridge Village J) would likely result in indirect impacts to aquatic resources on the Arista del Sol site through edge effects and hydrologic modification.

Development of the Arista del Sol site under a no permit scenario is included in the No Action Alternative discussed later in this EIS. The no action/no permit alternative will also be considered in the project-specific alternatives analysis prepared during the DA permit review process for the Arista del Sol project site.

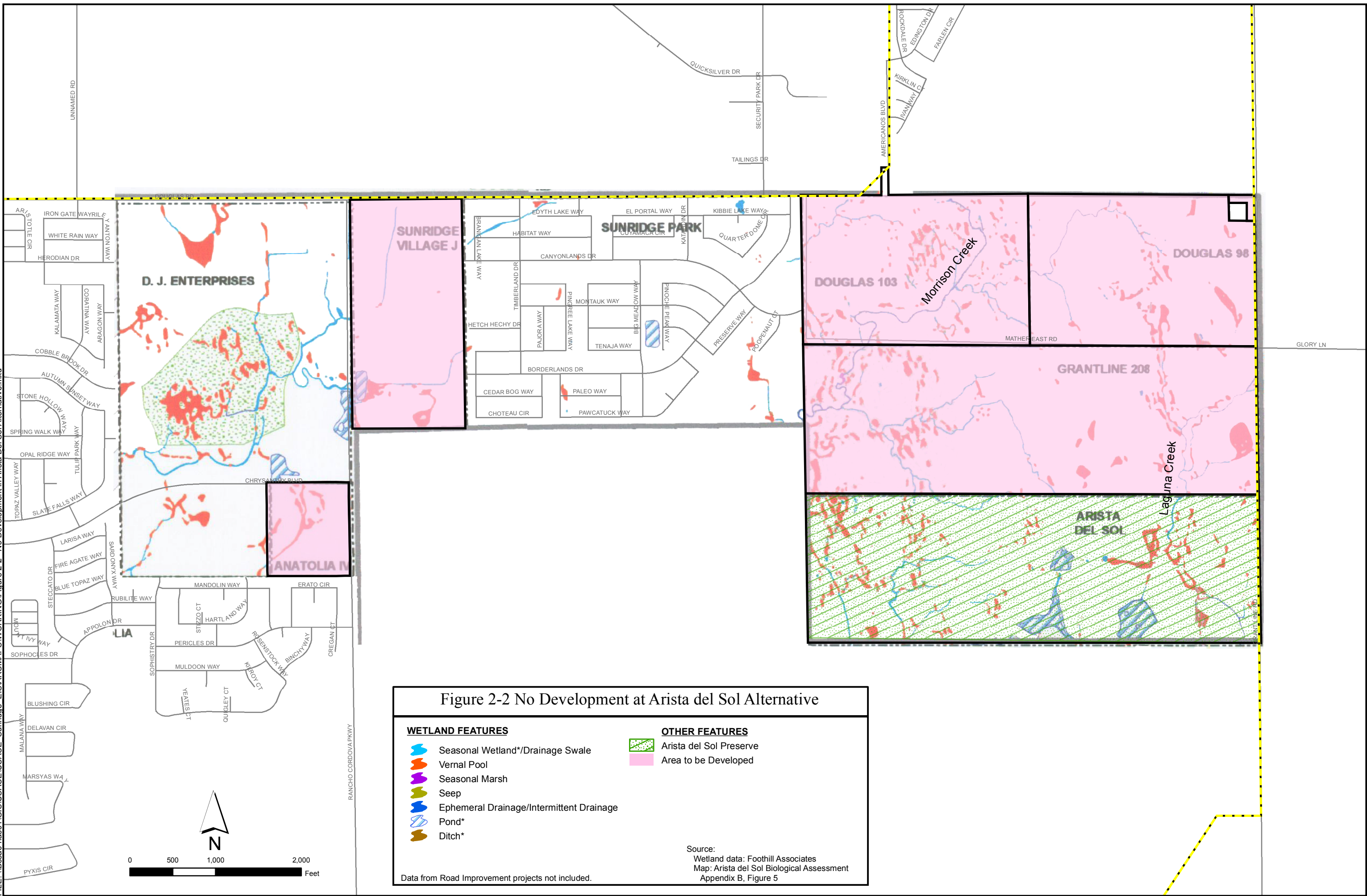
#### **ELIMINATION RATIONALE SUMMARY**

- The applicant’s objectives for the Arista del Sol project would not be met;
- The No Action Alternative largely captures this analysis.
- Without preservation and management of the site, indirect effects on vernal pools, streams and other waters of the U.S. from continued cattle grazing at the site and adjacent land development could be substantial.



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FILE: \\Bcsac-nas01\GIS\USACE\USACE Sunridge EIS\ARC\MAPS\WORKING\Figure 2-2 - No Development in Arista Del Sol Alternative.mxd



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### **2.4.1.3 NO DEVELOPMENT IN “THE EASTERN STRIP” ALTERNATIVE**

Expanding upon the preserve areas under the Proposed Project Alternative, this alternative adds a rectangular preserve area along the eastern side of the Douglas 98, Grantline 208, and Arista del Sol sites, and immediately adjacent to Grant Line Road (Figure 2-3). This additional preservation area was considered given the quantity and density of vernal pools and the Laguna Creek headwaters found here (approximately 15 acres). Development in the remaining portions of the six parcels outside the preserve areas would still occur.

Because of the location and rectangular nature of the eastern strip preserve area, this alternative inadequately accounts for logistical and development feasibility factors. For instance, and most importantly, the eastern strip would negate any access to the three development sites from Grant Line Road, including access needed for emergency services. Furthermore, the alternative is not sensitive to the landscape or hydrology in the area. Development would essentially cut through some of the largest vernal pools along upper Laguna Creek, causing indirect effects to what remains. In addition, aquatic resources that form the headwaters of Morrison Creek on the Douglas 98 site would be preserved but would become isolated with no hydrologic connection to downstream reaches.

In contrast, the Reduced Footprint Alternative, which is being carried forward in the EIS, is intended to address the intent of the Eastern Strip alternative to protect important aquatic resources along Grant Line Road with the removal of logistical constraints to site development. The Reduced Footprint Alternative is sensitive to the landscape and the location of vernal pools and streams while allowing site access from Grant Line Road. The Eastern Strip Alternative is also less protective of wetlands and headwaters than the Reduced Footprint Alternative because the Reduced Footprint Alternative expands the Proposed Project Alternative preserve area to the south to protect additional headwaters of Laguna Creek. In contrast, the Eastern Strip Alternative would directly impact approximately 1,000 more additional linear feet of streams than the Reduced Footprint Alternative. Consequently, the Eastern Strip Alternative was not carried forward because of logistical considerations because it is less protective of the aquatic environment than the Reduced Footprint Alternative.

### **ELIMINATION RATIONALE SUMMARY**

- Rectilinear nature of proposed Eastern Strip preserve does not adequately consider site topography and other logistical considerations;
- Rectilinear nature of proposed Eastern Strip preserve is not sensitive to the landscape and hydrology of the area;
- More direct impacts to key streams than Reduced Footprint Alternative;
- Reduced preservation of Laguna Creek headwaters compared to Reduced Footprint Alternative; and
- Many of the concerns that drove the development of this alternative are addressed by the Reduced Footprint Alternative, which is carried forward in the EIS.

### **2.4.1.4 OFF-SITE ALTERNATIVES**

As required by 40 CFR Part 230.10(a)(3), practicable alternatives that do not involve special aquatic sites are presumed to be available to the applicant unless clearly demonstrated otherwise. Practicable

alternatives that would occur at an area not presently owned by the applicant, which could be reasonably obtained, utilized, expanded or managed to fulfill the basic project purpose, may be considered.

In consideration of the overall project purpose, the analysis of off-site alternatives was limited to those parcels within southeastern Sacramento County that could practicably accommodate a large residential development. For the purpose of this analysis, the boundaries of southeastern Sacramento County were considered to be Highway 50 to the north, the Sacramento County boundary to the east and south, and Highway 99 to the west. With the footprint of the Proposed Project Alternative at 588.5 acres, potentially available parcels of approximately 450 to 750 acres were considered as they would accommodate a similar level of development. To be considered potentially available, parcels needed to be within Sacramento County's Urban Services Boundary (USB) and Urban Policy Area (UPA), and not currently proposed for development by others, under construction, substantially built-out, or restricted by conservation easements or similar legal instruments.

USACE evaluated the off-site alternatives presented in the Sares Regis Group Report (1994) for the Sunrise-Douglas project, which was submitted to USACE for five of the Sunridge Properties proponents as information regarding regional off-site alternatives. Most of the parcels evaluated in the Sares Regis Group Report were determined to be unavailable. Others were outside of the USB or southeastern Sacramento County. In fact, only alternative 33 of the report, the Kendall property, is within the USB and UPA; has not been developed, proposed for development, or set aside as a nature preserve; and is within the size and geographic range established above.

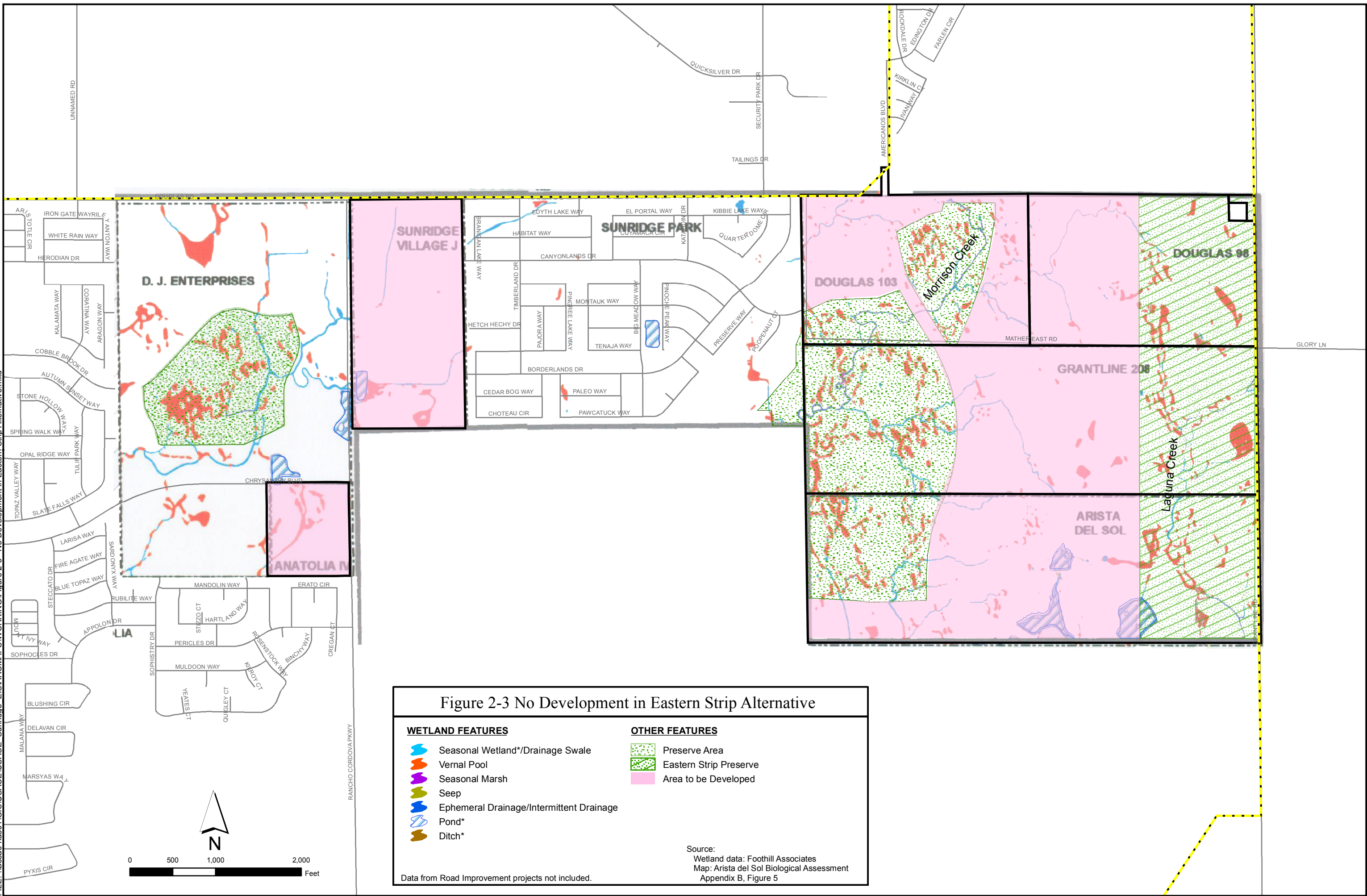
The approximately 667-acre Kendall property is located east of Grantline Road at the terminus of Douglas Road (see Figure 2-4). Based on remote sensing, approximately 36 acres of vernal pools and 4 acres of intermittent or ephemeral streams exist on the parcel. Therefore, full build-out of the parcel would result in greater direct impacts to vernal pools and other aquatic habitats than would the Proposed Project Alternative, which would result in the loss of 19.19 acres of vernal pools and 10.61 acres of other waters. A partial avoidance development, which includes a 179-acre preserve around the main stream and vernal pool complex, was also considered for the Kendall site. The resulting 488-acre development area would directly impact approximately 21 acres of vernal pools and 0.5 acres of intermittent or ephemeral streams. Direct effects of the partial avoidance development for the Kendall site would be less than the Proposed Project Alternative and similar to the estimated 20.3 acres of impact expected to result from the Reduced Footprint Alternative. USACE inquired into the availability of this property for development and was informed from several sources that the owner has been approached in the past by interests seeking to purchase his land for development or mitigation purposes and is unwilling to sell. Therefore, this alternative was eliminated from further consideration as it is currently unavailable.

Although not considered in the Sares Regis Group Report, the approximately 467-acre Tracy property initially appeared available and is within the size and geographic range of this analysis. The Tracy property is connected to the Kendall property to the south and an aggregate mining operation to the north (see Figure 2-4). Based on aerial photograph interpretation, approximately 30 acres of vernal pool habitat exist on the site. Full development of this parcel would be necessary to support a development consistent with the overall project purpose. Furthermore, USACE was informed the owner of this site is an unwilling seller. This alternative was eliminated from further consideration as it would result in a higher acreage of impact to vernal pool habitats than the Proposed Project Alternative and it is unavailable.

As such, off-site alternatives were eliminated from further consideration in this EIS, as they were determined to be unavailable or would result in an equal or greater amount of impacts to the aquatic system than the Proposed Project Alternative.

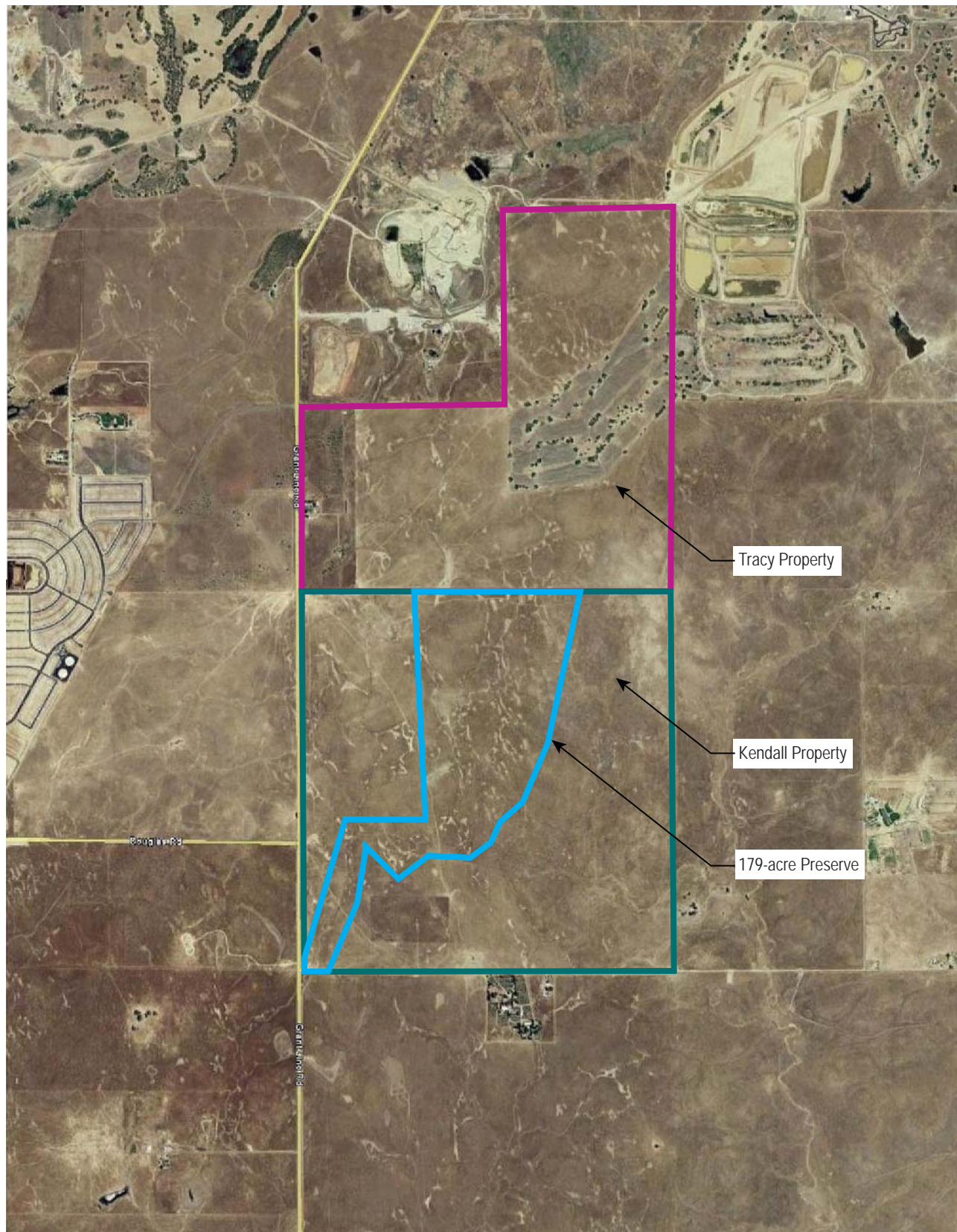


FILE: \\Bcsac-nas01\GIS\USACE\USACE Sunridge EIS\ARCMAPS\WORKING\Figure 2-3 - No Development in Eastern Strip Alternative.mxd



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Source: Google Earth, 2007

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Scale in Feet



Figure 2-4. Off-Site Alternative Properties



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For the five projects which received DA permits, project-level off-site alternatives were evaluated by the USACE before the DA permits were issued. For the Anatolia IV, Douglas Road 98, Douglas Road 103, and Grantline 208 projects, off-site alternatives, including a number within the Sunridge Specific Plan Area, were analyzed. After considering eight potential alternative sites, USACE determined that there were no practicable alternative locations for these projects because the considered properties were either unavailable for purchase, of insufficient size to meet the applicants' needs and/or would have equal or greater amounts of impact to aquatic ecosystems compared to the proposed project sites. For the Sunridge Village J project, fifteen alternative sites were analyzed during the DA permit process. USACE found that all were not practicable or would result in an equal or greater amount of impact to the aquatic environment than the proposed development. Because a permit decision is pending, a project-level alternatives analysis under NEPA and the USEPA Guidelines still needs to be completed for the Arista del Sol project. The analysis will include an evaluation of off-site alternatives.

## **2.4.2 ALTERNATIVES CONSIDERED AND CARRIED FORWARD**

This section describes alternatives that were considered during preparation of this EIS and were carried forward in the analysis. Acreage estimates referenced in the tables within this section were obtained from several sources and methods. Total project size, on-site preserve area, and developed area acreages were estimated using Geographical Information System (GIS) files, and the acreages of individual project features (parks, roads, etc.) were obtained from decision documents for the five previously permitted projects and the Arista del Sol application for a DA permit. These estimated acreage totals may not always coincide. However, any discrepancies between total acreages are typically small and do not substantively alter the analysis presented in this EIS.

### **2.4.2.1 NO ACTION ALTERNATIVE**

The No Action Alternative would avoid all direct impacts to waters of the U.S., including wetlands, on the six properties (Figure 2-5). Under this alternative, the existing DA permits would be revoked and the permit application for the Arista del Sol project would be denied. Although DA permitting requirements are only triggered by placement of dredged or fill material into waters of the U.S., it was assumed for evaluation purposes that no development activities would occur within a 25-foot setback around waters of the U.S., including wetlands, under the No Action Alternative. (The USFWS generally assumes development with 25 feet of wetlands would result in direct impacts; a 25-foot setback provides a factor of safety.) Areas outside of waters of the U.S., referred to as "uplands," beyond the 25-foot setback would be developed by the project proponents. Since land development activities that occur outside waters of the U.S. are not regulated under Section 404 of the CWA, the USACE has no authority over development activities occurring entirely in the uplands. Therefore, the No Action Alternative analyzed in this EIS is a no permit alternative and is not a "No Project Alternative."

Because the existing DA permits would be revoked under this alternative for the five previously permitted projects and no permit would be issued for the Arista del Sol project, the Endangered Species Act (ESA) compliance and incidental take provisions provided in the existing Biological Opinions (BO) issued during the Section 7 ESA consultation process would no longer be valid. Additionally, addressing potential impacts to ESA-listed species under Section 7 would not be possible for the Arista del Sol project since there would be no federal nexus (i.e., no DA permit). Given the 25-foot setback assumed for the No Action Alternative, and the likelihood for incidental take of ESA-listed species from construction activities within 250 feet of vernal pools, each of the project proponents would presumably need to prepare a project-level Habitat Conservation Plan (HCP) under Section 10 of the ESA and obtain Incidental Take Permits directly from the USFWS for each of the six projects, including Arista del Sol. Alternatively, the projects may be able to achieve compliance with ESA through the South Sacramento

HCP (SSHCP), a regional HCP which includes this area, once the SSHCP has been approved by the USFWS. At this time, it is uncertain when the SSHCP will be completed.

For each of the five projects permitted by USACE, a site-specific No Action Alternative was analyzed in the initial EAs. The No Action Alternative included a 250-foot setback around vernal pools and, in each of the five EAs, was determined to result in insufficient available land to economically construct a residential development. However, USFWS uses the 250 foot zone around vernal pools only to assess indirect impacts to listed species, not to prohibit development. Under the No Action Alternative, it is unlikely the USFWS would impose a 250-foot setback from all vernal pools in a project-level HCP and Incidental Take Statement. The BOs issued for five of the six projects allowed the filling of multiple acres of vernal pools. Therefore, the analysis in this EIS relies on a 25-foot setback rather than the 250-foot setback to provide meaningful comparison between a reasonable No Action Alternative scenario and the other action alternatives.

Based on wetland delineations conducted for the Sunridge Properties project sites and a 25-foot setback, the potential area for development is reduced when compared to the Proposed Project Alternative for all six sites. Compared to the Proposed Project Alternative, the development area would be reduced by 19% for Anatolia IV, 8% for Sunridge Village J, 45% for Grantline 208, 18% for Douglas Road 98, 60% for Douglas Road 103 and 50% for Arista del Sol. Under the No Action Alternative, approximately 2,060 homes over 303 acres are estimated to be developed. This alternative assumes that access roads for Grant Line Road can be bridged over waters of the U.S.

Table 2-1 provides development and wetland acreage information for the No Action Alternative.

#### **2.4.2.2 PROPOSED PROJECT ALTERNATIVE**

The Proposed Project Alternative would consist of developing 589 acres of the six project sites (Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98, Douglas Road 103, and Arista del Sol) as residential space, neighborhood parks, road improvements, drainage basins, and commercial space. Approximately 3,258 homes would be constructed. The Proposed Project Alternative would fill about 30 acres of waters of the U.S. and create 477 acres of residential development, 45 acres of neighborhood parks, 28.5 acres of road improvements, 19.2 acres of drainage basin, 21.2 acres of commercial space, and 153.6 acres of onsite wetland preserve. The Proposed Project Alternative would also include creation of 15.9 acres of vernal pool habitat off-site as compensatory mitigation, and 25.6 acres of vernal pool habitat preserved off-site as mitigation. The boundaries of the wetland preserve are similar to those of the Conceptual Strategy. The Proposed Project Alternative is shown in Figure 2-6 and information about the alternative is in Table 2-2. Table 2-3 indicates the wetlands impacts associated with the Proposed Project Alternative, identified by type of wetlands. The projects are described below.

Table 2-1 No Action Alternative Detail												
Property Name	Total Project Size (acres) <sup>1</sup>	Waters of the U.S. Impacted (acres) <sup>2</sup>	Preserve Area (acres) <sup>1</sup>	Developed Area (acres) <sup>1</sup>	Neighborhood Park (acres) <sup>2</sup>	Road Improvements (acres) <sup>2</sup>	Single Family Homes (acres) <sup>2</sup>	Single Family Homes (count) <sup>2</sup>	Drainage Basin (acres) <sup>2</sup>	Commercial Space <sup>2</sup>	Compensatory Mitigation Off-site Vernal Pool Habitat Created	Preservation Mitigation Off-site Vernal Pool Habitat Purchased for Preserve
Anatolia IV	23.9	0.0	0.0	19.4	2.1	1.7	15.6	109	0.0	0.0	0.0	0.0
Sunridge Village J	81.3	0.0	0.0	74.8	7.9	4.0	62.8	339	0.0	0.0	0.0	0.0
Grantline 208	210.7	0.0	0.0	78.4	combined	2.6	71.8	470	4.0	0.0	0.0	0.0
Douglas Road 98	104.9	0.0	0.0	86.0	11.8	4.1	70.1	568	3.2	0.0	0.0	0.0
Douglas Road 103	106.4	0.0	0.0	25.0	combined	2.9	16.0	120	0.0	6.2	0.0	0.0
Arista del Sol	214.9	0.0	0.0	86.7	9.7	2.5	66.8	453	4.1	2.8	0.0	0.0
Total	742.0	0.0	0.0	370.3	31.5	17.8	303.0	2060	11.2	9.0	0.0	0.0
Notes: 1. Acreage determined from Geographic Information Systems analysis 2. Acreage calculated from property Environmental Assessment												

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Table 2-2 Proposed Project Alternative Detail												
Property Name	Total Project Size (acres) <sup>1</sup>	Waters of the U.S. Impacted (acres) <sup>2</sup>	Preserve Area (acres) <sup>1</sup>	Developed Area (acres) <sup>1</sup>	Neighborhood Park (acres) <sup>2</sup>	Road Improvements (acres) <sup>2</sup>	Single Family Homes (acres) <sup>2</sup>	Single Family Homes (count) <sup>2</sup>	Drainage Basin (acres) <sup>2</sup>	Commercial Space <sup>2</sup>	Compensatory Mitigation Off-site Vernal Pool Habitat Created <sup>3</sup>	Preservation Mitigation Off-site Vernal Pool Habitat Purchased for Preserve <sup>3</sup>
Anatolia IV	23.9	1.4	0.0	23.9	2.6	2.1	19.2	134	0.0	0.0	1.4	2.7
Sunridge Village J	81.3	3.0	0.0	81.3	8.6	4.3	68.2	369	0.0	0.0	3.4	9.2
Grantline 208	210.7	5.7	68.1	142.6	combined	4.8	130.6 (park/school/ residences combined)	855	7.2	0.0	6.2	6.9
Douglas Road 98	104.9	3.9	0.0	104.9	14.4	5.0	85.5	693	3.9	0.0	3.9	7.8
Douglas Road 103	106.4	2.0	44.0	62.4	combined	7.3	40 (park/residences combined)	301	0.0	15.6	7.3	5.9
Arista del Sol	214.9	13.9	41.5	173.4	19.4	5.0	133.5	906	8.1	5.6	12.0	20.2
Total	742.0	29.9	153.6	588.5	45.0	28.5	477.0	3,258	19.2	21.2	34.2	52.7
Notes: 1. Acreage determined from Geographic Information Systems analysis 2. Acreage reported from property Environmental Assessment, except for Arista del Sol acreages reported from the DA permit application materials 3. Acreage reported from property's issued 404 permit, except for Arista del Sol acreages obtained from the Biological Opinion												

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**Table 2-3**  
**Wetlands and Waters of the U.S. Impacts of the Proposed Project Alternative**

Property Name	Total Waters of the U.S. Impacted (acres)	Habitat Vernal Pool (acres)	Depressional Seasonal Wetland (acres)	Riverine Seasonal Wetland (acres)	Seep (acres)	Ephemeral Drainage (acres)	Pond (acres)	Ditch (acres)	Seasonal Wetland (acres)	Intermittent Drainage (acres)
Anatolia IV	1.36	1.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sunridge Village J	2.99	1.88	0.00	0.22	0.00	0.00	0.89	0.00	0.00	0.00
Grantline 208	5.70	5.22	0.04	0.36	0.00	0.08	0.00	0.00	0.00	0.00
Douglas Road 98	3.91	3.70	0.00	0.00	0.00	0.08	0.00	0.00	0.13	0.00
Douglas Road 103	1.98	NA <sup>1</sup>	NA <sup>1</sup>	NA <sup>1</sup>	NA <sup>1</sup>	NA <sup>1</sup>	NA <sup>1</sup>	NA <sup>1</sup>	NA <sup>1</sup>	NA <sup>1</sup>
Arista del Sol	13.88	5.37	0.08	0.67	0.03	0.17	7.56	0.01	0.00	0.00
<b>Total</b>	<b>29.8</b>	<b>17.53</b>	<b>0.12</b>	<b>1.25</b>	<b>0.03</b>	<b>0.33</b>	<b>8.45</b>	<b>0.01</b>	<b>0.13</b>	<b>0.00</b>

Notes:

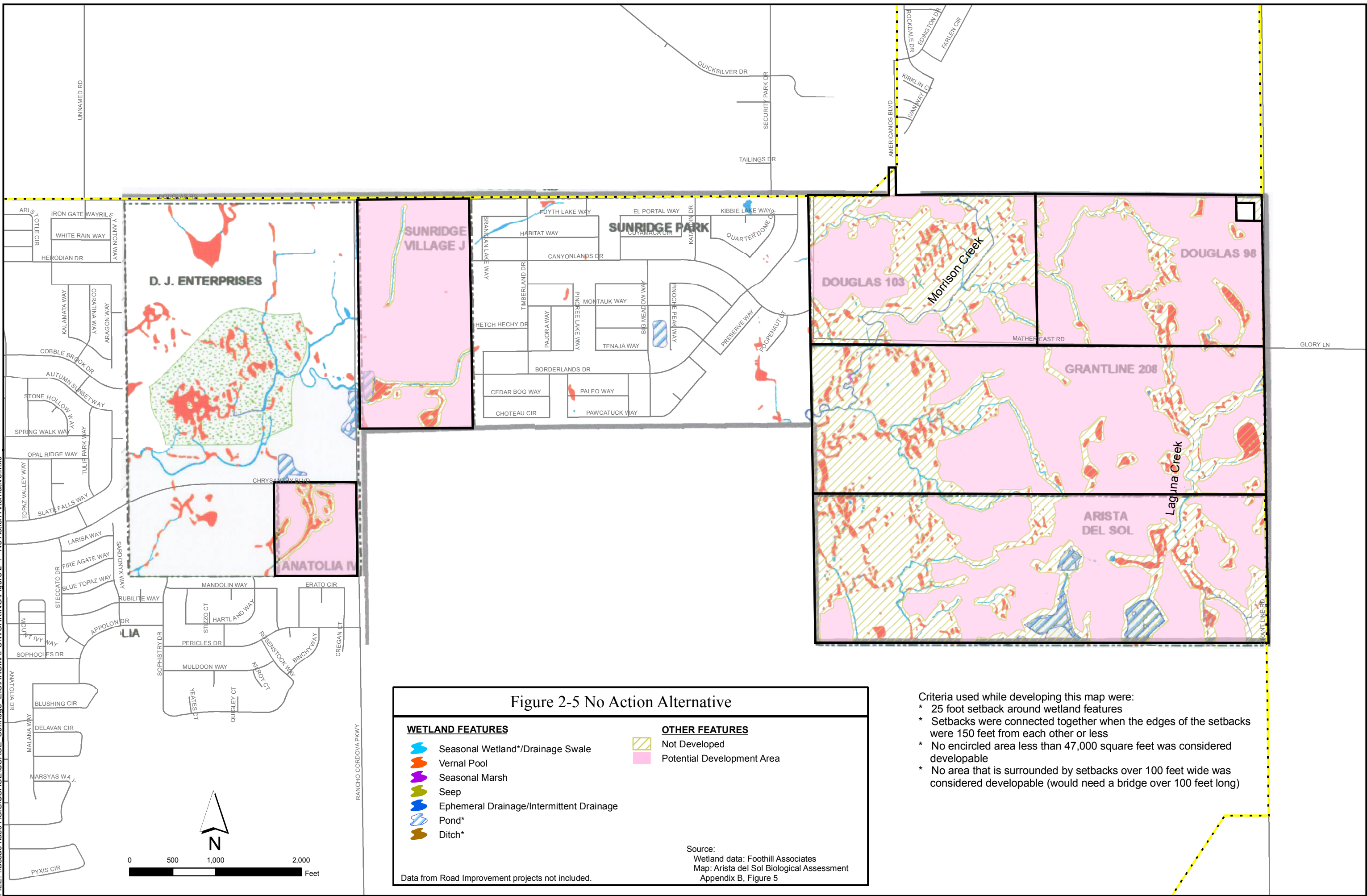
NA = Not Available

Source: DA Permits for Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98, and Douglas Road 103, and the permit application for Arista del Sol.

1. The breakdown of waters of the U.S. into type was not provided in the DA Permit for Douglas Road 103.

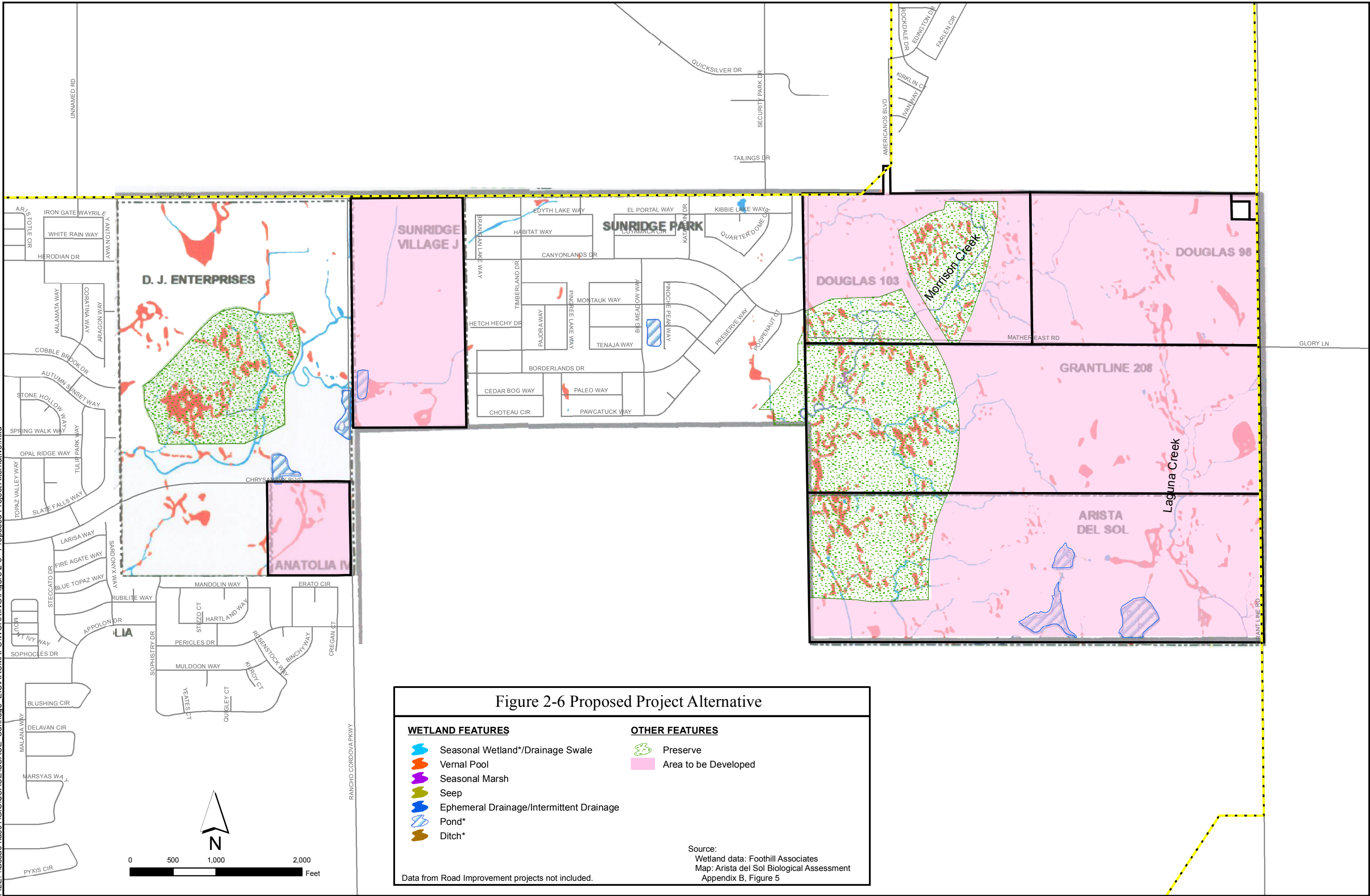


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FILE: \\Bcsac-nas01\GIS\USACE\USACE Sunridge EIS\ARC\MAPS\WORKING\Figure 2-5 - Proposed Project Alternative.mxd



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## **ANATOLIA IV**

The Anatolia IV project would consist of filling 1.4 acres of waters of the U.S., all vernal pool, to construct 134 single-family homes (19.2 acres), a neighborhood park (2.6 acres), and road improvements (2.1 acres) on an approximately 24-acre parcel. The site is generally comprised of level to gently rolling terrain, consisting mostly of non-native grasslands. Vernal pools lie within the grasslands. The majority of the site has been used historically as grazing land; however, more recently, the southern and eastern portions of the site have been used for construction staging and earth stockpiling. There is also a single residence located along the southern boundary of the property. Prior to the suspension of the DA permit, some of the site's vernal pools were disturbed in anticipation of development. Some vernal pools may have reformed in the center of the site, per March 24, 2010, site visit observation. Compensatory mitigation for impacts to waters of the U.S., which consisted of restoration and/or creation of 1.4 acres of vernal pools and swale habitat, and preservation of 2.7 acres of vernal pool habitat, has been completed for this project.

## **SUNRIDGE VILLAGE J**

The Sunridge Village J project would consist of filling 3.0 acres of waters of the U.S., including wetlands (1.88 acres of vernal pool), to construct 369 single-family homes (68.2 acres), 3 neighborhood parks (8.6 acres), and road construction/improvements (4.3 acres) on an 81.3-acre parcel. The site is comprised of gently rolling terrain, consisting mostly of non-native grasslands. Vernal pools, swales, and a pond lie within the grasslands. Historically, the majority of the site has been rural residential with horse boarding facilities (watering areas, barns, and stables). There are no structures situated on the site except a few ancillary farming stationary equipment (i.e., a water heater, water well pump, four concrete stacks, and an electric motor). Prior to the suspension of the DA permit, some of the site's vernal pools were disturbed in anticipation of development. Compensatory mitigation for impacts to waters of the U.S., which consisted of restoration and/or creation of 3.4 acres of vernal pools and preservation of 9.2 acres of wetlands, has been completed for this project.

## **GRANTLINE 208**

The Grantline 208 project site encompasses 210.7 acres. The planned uses would include construction of approximately 130.6 acres of residential, park, parkway, school, and detention basin. Additionally, the project would include major road improvements, including construction of Americanos Boulevard and the expansion of Grant Line Road (approximately 4.8 acres), and the construction of a drainage basin along Grant Line Road (approximately 7.2 acres). The project would also include the establishment of an on-site wetland preserve of approximately 68.1 acres. The site is comprised of gently rolling terrain, consisting mostly of non-native grasslands. Vernal pools lie within the grasslands. The majority of the site has been used historically as grazing land. Compensatory mitigation required by the DA permit but yet to be completed for this project includes restoring and/or creating 6.2 acres of vernal pools and preserving 6.9 acres of vernal pool branchiopod habitat.

## **DOUGLAS 98**

The Douglas 98 project would consist of filling 3.9 acres of waters of the U.S., including wetlands (3.7 acres of vernal pools), to construct 693 single-family homes (85.5 acres), three neighborhood park sites (14.4 acres), and road improvements to Douglas and Grant Line Roads (approximately 5 acres). The site is comprised of level to gently rolling terrain, consisting mostly of non-native grasslands. Vernal pools lie within the grasslands. The majority of the site has been used historically as grazing land. There are no structures situated on the site. Compensatory mitigation required by the DA permit but yet to be



completed for this project includes constructing or restoring 3.9 acres of vernal pools and preserving 7.8 acres of vernal pool habitat.

### **DOUGLAS 103**

The Douglas 103 project site encompasses 106.4 acres. The planned uses would include construction of approximately 40 acres of residential, park, and parkway development, 15.6 acres of commercial space, 7.3 acres of major roads, and a 44.0-acre wetland and habitat preserve. The site is comprised of level to gently rolling terrain, consisting mostly of non-native grasslands, and is located within the headwaters of the Morrison Creek watershed. Vernal pools lie within the grasslands. The majority of the site has been used historically as grazing land. There are no structures situated on the site except overhead power lines of the Sacramento Municipal Utility District (SMUD). Compensatory mitigation required by the DA permit but yet to be completed for this project includes restoring and/or creating 7.3 acres of vernal pools and preserving 5.9 acres of existing vernal pool habitat.

### **ARISTA DEL SOL**

The Arista del Sol project site would encompass 214.9 acres. The planned uses would include construction of approximately 133.5 acres of residential development, 19.4 acres of neighborhood parks, 5.6 acres of commercial mixed use development, 8.1 acres of drainage corridor and detention/water quality basin, and 41.5 acres of open space/wetland preserve. The site is comprised of gently rolling terrain, consisting mostly of non-native grasslands. According to the BO issued for the project, approximately 2.3 acres of vernal pool crustacean habitat would be preserved on-site, 20.2 acres would be preserved off-site, and 11.96 acres would be restored or created off-site.

### **2.4.2.3 REDUCED FOOTPRINT ALTERNATIVE**

In consideration of CNPS's concerns about Laguna and Morrison Creeks and the issues identified during evaluation of the Eastern Strip Alternative, the Reduced Footprint Alternative was developed (Figure 2-7). This alternative seeks to protect the headwaters of Laguna and Morrison Creeks, taking into account topography, hydrologic barriers, and existing vernal pools.

The Reduced Footprint Alternative would consist of developing about 456 acres as residential space, neighborhood parks, road improvements, drainage basins and commercial space. This is an approximately 133-acre reduction in development from the Proposed Project Alternative. The wetland preserve acreage and location is consistent with the Conceptual Strategy, but acreage is added to the preserve in the vicinity of Laguna Creek. Additional preserve area is added at the southern end of the preserve identified in the Conceptual Strategy to protect additional headwaters of Laguna Creek and its nearby vernal pool areas.

Acreage developed and filled has been estimated using the Proposed Project Alternative as a baseline. The percent of the total project area that would be developed under the Reduced Footprint Alternative for the Anatolia IV, Sunridge Village J and Douglas Road 103 sites is the same as under the Proposed Project Alternative. The Reduced Footprint Alternative would contain 35% less development at the Grantline 208 site, 11% less development at the Douglas Road 98 site, and 41% less development at the Arista del Sol site. The reduced area available for development consequently reduces the number of acres developed for parks, roads, homes, drainage basins, and commercial space.

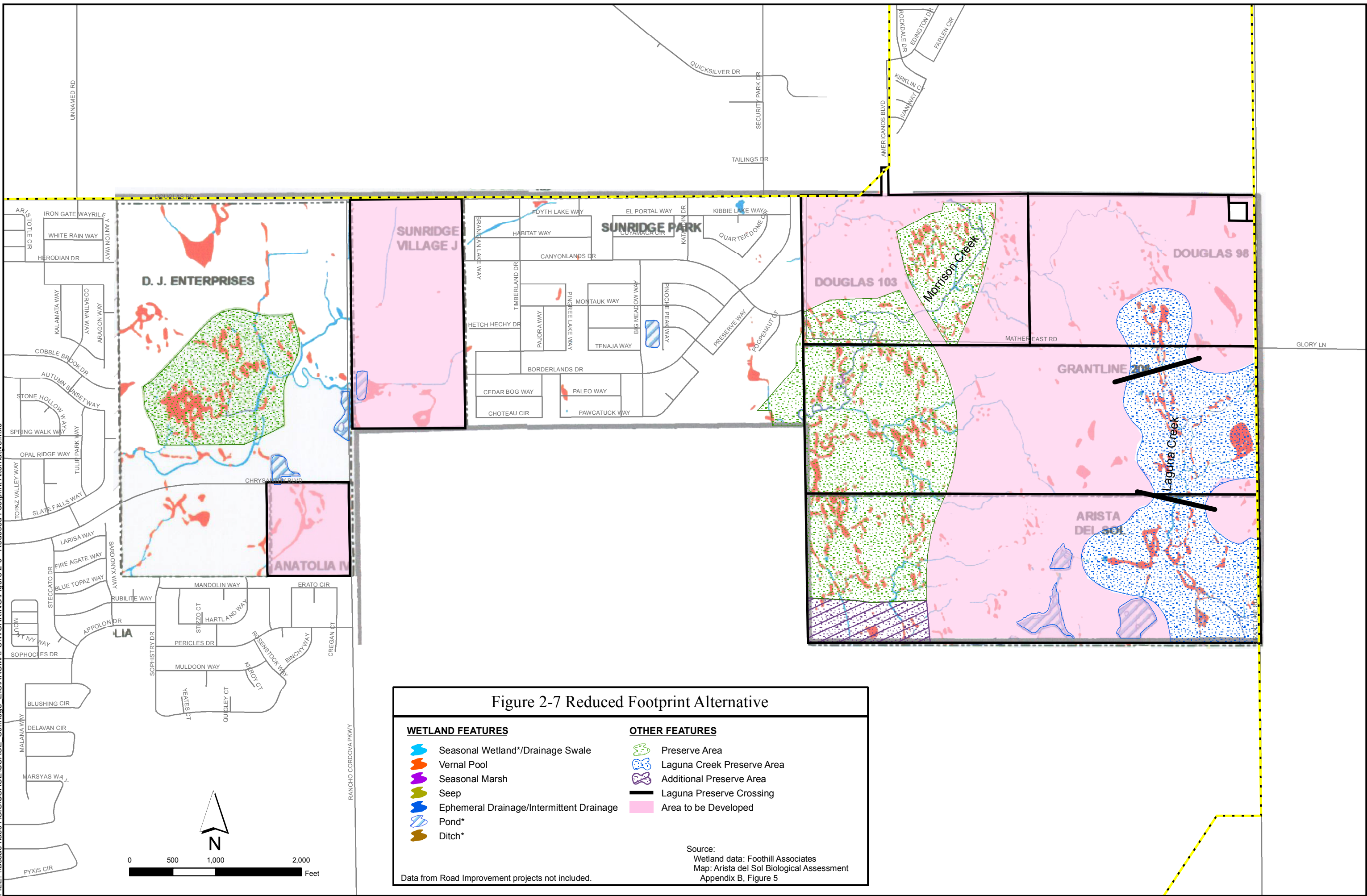
The alternative would result in the filling of approximately 20.3 acres of waters of the U.S., and create 367 acres of residential development, 35.5 acres of neighborhood parks, 24.2 acres of road improvements, 12.9 acres of drainage basin, 18.9 acres of commercial space, and 286.2 acres of wetland preserve. This alternative includes 20.4 acres of vernal pool habitat created off-site as compensatory mitigation, and 40.8

acres vernal pool habitat preserved off-site as preservation mitigation. Table 2-4 indicates the acreage of each type of development associated with this alternative.



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<div>Table 2-4</div> <div>Reduced Footprint Alternative Detail</div>												
Property Names	Total Project Size (acres) <sup>1</sup>	Waters of the U.S. Impacted (acres) <sup>1</sup>	Preserve Area (acres) <sup>1</sup>	Developed Area (acres) <sup>1</sup>	Neighborhood Park (acres) <sup>2</sup>	Road Improvements (acres) <sup>2</sup>	Single Family Homes (acres) <sup>2</sup>	Single Family Homes (count) <sup>2</sup>	Drainage Basin (acres) <sup>2</sup>	Commercial Space <sup>2</sup>	Compensatory Mitigation Off-site Vernal Pool Habitat Created	Preservation Mitigation Off-site Vernal Pool Habitat Purchased for Preserve
Anatolia IV	23.9	1.4	0.0	23.9	2.6	2.1	19.2	134	0.0	0.0	1.4	2.8
Sunridge Village J	81.3	3.0	0.0	81.3	8.6	4.3	68.2	369	0.0	0.0	3.0	6.0
Grantline 208	210.7	1.9	117.9	92.8	combined	3.1	84.9 (park/school/ residences combined)	556	4.7	0.0	1.9	3.8
Douglas Road 98	104.9	2.9	11.2	93.7	12.9	4.5	76.4	619	3.5	0.0	2.9	5.8
Douglas Road 103	106.4	2.0	44.0	62.4	combined	7.3	40 (park/ residences combined)	301	0.0	15.6	2.0	4.0
Arista del Sol	214.9	9.2	113.1	101.8	11.4	2.9	78.4	532	4.8	3.3	9.2	18.4
Total	742.0	20.3	286.2	455.8	35.5	24.2	367.1	2,511	12.9	18.9	20.4	40.8
Notes: 1. Acreage determined from Geographic Information Systems analysis 2. Acreage reported from property Environmental Assessment, except for Arista del Sol acreages reported from the DA permit application materials												

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### **3 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION**

This section describes the environment of the areas to be affected by the alternatives under consideration, and the environmental consequences and mitigation for the resources evaluated in detail in this environmental impact statement (EIS). Many of the features described under the alternatives are at a preliminary level of design and detailed information is not available. As a result, this environmental consequences analysis is presented at a programmatic level; additional environmental review may be required prior to construction of any alternative. For each resource area, the affected environment is defined, the regulatory framework is presented, environmental consequences are analyzed, and as necessary, mitigation is presented.

Prior environmental documentation was prepared for the six Sunridge Properties in 2001 and 2005, including the *Sunrise-Douglas Community Plan/Sunridge Specific Plan Final Environmental Impact Report* prepared pursuant to the California Environmental Quality Act (County of Sacramento, 2001), and Environmental Assessments (EAs) that USACE prepared for five of the six projects. Because these documents were issued relatively recently, this section uses these documents as sources of information. Any information used from these reports, or others, has been determined to be relevant and appropriate for this EIS. Reports that are incorporated by reference into this EIS are identified as such, and are briefly summarized. Changes that have occurred since these earlier documents were prepared are identified as the information is incorporated into each resource area.

#### **3.1 RESOURCE AREAS NOT EVALUATED IN DETAIL**

There are no Indian Trust Assets within the project area. Therefore, Indian Trust Assets are not addressed in this EIS.

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## 3.2 BIOLOGICAL RESOURCES

This section describes the affected environment, regulatory framework, and environmental consequences and mitigation measures with respect to biological resources, including vegetation, wildlife, special-status species, and sensitive habitats including wetlands and vernal pools.

### 3.2.1 AREA OF ANALYSIS

The area of analysis for biological resources includes the project site, which is located within the 2,632-acre Sunridge Specific Plan Area, as well as adjacent vernal pool and upland areas (Figure 1-1). This section discusses biological resources at the project site based on information gathered from the Biological Assessments, Biological Opinions, Environmental Assessments (EAs) and other sources for each project site.

### 3.2.2 AFFECTED ENVIRONMENT

#### 3.2.2.1 VEGETATION

The project site is comprised primarily of non-native grassland and wetland complexes, including old-terrace type vernal pools. Non-native grasslands are common in valley and foothill regions throughout the majority of California and typically at elevations below 4,000 feet. The vegetation species in this community are mostly annual grasses that are often non-native, and native herbaceous species. Dormant seeds from the previous season emerge during late fall rains, leading to flowering and seed-set from winter through spring. The plants are typically dead during the dry summer through fall seasons. These plants require fine-textured clay soils, in upland areas that become wet during the winter, but remain very dry during the summer and fall seasons.

Old-terrace type vernal pools include vegetation that is native and dominated by annual herbs and grasses. Dormant seeds left from previous seasons begin to sprout in winter rains. As increased spring temperatures increase evaporation from pools, concentric rings of varying vegetation remain. Soils specific to this habitat prevent water from rapidly permeating through the water table such that water primarily escapes the pool through evaporation, allowing specialized plants to survive in the rings of tiered levels of available water. The topography also required for this community is undulating with small mounds, as occur on aggregations most commonly found on old alluvial fans ringing the Central Valley.

#### ANATOLIA IV

The Anatolia IV project site is approximately 24 acres, including 1.36 acres of vernal pools (Foothill Associates, 2004d). Three vegetation communities had been characterized at the project site: non-native annual grassland, vernal pools, and landscaped areas. The non-native grassland was dominated by non-native annual grass species including wild oats (*Avena fatua*) and soft chess (*Bromus hordeaceus*). Other species present included valley tassels (*Castilleja attenuate*), sticky tarweed (*Holocarpha virgata*), medusa-head grass (*Taeniatherum caput-medusae*), rose clover (*Trifolium hirtum*), and vetch (*Vicia* spp.) (Foothill Associates, 2004d).

Vernal pools support a variety of plant species including annual hairgrass (*Deschampsia danthoniodes*), downingia (*Downingia* spp.), spikerush (*Eleocharis macrostachya*), Vasey's coyote thistle (*Eryngium vaseyi*), toad rush (*Juncus bufonius*), Fremont's goldfields (*Lasthenia fremontii*), white headed navarretia



(*Navarretia leucocephala*), slender popcorn flower (*Plagiobothrys stipitatus*), and dwarf woolly marbles (*Psilocarphus brevissimus*).

Landscaped areas include areas associated with rural residential dwellings. Plants found here include Italian cypress (*Cupressus sempervirens stricta*), palms (*Washingtonia* spp.) and Modesto ash (*Fraxinus oxycarpa*).

The landscaped area and identified plants remain at the site, but most of the remaining land has been graded based on the visual survey conducted on March 24, 2010. Wetlands appear to be reforming near the center of the parcel, and grasses cover the site.

## **SUNRIDGE VILLAGE J**

The 81.3-acre Sunridge Village J project site is now vacant; it was recently used for grazing by cattle and horses. The residences, horse stables, watering areas, barns, and pens have been removed. The stock pond that had been used for watering livestock was no longer apparent on the visual survey conducted on March 24, 2010. Vegetation communities include non-native annual grassland that covers most of the site, along with swales and vernal pools. In addition, ornamental trees have been planted around the horse stable.

Non-native grassland plant species at the site include perennial rye (*Lolium perenne*), rip-gut brome (*Bromus diandrus*), tarweed, filaree (*Erodium botrys*), and Mediterranean barley (*Hordeum hystrix*) (Foothill Associates, 2004a).

Wet swales are located in linear drainages on the site and support vernal pool and seasonal wetland plant species including Carter's buttercup (*Ranunculus alveolatus*), manna grass (*Glyceria* spp.), toadrush, spikeweed (*Hemizonia* spp.), and annual bluegrass (*Poa annua*). Vernal pools at the site also support swamp timothy (*Crypsis schoenoides*), slender popcorn flower, goldfields, and downingia. The stock pond supports a mix of vernal pool and seasonal wetland vegetation (Foothill Associates, 2004a).

## **GRANTLINE 208**

The Grantline 208 project site is approximately 211 acres and was used for grazing cattle. Cattle were no longer present during the visual survey conducted on March 24, 2010. Non-native grassland is the predominant vegetation community on-site; seasonal wetlands, vernal pools, ephemeral drainages, and seasonal marsh also occur. A large stand of eucalyptus trees (*Eucalyptus*, spp.) is also present (Foothill Associates, 2005a).

Plant species associated with grasslands on the project site include soft chess, ripgut brome, barley, Italian ryegrass (*Lolium multiflorum*), annual fescue (*Vulpia* spp.), hawkbit (*Leontodon taraxacoides*), and clover (*Trifolium* spp.). Seasonal wetlands support spikerush, coyote thistle, Carter's buttercup, and fiddle dock (*Rumex pulcher*). Plants that occur within vernal pool on-site include water-starwort (*Callitriche* spp.), annual hairgrass, coyote thistle, manna grass, Hyssop loosestrife (*Lythrum hyssopifolia*), and popcorn flower. Seasonal marsh supports wetland plants including spike rush, cattails (*Typha* spp.), tule (*Scirpus* spp.), rush (*Juncus*, spp.), dallis grass (*Paspalum dilatatum*), and Bermuda grass (*Cynodon dactylon*) (Foothill Associates, 2005a).

## **DOUGLAS ROAD 98**

The Douglas Road 98 project site consists of approximately 105 acres of non-native annual grassland, vernal pool, and seasonal wetland. Common plants within grasslands include soft brome, wild oat,

hawkbit, filaree, valley tassels, smooth cat's ear (*Hypochaeris glabra*), mouse-tail grass (*Vulpia*, spp.), clover, tarweed, barley, and medusa-head (Foothill Associates, 2004b).

Vernal pools on the site support plant species including manna grass, vernal pool buttercup (*Ranunculus bonariensis* var. *trisepalus*), coyote thistle, spikerush, hedge-hyssop (*Gratiola ebracteata*), white-headed navarettia, annual hairgrass, and popcorn flower (Foothill Associates, 2004b).

Plant species found within seasonal wetlands on the project site include dock (*Rumex* spp.), quaking grass (*Briza minor*), Italian ryegrass, Mediterranean barley, annual hairgrass, and Fremont's goldfields (Foothill Associates, 2004b).

## **DOUGLAS ROAD 103**

The 106.4-acre Douglas Road 103 project site had been used as rangeland for grazing cattle. No cattle were present during the March 24, 2010 visual survey. Non-native grassland, vernal pools, riverine and depressional seasonal wetlands, and ephemeral and intermittent drainages are located on-site (Foothill Associates, 2005b).

Non-native grasslands consist mainly of soft brome, wild oat, and other non-native annual species. Vernal pool plants that occur on the project site include water-starwort, annual hairgrass, manna grass, Hyssop loosestrife, white-headed navarettia, and slender popcorn flower. Other wetlands support spikerush, Vasey's coyote thistle, vernal pool buttercup, and fiddle dock.

## **ARISTA DEL SOL**

The Arista del Sol project site consists of 214.9 acres of rangeland used for the grazing of horses. A residence and associated outbuildings are located on-site. These buildings were still present and occupied during the visual survey conducted on March 24, 2010; however, cattle were observed, not horses.

The predominant vegetation community on the project site is non-native annual grasslands, with interspersed vernal pools, seasonal wetlands, ephemeral pools, and three stock ponds also located on-site. Grassland plants include soft chess, ripgut brome, barley, Italian ryegrass, annual fescue, hawkbit, and clover (Foothill Associates, 2005c).

Vernal pool plants include water-starwort, annual hairgrass, coyote thistle, manna grass, Hyssop loosestrife, white-headed navarettia, and slender popcorn flower. Other wetlands support spikerush, Vasey's coyote thistle, Carter's buttercup, and fiddle dock (Foothill Associates, 2005c).

### **3.2.2.2 WILDLIFE**

The project site generally supports wildlife species that utilize non-native grasslands and vernal pools. Many bird species are known to inhabit the project site, including raptors such as white-tailed kite (*Elanus leucurus*) and red-tailed hawk (*Buteo jamaicensis*), while large mammals are generally absent. Vernal pool complexes support special-status crustaceans.

## **ANATOLIA IV**

Vegetation communities within the project site support many wildlife species. Common birds utilizing grasslands include mourning dove (*Zenaida macroura*), western meadowlark (*Sturnella neglecta*), savannah sparrow (*Passerculus sandwichensis*), and raptors such as red-tailed hawk. Other grassland

wildlife include black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Spermophilus beecheyi*), and western fence lizard (*Sceloporus occidentalis*).

Vernal pool habitats support several wildlife species, including killdeer (*Charadrius vociferus*), song sparrow (*Melospiza melodia*), black phoebe (*Sayornis nigricans*), coyote (*Canis latrans*), Pacific chorus frog (*Pseudacris regilla*), and invertebrates including California linderiella (*Linderiella occidentalis*). In addition, these vernal pools may support federally listed invertebrates that are discussed in the following section.

Based on the visual survey conducted on March 24, 2010, the landscaped area at the southeastern corner of the site is still present, and the remaining land is covered with grasses.

## **SUNRIDGE VILLAGE J**

Common wildlife species that occur in non-native grasslands and vernal pools, such as those described for the Anatolia IV project, would also be expected to occur at the Sunridge Village J site. Based on the visual survey conducted on March 24, 2010, although buildings were removed, trees and other vegetation are still present at the site, and no grading is apparent.

## **GRANTLINE 208**

Grasslands and wetlands at the Grantline 208 project site support many bird species, including water birds such as American wigeon (*Anas americana*), cinnamon teal (*Anas cyanoptera*), and mallard (*Anas platyrhynchos*), and terrestrial birds including western meadowlark, savannah sparrow, mourning dove, killdeer, western scrub-jay (*Apelocoma californica*), great-horned owl (*Bubo virginianus*), turkey vulture (*Cathartes aura*), white-tailed kite, American kestrel (*Falco sparverius*), and red-tailed hawk. Botta's pocket gopher (*Thomomys bottae*) is the only mammal known to occur on the site (Foothill Associates, 2005a).

## **DOUGLAS ROAD 98**

Common species associated with grasslands on the site include mourning dove, western meadowlark, savannah sparrow, red-tailed hawk, black-tailed jackrabbit, California ground squirrel, and western fence lizard. Common wildlife that are found within vernal pool habitats on-site include killdeer, song sparrow, black phoebe, coyote, and Pacific chorus frog (Foothill Associates, 2004b).

## **DOUGLAS ROAD 103**

Common wildlife species that occur in non-native grasslands and vernal pools, such as those described above for the adjacent parcels, would also be expected to occur at the Douglas Road 103 project site.

## **ARISTA DEL SOL**

Vegetation communities at the Arista del Sol project site support common wildlife species including Canada goose (*Branta canadensis*), American wigeon, cinnamon teal, mallard, western meadowlark, savannah sparrow, mourning dove, killdeer, western scrub-jay, great-horned owl, turkey vulture, white-tailed kite, American kestrel, and red-tailed hawk. The Botta's pocket gopher is the only mammal known to occur on the site. Vernal pool species include California linderiella along with the federally-listed species discussed below (Foothill Associates, 2005a).

### 3.2.2.3 THREATENED AND ENDANGERED SPECIES AND CRITICAL HABITAT

Special-status species with the potential to occur within the project site are listed in Table 3.2-1, based on a search of the California Natural Diversity Database (CNDDDB) for the Buffalo Creek 7.5-Minute Quadrangle in which the project site is located.

<b>Table 3.2-1</b> <b>Special-Status Species with Potential to Occur within the Project Site</b>		
<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
<b>Birds</b>		
Tricolored Blackbird	<i>Agelaius tricolor</i>	California Species of Concern
Burrowing Owl	<i>Athene cunicularia</i>	California Species of Concern
Swainson's Hawk	<i>Buteo swainsoni</i>	California Threatened
<b>Reptiles</b>		
Western Pond Turtle	<i>Actinemys marmorata</i>	California Species of Concern
California Tiger Salamander	<i>Ambystoma tigrinum californiense</i>	Federal Threatened/California Threatened/California Species of Concern
<b>Amphibians</b>		
Western Spadefoot	<i>Spea hammondi</i>	California Species of Concern
<b>Mammals</b>		
American Badger	<i>Taxidea taxus</i>	California Species of Concern
<b>Invertebrates</b>		
Vernal Pool Fairy Shrimp	<i>Branchinecta lynchi</i>	Federal Threatened
Vernal Pool Tadpole Shrimp	<i>Lepidurus packardii</i>	Federal Endangered
Valley Elderberry Longhorn Beetle	<i>Desmocerus californicus dimorphus</i>	Federal Threatened
<b>Plants</b>		
Boggs Lake Hedge-hyssop	<i>Gratiola heterosepala</i>	California Endangered/CNPS 1B.2
Ahart's Dwarf Rush	<i>Juncus leiospermus</i> var. <i>ahartii</i>	CNPS 1B.2
Legenere	<i>Legenere limosa</i>	CNPS 1B.1
Slender Orcutt Grass	<i>Orcuttia tenuis</i>	Federal Threatened/California Endangered/CNPS 1B.1
Sacramento Orcutt Grass	<i>Orcuttia viscida</i>	Federal Endangered/California Endangered/CNPS 1B.1
Source: California Department of Fish and Game Natural Diversity Database, 2010. CNPS = California Native Plant Society		

## **ANATOLIA IV**

The threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and the endangered vernal pool tadpole shrimp (*Lepidurus packardii*) have the potential to occur due to suitable vernal pool habitat at the project site (Foothill Associates, 2004d). Although focused surveys were not conducted, these two species were assumed to occur on the project site because they occur in the project vicinity and habitat on site is suitable for the species. The project site does not contain critical habitat for these species.

While the threatened California tiger salamander (*Ambystoma tigrinum californiense*) is known to occur in the vicinity of the project site, the species was not observed during surveys. In addition, due to the distance from the project site to known occurrences, the California tiger salamander was determined to be not present at the project site. Further, the project site is not within designated critical habitat for the species.

The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), a threatened species, was determined to be not present due to the lack of elderberry shrubs, upon which the species depends, on the project site. In addition, the project site is not within designated critical habitat for the species.

Two special-status plants, the endangered Sacramento Orcutt grass (*Orcuttia viscida*), and the threatened slender Orcutt grass (*Orcuttia tenuis*) were not found at the project site during focused surveys (Foothill Associates, 2004d). Therefore, these species were determined not to be present.

The presence of other special-status species noted in Table 3.2-1 above was not evaluated in the Biological Assessment or the Environmental Assessment prepared for the Anatolia IV project (Foothill Associates, 2004d; USACE, 2006b, respectively).

## **SUNRIDGE VILLAGE J**

Two special-status species, the federally-threatened vernal pool fairy shrimp and the federally-endangered vernal pool tadpole shrimp have the potential to occur due to suitable vernal pool habitat at the project site (Foothill Associates, 2004a). Although focused surveys were not conducted, these two species were assumed to occur on the project site because they occur in the project vicinity and habitat on site is suitable for the species. The project site does not contain critical habitat for these species.

Other federally-listed species known to occur in the vicinity of the project site, including the California tiger salamander, valley elderberry longhorn beetle, Sacramento Orcutt grass, and slender Orcutt grass, were determined to be not present (Foothill Associates, 2004a).

The presence of other special-status species noted in Table 3.2-1 above was not evaluated in the Biological Assessment or the Environmental Assessment prepared for the Sunridge Village J project (Foothill Associates, 2004a; USACE, 2006c, respectively).

## **GRANTLINE 208**

The federally-threatened vernal pool fairy shrimp and the federally-endangered vernal pool tadpole shrimp have the potential to occur due to suitable vernal pool habitat at the project site (Foothill Associates, 2005a). The project site does not contain critical habitat for these species.

Other federally-listed species known to occur in the vicinity of the project site, including the California tiger salamander, valley elderberry longhorn beetle, Sacramento Orcutt grass, and slender Orcutt grass, were determined not to be present (Foothill Associates, 2005a).

The presence of other special-status species noted in Table 3.2-1 above was not evaluated in the Biological Assessment or the Environmental Assessment prepared for the Grantline 208 project (Foothill Associates, 2005a; USACE, 2006e, respectively).

### **DOUGLAS ROAD 98**

Vernal pool fairy shrimp and vernal pool tadpole shrimp were found in some of the vernal pools at the project site during biological surveys (Foothill Associates, 2004b). The project site does not contain critical habitat for these species. Other federally-listed species known to occur in the vicinity of the project site, including the California tiger salamander, valley elderberry longhorn beetle, Sacramento Orcutt grass, and slender Orcutt grass, were determined not to be present (Foothill Associates, 2004b).

The presence of other special-status species noted in Table 3.2-1 above was not evaluated in the Biological Assessment or the Environmental Assessment prepared for the Douglas Road 98 project (Foothill Associates, 2004b; USACE, 2006a, respectively).

### **DOUGLAS ROAD 103**

Vernal pool fairy shrimp and vernal pool tadpole shrimp have been documented as occurring on the project site (Foothill Associates, 2005b). The project site does not contain critical habitat for these species. Other federally-listed species known to occur in the vicinity of the project site, including the California tiger salamander, valley elderberry longhorn beetle, Sacramento Orcutt grass, and slender Orcutt grass, were determined not to be present (Foothill Associates, 2005b).

The presence of other special-status species noted in Table 3.2-1 above was not evaluated in the Biological Assessment or the Environmental Assessment prepared for the Douglas Road 103 project (Foothill Associates, 2005b; USACE, 2007, respectively).

### **ARISTA DEL SOL**

Vernal pool fairy shrimp and vernal pool tadpole shrimp have been documented as occurring on the project site (Foothill Associates, 2005c). The project site does not contain critical habitat for these species. Other federally-listed species known to occur in the vicinity of the project site, including the California tiger salamander, valley elderberry longhorn beetle, Sacramento Orcutt grass, and slender Orcutt grass, were determined not to be present (Foothill Associates, 2005c).

The presence of other special-status species noted in Table 3.2-1 above was not evaluated in the Biological Assessment prepared for the Arista del Sol project (Foothill Associates, 2005c).

### **3.2.2.4 VERNAL POOLS**

In the Sunridge Specific Plan Area, there are approximately 115 acres of vernal pools (Foothill Associates, 2004d). Of these, approximately 71 acres were located on the Sares-Regis property (Anatolia I, II, and III). In 1996, USACE authorized the filling of 27 acres of these vernal pools, along with preservation of approximately 44 acres within a 482-acre onsite preserve.

In May 2002, prior to the certification of the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR, the need for wetlands and endangered species permitting strategies for the entire Sunrise-Douglas Community Plan area was recognized. Over 162 acres of vernal pool habitat exists within about 4,600 acres of the Sunrise-Douglas Community Plan area. Vernal pools are shallow pools that become seasonally inundated and support specific plant and wildlife species. The dynamic nature of this habitat

makes it highly sensitive to environmental factors, and the species that depend on them are specialized for periods of inundation and periods of drought. A number of plant and wildlife species that occur in wetland habitats are special-status species, and vernal pool ecosystems are considered very threatened due to rapid development of the area.

The U.S. Fish and Wildlife Service (USFWS) Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (USFWS, 2005) (Vernal Pool Recovery Plan) establishes an ecosystem-level strategy for the conservation and recovery of vernal pools. It covers 33 plant and animal species, 20 of which are federally-listed as endangered or threatened, that occur exclusively or primarily within vernal pool ecosystems of California and southern Oregon. The objectives of the plan are to address the threats to vernal pool species and to promote the conservation and preservation of vernal pool ecosystems. The project site is within the Mather Core Area identified in the Vernal Pool Recovery Plan.

According to the USFWS Vernal Pool Tadpole Shrimp (*Lepidurus packardii*) 5-Year Review: Summary and Evaluation (September 2007), the Mather Core Area contains approximately 74% of all the vernal pool tadpole shrimp occurrences in the southeastern Sacramento Valley, possibly the highest density of vernal pool tadpole shrimp occurrences within the range of the species. According to the review, the area is considered part of a “sub-watershed matrix,” which extends from Highway 50 to the Cosumnes River. High rainfall events would historically connect old terrace vernal pools into large, shallow, slow-flowing, temporary lakes. This hydrologic connectivity during high flows would facilitate metapopulation recolonization of vernal pools that were subject to localized extirpation during drought years. The USFWS review states that the hydrological connectivity in this area comprises a functioning ecosystem, underlain by old terrace soils, that is characterized by one of the densest and highest quality vernal pools areas in California. However, all occurrences within this core area are threatened by surrounding urbanization, hydrological alteration of vernal pools, potentially inappropriate management (including use of herbicides and inappropriate levels of grazing), and competition with introduced and native vegetation. Additionally, the proposed and existing pattern of development would essentially segment this once vast and interconnected vernal pool ecosystem into isolated communities which are no longer hydrologically connected and possibly no longer part of the metapopulation. Therefore, species extirpated from individual vernal pools or complexes due to drought or other conditions may remain extirpated indefinitely.

The USFWS issued the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* in 2005 to present the overall strategy to protect and enhance vernal pool species so that when successful the species can be delisted from the Endangered Species Act. The Vernal Pool Recovery Plan addresses 33 plant and animal species, 20 of which are listed as threatened or endangered, that occur either exclusively or primarily within vernal pool, swale or ephemeral freshwater habitat. The primary threats to the species and their habitats are urban development with associated infrastructure, agricultural conversion, altered hydrology, nonnative invasive species, and grazing. The goals of the recovery plan are to further understand the requirements of the species, stabilize populations from further decline, institute measures to facilitate recovery and habitat protection, and ultimately delist the species.

The Vernal Pool Recovery Plan defines core areas as critical sites necessary for the recovery or conservation of threatened or endangered species. The core areas are ranked by Zone 1, 2, or 3, with Zone 1 representing areas with the highest recovery priority. The Mather Core Area is designated Zone 1 due to the presence of Sacramento Orcutt grass (*Orcuttia viscida*), an endangered species, and a high number of other rare species. The Vernal Pool Recovery Plan identifies the percent of suitable species habitat that would need to be protected within each core area to accomplish initial habitat protection goals. The Vernal Pool Recovery Plan goals for the Mather Core Area are 95% preservation of suitable habitat for slender Orcutt grass (*Orcuttia tenuis*), Sacramento Orcutt grass (*Orcuttia viscida*), and vernal

pool tadpole shrimp (*Lepidurus packardii*), and 85% preservation of suitable habitat for the vernal pool fairy shrimp (*Branchinecta lynchi*).

### **3.2.3 REGULATORY FRAMEWORK**

Biological resources in the project site are protected by several federal, state, and local laws and policies, as described in this section.

#### **3.2.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS**

##### **ENDANGERED SPECIES ACT**

The Endangered Species Act (ESA) of 1973, as amended (16 United States Code (USC) §1531 *et seq.*) provides for the conservation and recovery of endangered and threatened species and the ecosystems upon which they depend. Section 7 of the ESA requires federal agencies to aid in the conservation and recovery of listed species and to ensure that their activities will not jeopardize the continued existence of listed species or adversely modify designated critical habitat. The USFWS and the National Oceanic and Atmospheric Administration are responsible for administration of the ESA.

##### **MIGRATORY BIRD TREATY ACT**

The Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 USC §703 *et seq.*) decrees that all migratory birds and their parts (including eggs, nests and feathers) are fully protected. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, and swallows). Under the MBTA, taking, killing or possessing migratory birds is unlawful, and projects that are likely to result in the taking of birds protected under the MBTA would require the issuance of take permits from the USFWS. Activities that would require such a permit would include destruction of migratory bird nesting habitat during the nesting season when eggs or young are likely to be present.

##### **CLEAN WATER ACT**

The Clean Water Act (CWA) is the primary federal law in the United States governing water pollution. Commonly abbreviated as the CWA, the act established the goals of eliminating releases to water containing high amounts of toxic substances, eliminating additional water pollution by 1985, and ensuring that surface waters would meet standards necessary for human sports and recreation by 1983.

Section 401 of the CWA requires certification from the State to ensure compliance with state water quality standards for any activity that may result in a discharge to a water body. A project that would result in the discharge of any pollutant, including soil, into waters and wetlands requires coordination with the appropriate California Regional Water Quality Control Board to obtain Section 401 certification.

##### **FISH AND WILDLIFE COORDINATION ACT**

The Fish and Wildlife Coordination Act of 1934, as amended (16 USC §661 *et seq.*) requires consultation with the USFWS whenever the waters or channel of a body of water of the United States (U.S.) are modified by a department or agency. The Fish and Wildlife Coordination Act provides for wildlife conservation through planning, development, maintenance and coordination of wildlife conservation and rehabilitation.



## **EXECUTIVE ORDER 11990- PROTECTION OF WETLANDS**

Executive Order 11990, Protection of Wetlands (Federal Register 26961) was issued May 24, 1977 and directed Federal agencies to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out their responsibilities. Executive Order 11990 requires Federal agencies to “avoid to the extent possible the long-term and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.”

## **USFWS RECOVERY PLAN FOR VERNAL POOL ECOSYSTEMS OF CALIFORNIA AND SOUTHERN OREGON**

Recovery plans are voluntary guidance documents that broadly address conservation needs of the species by identifying research, habitat protection and restoration, and management, and all other actions that must be taken to bring a species to a state in which it may be delisted or downlisted. The ESA envisions recovery plans as the central organizing tool for guiding each species’ recovery process. They should also guide federal agencies in fulfilling their obligations under Section 7(a)(1) of the ESA which call on all federal agencies to “utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species ...” In addition to outlining proactive measures to achieve the species’ recovery, recovery plans provide context and guidance for the implementation of other provisions of the ESA, such as Section 7(a)(2) consultations with other federal agencies and the development of Habitat Conservation Plans.

The USFWS Recovery Plan covers 33 plant and animal species associated with vernal pools, 20 of which are federally listed as endangered or threatened. All species addressed in the USFWS Recovery Plan are threatened by habitat loss and fragmentation. Therefore, areas currently, historically, or potentially occupied by the species are recommended for habitat protection, as appropriate. Although habitat protection of remaining vernal pools and vernal pool complexes in the vernal pool regions is a long-term goal, the “Core Areas” identified are targeted as the initial focus of protection measures. Core Areas are based on the known distribution of vernal pool species and habitats and include representative sites across a given species range, or support high species diversity. Core Areas are the specific sites that are necessary to recover these endangered or threatened species or recover or to conserve the species of concern addressed in the USFWS Recovery Plan. Higher recovery priorities are assigned to: (1) species with low numbers of populations or limited geographical distributions, (2) the largest blocks of habitat, (3) the largest populations of each taxon, and (4) to those populations or species representing unique ecological conditions and genotypes.

Core areas are ranked as Zone 1, 2, or 3 in order of their overall priority for recovery. Management actions are recommended to eliminate or ameliorate threats to vernal pool species, including loss, fragmentation, degradation, and alteration of habitat; competition/predation from both native and nonnative species, and other manmade factors such as disturbance of vernal pool habitats by recreational activities, inappropriate grazing regimes, and contamination by urban and agricultural activities. Although threats vary among core areas, habitat management to promote population stability of listed species and species of concern is likely to include: (1) maintaining the hydrology of the vernal pools or vernal pool complexes; (2) controlling invasive nonnative and native plants (e.g., through appropriately managed burning or grazing or the use of specific herbicides); and (3) providing suitable upland habitat buffers to protect pollinators of vernal pool plants, dispersal of vernal pool plants and animals, and local watersheds, and sustain important predators of herbivores such as rodents and rabbits (e.g., hawks).

### **3.2.3.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS**

#### **CALIFORNIA ENDANGERED SPECIES ACT**

The California Department of Fish and Game (CDFG) is responsible for administration of the California Endangered Species Act (CESA) of 1984, as amended (Fish and Game Code Section 2050 *et seq.*). Unlike the Federal ESA, there are no state agency consultation procedures under CESA. For projects that affect both a state and Federal listed species, compliance with the Federal ESA will satisfy CESA if CDFG determines that the Federal incidental take authorization is “consistent” with CESA. Projects that will result in a take of a state-only listed species require a take permit under CESA.

#### **CALIFORNIA FISH AND GAME CODE**

The CDFG has responsibility for protection of streams, water bodies, and riparian corridors through the Streambed Alteration Agreement process under Section 1601-1606 of the California Fish and Game Code. The CDFG regulates activities that would alter the flow, bed, channel or bank of streams and lakes. Wetlands under jurisdiction of USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from CDFG.

### **3.2.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS**

#### **SOUTH SACRAMENTO HABITAT CONSERVATION PLAN**

Pursuant to Section 10(a)(1)(B) of the ESA, the proposed South Sacramento Habitat Conservation Plan (SSHCP) presents a regional approach to protecting Federal and state endangered and threatened species in areas under development. Currently in draft, the SSHCP is a large-scale consolidated effort to protect and enhance wetlands (primarily vernal pools), aquatic, and upland habitats to provide ecologically viable conservation areas (County of Sacramento, 2008). Covering 40 different plant and wildlife species, including 10 that are state or Federally listed as threatened or endangered, the SSHCP will also serve to support application for Federal and state incidental take permits under the ESA and CESA. Part of the purpose of the SSHCP is to “minimize regulatory hurdles and streamline the permitting process for projects that will engage in covered activities,” while “consolidat(ing) environmental efforts to protect and enhance aquatic and upland habitats to provide ecologically viable conservation areas.” The SSHCP will be an agreement that will allow participants to engage in the “incidental take” of 40 listed plant and wildlife species and allow the County and cities the ability to extend incidental take coverage to third parties in return for conservation commitments.

#### **RANCHO CORDOVA GENERAL PLAN**

The City of Rancho Cordova General Plan, Natural Resources Element, sets forth goals, policies, and actions for the preservation of the City’s natural resources, including wildlife and habitat, as well as supporting the SSHCP and supporting policies and actions related to preserving natural wetlands (City of Rancho Cordova, 2006).

### **3.2.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES**

This section describes the potential impacts on biological resources, including vegetation, wildlife, and special-status species, in the area of analysis from the project alternatives. The project area contains significant vernal pool and wetland habitat.

Vernal pool habitat has been noted by the USFWS, the California Native Plant Society (CNPS), and others as requiring protection because it is unique and supports special-status species. In 2004, USEPA, USFWS, and USACE developed the Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area (Conceptual Strategy) for avoiding, minimizing, and preserving aquatic resource habitat in the Sunrise-Douglas Community Plan Area. An advisory document, the Conceptual Strategy set forth ten principles and standards that should be followed during development of projects within the Sunrise-Douglas Community Plan Area in order to achieve reasonable protection and conservation of federally threatened and endangered species under the Endangered Species Act (ESA), while taking a regional approach to avoidance and minimization of impacts to waters of the U.S., including wetlands, in accordance with Section 404 (b)(1) guidelines under the CWA (USACE, 2005a). The Conceptual Strategy also sought to support development of the South Sacramento County Habitat Conservation Plan which seeks to protect vernal pool habitat within the Sunrise-Douglas Community Plan area.

As part of the Conceptual Strategy, a map was developed to identify possible preserve areas that represent the minimum acceptable level of onsite preservation required to maintain species and connectivity of their habitat. To meet the goals of ESA and the CWA, the three agencies arrived at the boundaries of the “Preserve Areas” based on best professional judgment and a limited amount of information regarding regional and site-specific biology and hydro-geomorphology, while recognizing that development is planned in the area. Of particular focus was the preservation of vernal pool complexes and corridors for Morrison Creek and Laguna Creek.

### **3.2.4.1 THRESHOLDS OF SIGNIFICANCE**

The National Environmental Policy Act (NEPA) requires an evaluation of potential impacts to federally-listed endangered species, the ecological importance and distribution of affected species, and the intensity of potential impacts from the project alternatives.

The thresholds for determining the significance of impacts for this analysis encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. The alternatives under consideration were determined to result in a significant impact related to biological resources if they would result in any of the following:

- Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFG or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFG or USFWS;
- Have a substantial adverse effect on jurisdictional waters of the U.S, including wetlands, as defined by Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;

- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan; or
- Substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

### 3.2.4.2 ANALYSIS METHODOLOGY

Based on the affected environment, regulatory framework, and thresholds of significance, an evaluation of project alternatives was conducted to determine if impacts to biological resources, including wildlife and plants, special-status species, and sensitive habitats, would be significant. Potential impacts were evaluated by considering where the project alternatives would overlap or encroach on habitat, and how operations of the alternatives might affect habitat and species at the project location. This evaluation included direct impacts to species, including threatened, endangered, or candidate species, and populations, as well as impacts to habitat on which these species depend. Impacts on wildlife movement and conflicts with biological resources planning documents were also evaluated.

### 3.2.4.3 IMPACT ANALYSIS

**IMPACT3.2-1 – An adverse effect on a population of threatened endangered, or candidate species.** *An adverse effect on a population of a threatened, endangered, or candidate species or the loss or disturbance of important habitat for a listed or candidate species.*

**Proposed Project Alternative –** Under the Proposed Project Alternative, 742 acres would be developed into 477 acres of residential development, 45 acres of neighborhood parks, 28.5 acres of road improvements, 19.2 acres of drainage basin, 21.2 acres of commercial space, and 153.6 acres of wetland preserve (Figure 2-5). There would be a total net loss of 589 acres (742-153 acres) of non-native annual grasslands within which 29.9 acres of waters of the U.S., including 19.9 acres of vernal pools, would be filled.

Based on previous studies and focused plant and wildlife species surveys, two special-status species occur within vernal pools on the project site: the threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and the endangered vernal pool tadpole shrimp (*Lepidurus packardii*). The project site is not within designated critical habitat for these species.

Potentially significant direct and indirect impacts to the threatened vernal pool fairy shrimp and the endangered vernal pool tadpole shrimp would occur under the Proposed Project Alternative. Direct effects would occur through mortality to these species and permanent loss of vernal pool habitat, and indirect effects would occur through loss or alteration of upland and swale areas that support aquatic habitat. This alteration includes fragmentation of habitat and changes to hydrology as well as increased sediment, pollutants, and nutrients to wetlands downstream. In addition, long-term indirect effects from increased human presence would include the introduction of invasive plants, feral cats and other non-native predators to sensitive species, and hazardous and non-hazardous waste and materials. The USFWS estimates that any jurisdictional wetland or vernal pool habitat within 250 feet of project development would be indirectly impacted.

Therefore, **potentially significant direct and indirect** impacts to threatened, endangered, and candidate species would result from the Proposed Project Alternative.

**Reduced Footprint Alternative** - The Reduced Footprint Alternative would develop 742 acres into 367 acres of residential development, 35.5 acres of neighborhood parks, 24.2 acres of road improvements, 12.9 acres of drainage basin, 18.9 acres of commercial space, and 286.2 acres of wetland preserve (Figure 2-6). There would be a total net loss of 455.8 acres (742-286.2 acres) of non-native annual grasslands within which 20.3 acres of waters of the U.S., including vernal pools, would be filled. A delineation of extent of vernal pools impacted by the Reduced Footprint Alternative was not performed. However, the Reduced Footprint Alternative reduces impacts to wetlands by approximately one-third of the Proposed Project Alternative. Therefore, impacts to vernal pools would be expected to be reduced by one-third.

Under the Reduced Footprint Alternative, the preserve area of the Proposed Project Alternative is expanded to include additional acreage at the southern end of the preserve, and near the tributaries to Laguna Creek. The increased preserve area is intended to protect the headwaters of Laguna Creek and its nearby vernal pool areas. As a result, the Reduced Footprint Alternative would contain 35% less development in the Grantline 208 portion of the project site, 11% less development in the Douglas Road 103 portion, and 41% less development in the Arista del Sol portion.

As with the Proposed Project Alternative, potentially significant direct and indirect impacts to the threatened vernal pool fairy shrimp and the endangered vernal pool tadpole shrimp would occur under the Reduced Footprint Alternative. Direct effects would occur through mortality to these species and permanent loss of vernal pool habitat, and indirect effects would occur through loss or alteration of upland habitat, increased human presence, changes to hydrology, increased sediment, pollutant and nutrient influx, or other created conditions.

Therefore, **potentially significant direct and indirect** impacts to threatened, endangered, and candidate species would result from the Reduced Footprint Alternative.

**No Action Alternative** - As described in Chapter 2, the No Action Alternative would consist of construction of 2,060 single family homes and associated infrastructure. Construction activities would include site preparation, staging, excavation, paving, and building construction activities. No wetlands would be filled, and development would not occur within 25 feet of waters of the U.S.

As no wetlands, including vernal pools, would be filled, and no work would be conducted within 25 feet of wetlands, **no direct** impacts to threatened, endangered, or candidate species are anticipated under the No Action Alternative. However, development next to vernal pools under the No Action Alternative could have **indirect, potentially significant** impacts to threatened, endangered, or candidate species.

### **Mitigation Measure 3.2-1a - Compensatory Vernal Pool Habitat Creation and Preservation**

**Proposed Project Alternative and Reduced Footprint Alternative** - To mitigate for **Impact 3.2-1**, direct and indirect impacts to threatened, endangered, and candidate vernal pool species under the Proposed Project Alternative, 34.2 acres of vernal pool habitat would be created off-site as compensatory mitigation, and 52.7 acres of vernal pool habitat would be preserved off-site as compensatory preservation. Under the Reduced Footprint Alternative, 20.4 acres of vernal pool habitat would be created off-site as compensatory mitigation, and 40.8 acres of vernal pool habitat would be preserved off-site as compensatory preservation. Preservation credits would be purchased at the Bryte Ranch conservation bank. The off-site mitigation would occur at Gill Ranch in eastern Sacramento County, or other appropriate site, that consists of annual grassland with vernal pool complexes throughout. Laguna Creek runs through the Conceptual Strategy Preserve Area. With the proposed mitigation, there would be an overall net loss of waters of the U.S. under the Proposed Project Alternative; but there would be no overall net loss of waters of the U.S. under the Reduced Footprint Alternative.

For two of the six projects included in this EIS, Anatolia IV and Sunridge Village J, the off-site mitigation required by the respective USACE permit to offset vernal pool impacts has been completed. At Anatolia IV, 1.36 acres of habitat credits were purchased at the Laguna Terrace Mitigation Property, and 2.72 acres of preservation credits were purchased at the Gill Ranch Open Space Preserve. At Sunridge Village J, 3.38 acres of habitat were constructed at Gill Ranch, and an additional 9.18 acres of preservation credits were purchased at the Bryte Ranch conservation bank (letter to M. Jewell, USACE, from Cresleigh Homes, March 30, 2009).

**No Action Alternative** –No compensatory mitigation for direct impacts to vernal pools or other waters of the U.S. occurs under Mitigation Measure 3.2-1 under the No Action Alternative.

The implementation of **Mitigation Measure 3.2-1a** would be anticipated to reduce impacts at the population level such that impacts related to loss of populations of vernal pool species would be **less than significant**.

**IMPACT 3.2-2 – A net loss in the habitat value of sensitive biological habitat.** *A net loss in the habitat value of a sensitive biological habitat or area of special biological significance*

**Proposed Project Alternative** - Habitat within the project site consists of non-native annual grassland, vernal pools, and landscaped areas. Among these, only vernal pools would be considered sensitive biological habitat or areas of special biological significance. The Conceptual Strategy specifically notes that the preservation of vernal pool complexes and corridors for Morrison Creek and Laguna Creek is important in the reasonable protection and conservation of federally threatened and endangered species under the ESA and in avoiding and minimizing impacts to waters of the U.S. under the CWA.

The Proposed Project Alternative would result in direct impacts to vernal pool habitat value from the loss of 23.03 acres of vernal pool habitat, a sensitive biological habitat. Indirect effects would occur through the loss or alteration of upland habitat areas that are important in maintaining the habitat value of vernal pools. Short-term indirect effects could include increased sediment, pollutants, and nutrients to wetlands downstream, and long-term indirect effects could include introduction of invasive plants, feral cats and other non-native predators to sensitive species, and introduction of hazardous and non-hazardous waste and materials.

Therefore, **potentially significant direct and indirect** impacts to habitat value would result from the Proposed Project Alternative.

**Reduced Footprint Alternative-** Under the Reduced Footprint Alternative, impacts to habitat value would be less than under the Proposed Project Alternative, as vernal pool habitat near the headwaters of Laguna Creek would be preserved. It is assumed that loss of vernal pool habitat would be one-third less than under the Proposed Project Alternative. However, there would be direct loss of vernal pool habitat and indirect effects to upland habitat within the project site. As this vernal pool habitat supports threatened and endangered species, loss of this habitat would be considered a significant impact.

Therefore, **potentially significant direct and indirect** impacts to habitat value would result from the Reduced Footprint Alternative.

**No Action Alternative** - Because the No Action Alternative would not entail construction within 25 feet of vernal pools within the project site, **no direct** impacts to the value of sensitive biological habitat or areas of special biological significance are anticipated. However, **indirect, potentially significant** impacts would occur to vernal pool habitat value.

### **Mitigation Measure 3.2-2a Implement a Compensatory Mitigation Plan for Impacts to Waters of the U.S., including Wetlands**

Compensatory mitigation for impacts to waters of the U.S. is required to offset the loss associated with the DA permit. The goal is to achieve at least no net loss of aquatic resource functions. As stipulated in BOs prepared for the five projects permitted by the USACE, with the implementation of this mitigation, the USFWS determined the five projects were not likely to jeopardize the continued existence of the vernal pool fairy shrimp and the vernal pool tadpole shrimp (USFWS, 2004a,b; 2005; 2006a,b,c,d). The conclusions of these BOs were based on an analysis of the effects of the individual projects in the context of the status of the species and environmental baseline at the time of issuance. More analysis might be needed to determine if direct and indirect impacts to these species would be reduced to less than significant with the proposed Mitigation Measure 3.2-2. Therefore, direct and indirect impacts to threatened, endangered, or candidate species under the Proposed Project Alternative and the Reduced Footprint Alternative would still be **potentially significant** with the proposed Mitigation Measure 3.2-2.

**Mitigation Measure 3.2-2b- Compensatory Vernal Pool Habitat Creation and Preservation** - This mitigation measure would also mitigate for **Impact 3.2-2**, impacts to habitat value, under both the Proposed Project Alternative and Reduced Footprint Alternative. Off-site mitigation would occur at Gill Ranch providing the plan is approved. Due to its large size, potential for restoration, and proximity to other conservation areas, the Preserve is considered to be an ideal location for mitigation of this type. Laguna Creek runs through the Preserve, and has been identified as having a high habitat value in the Conceptual Strategy.

A more focused, project-level analysis of the replacement of habitat functions and values from the proposed mitigation would be required to determine if the proposed mitigation would reduce impacts to vernal pool habitat value from the Project alternatives to less than significant. Therefore, impacts to habitat value under the Proposed Project Alternative and the Reduced Footprint Alternative would still be **potentially significant** with the proposed mitigation.

**IMPACT 3.2-3 – Substantial impedance to the movement or migration of fish or wildlife.** *Substantial impedance to the movement or migration of wildlife resulting in substantial loss to the population of any native wildlife species*

**Proposed Project Alternative** - The Proposed Project Alternative would result in the loss of vernal pool habitat and upland grassland habitat in the project site. Historically, these vernal pool complexes provided dispersal of vernal pool crustaceans during large scale flooding which allowed these species to colonize different vernal pools and vernal pool complexes. However, due to the alteration of natural hydrology through flood control measures, dispersal of vernal pool species now occurs primarily through the activities of waterfowl and shorebirds (USFWS, 2004a,b; 2005; 2006a,b,c,d).

The loss of vernal pool habitat and hydrologic isolation of avoided complexes within the project site would result in reduced dispersal of vernal pool species. This would be offset by the creation of large preserves that would be permanently protected and managed as vernal pool habitat. Therefore, impacts to wildlife migration would be **less than significant** under the Proposed Project Alternative.

**Reduced Footprint Alternative** - The loss of vernal pool habitat within the project site under the Reduced Footprint Alternative would result in reduced dispersal of vernal pool species, albeit less than that under the Proposed Project Alternative, with the preservation of vernal pool habitat near the headwaters of Laguna Creek. This loss would be further offset by the creation of large preserves that would be permanently protected and managed as vernal pool habitat. Therefore, impacts to wildlife migration would be **less than significant** under the Reduced Footprint Alternative.

**No Action Alternative** - The project site is located in an area of open space in close proximity to several wetland preserves. This open space is recognized by the South Sacramento Habitat Conservation Plan (SSHCP) as valuable habitat. The project site is located within the Urban Services Boundary, and substantial development has already occurred within this area which reduces its value as a migration corridor for wildlife. As additional future development is anticipated to occur, the project site would play a less significant role in the migration of wildlife species compared to the open space areas to the south and east of the project site.

Although the hydrologic connection to habitat north and south of the project area could be maintained, there would be some fragmentation of habitat for wildlife that currently use this corridor. Therefore, **less than significant impacts** on the migration of wildlife are anticipated.

**Mitigation Measure 3.2-3a - Compensatory Vernal Pool Habitat Creation and Preservation** would also mitigate for **Impact 3.2-3**, impacts to migration of wildlife, under both the Proposed Project Alternative and Reduced Footprint Alternative. Through the creation and preservation of vernal pool habitat off-site, movement of vernal pool species would not be substantially impeded, as dispersal of vernal pool species now occurs primarily through the activities of waterfowl and shorebirds.

Therefore, impacts to migration of wildlife under the Proposed Project Alternative and the Reduced Footprint Alternative would be **less than significant** with mitigation.

**Proposed Project Alternative and Reduced Footprint Alternative- Mitigation Measure 3.2-3** would be required to mitigate for potential direct and indirect effects on raptors such as white-tailed kites and red-tailed hawks that have been observed nesting within the project area and to address **Impact 3.2-3- Migration of Wildlife** under both the Proposed and Reduced Footprint Alternatives.

Prior to each phase of grading and construction, a preconstruction survey will be performed between April 1 and July 31 to determine if active raptor nesting is taking place in the area. If nesting is observed, consultation with CDFG will occur in order to determine the protective measures which must be implemented for the nesting birds of prey. If nesting is not observed, further action is not required.

With implementation of **Mitigation Measure 3.2-3a**, impacts related to movement or migration of raptors under both the Proposed and Reduced Footprint Alternatives would be **less than significant**.

**No Action Alternative** –No mitigation occurs under mitigation measure 3.2-3 under the No Action Alternative.

**IMPACT3.2-4 – Substantial population loss of any native fish, wildlife, or vegetation.** *Substantial loss to the population of any native fish, wildlife, or vegetation. For purpose of this analysis, substantial is defined as a change in population or habitat that is detectable over natural variability for a period of five years or more*

**Proposed Project Alternative** - The Proposed Project Alternative would result in substantial loss to populations of vernal pool plant and animal species, including special-status vernal pool crustaceans. Direct effects would occur through displacement and mortality of these species and permanent loss of vernal pool habitat. Indirect effects would occur through loss or alteration of upland and swale areas that support aquatic habitat. Short-term indirect effects could include increased sediment, pollutants, and nutrients to wetlands downstream, and long-term indirect effects could include introduction of invasive plants, feral cats and other non-native predators to sensitive species, and introduction of hazardous and non-hazardous waste and materials.



In addition, direct and indirect impacts could occur to wildlife species that utilize upland grassland habitat. Loss of trees and other vegetation could result in impacts to raptors during the nesting season. Impacts to native trees, including oaks, could also occur.

Therefore, **potentially significant** impacts related to population loss would result under the Proposed Project Alternative.

**Reduced Footprint Alternative** - Under the Reduced Footprint Alternative, there would be less loss of populations of vernal pool plant and animal species than under the Proposed Project Alternative. However, direct effects would still occur through displacement and mortality of vernal pool species and permanent loss of vernal pool habitat. Indirect effects would occur through loss or alteration of upland habitats and swale areas that support aquatic habitat.

In addition, loss of upland grassland habitat could impact wildlife species that utilize this grassland. Loss of trees and other vegetation could result in impacts to migratory birds, including raptors, during the nesting season. Impacts to native trees, including oaks, could also occur.

Therefore, **potentially significant** impacts related to population loss would result under the Reduced Footprint Alternative.

**No Action Alternative** - As described in Section 3.2.1, vegetation and wildlife within the project site consists of those species that occur in non-native annual grasslands with vernal pool complexes. Under the No Action Alternative, no vernal pools would be filled and no work would be conducted within 25 feet of vernal pools. Thus, there would be **no direct** impact on populations of plant or wildlife species found in vernal pools. However, **indirect, potentially significant and unavoidable** impacts to these populations would be anticipated.

In addition, loss of grassland habitat would occur under the No Action Alternative. Although this non-native grassland habitat is not considered a sensitive habitat, there would be direct and indirect impacts to wildlife species that utilize this grassland, as even small-scale development would displace some animals. Loss of trees and other vegetation could result in impacts to migratory birds, including raptors, during the nesting season. Impacts to native trees, including oaks, could also occur. Therefore, **direct and indirect, potentially significant and unavoidable** impacts to populations of native fish, wildlife, or vegetation would be anticipated.

**Mitigation Measure 3.2-4a - Compensatory Vernal Pool Habitat Creation and Preservation** would also mitigate for **Impact 3.2-4**, impacts to population loss, under both the Proposed Project Alternative and Reduced Footprint Alternative. The creation and preservation of vernal pool habitat off-site would reduce the numbers of vernal pool plant and animal species lost such that effects at the population level would be reduced.

Therefore, impacts related to population loss under the Proposed Project Alternative and the Reduced Footprint Alternative would be **less than significant** with mitigation.

#### **Mitigation Measure 3.2-4b - Perform Tree Survey and Avoid or Replace Native Oak Trees and Other Native Trees Scattered Throughout the Project Sites**

**Proposed Project Alternative and Reduced Footprint Alternative - Mitigation Measure 3.2-4b** would be required to mitigate for potential direct and indirect effects on any native oak or other landmark tree species to address **Impact 3.2-4- Population Loss** under both the Proposed and Reduced Footprint Alternatives.

A survey identifying the specific type, size, and location of all existing on-site trees will be conducted. Existing on-site trees will be protected and preserved to the maximum extent feasible. Consistent with General Plan policies, the removal of any native oak tree measuring six inches or greater in diameter at breast height (dbh) and the removal of any non oak native tree (excluding cottonwoods and willows) other non-native landmark size trees measuring 19 inches or greater dbh necessary to accommodate future development will be mitigated by planting replacement trees (in-kind species on an inch-for-inch basis) within the project area.

With implementation of **Mitigation Measure 3.2-4b**, impacts related to loss of populations of native trees under both the Proposed and Reduced Footprint Alternatives would be **less than significant**.

**No Action Alternative** –No mitigation occurs under mitigation measure 3.2-4 under the No Action Alternative.

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### **3.3 HYDROLOGY, WATER QUALITY, WATER SUPPLY, AND GROUNDWATER**

Information presented for the affected environment for hydrology, water quality, water supply, and groundwater is based upon studies prepared for the Sunrise-Douglas Community Plan/Sunridge Specific Plan (Sunridge Specific Plan) as well as recent surface and groundwater management plans pertaining to Zone 40, and corresponding environmental documents. This section also includes a description of the relationship of the project to recent decisions in California case law with regard to long-term water supplies.

The water supply plan proposes sole reliance on the North Vineyard Well Field to serve near-term development, and conjunctive use supply over the long-term through the Zone 40 system. The North Vineyard Well Field is located off-site, approximately five miles southwest of the project site near the intersection of Florin and Excelsior Roads. The water is conveyed through a pipe network to the project site. The water supply plan is intended to avoid the possibility of contamination of the North Vineyard Well Field by known contaminant plumes, and to prevent groundwater extraction from having an effect on the migration of known contaminant plumes.

A Surface Water Supply Investigation (SWSI) evaluated a range of water demand scenarios which reflect logical increments of water demand tied to existing and project water demand from the Proposed Project Alternative, and adjacent developments. Water service to the project site would be provided by the Sacramento County Water Agency, which is governed by the Sacramento County Board of Supervisors. Subsequent to preparation of the SWSI, the County's Water Resources Division (WRD) prepared a water supply investigation which guided the development of the SWSI water demand scenarios. The WRD also conducted a water supply assessment to determine if sufficient supplies are available (County of Sacramento, 2001). The assessment identified and reviewed eight replacement water supply alternatives, and determined that the North Vineyard Well Field was the only alternative that could be implemented in the near-term, meet regulatory requirements, be consistent with County water policy, and be able to provide a long-term reliable source of water. According to the City of Rancho Cordova Planning Department, the City gave tentative reapproval to the Sunridge Specific Plan, which includes all the Sunridge Properties, based on the County's determination of the availability of water (Pers. Comm., Mr. Bill Campbell, City of Rancho Cordova Planning Department, June 2010).

Ultimately, the proposed well field would be integrated into the planned Zone 40 surface and groundwater conjunctive use program prescribed by the Water Forum Plan. Surface and groundwater supply considerations are described more fully in Section 3.3.2, Affected Environment.

#### **3.3.1 AREA OF ANALYSIS**

The area of analysis for hydrology, water quality, water supply, and groundwater is defined as the land and water bodies within the project sites, as well as Lower Morrison Creek and Upper Laguna Creek downstream of the project sites, the Zone 40 planning area, and the Central Sacramento County Groundwater Basin (Central Basin) (Figure 3.3-1). The Sacramento County Water Agency (SCWA) Zone 40 planning area encompasses most of the Central Basin. The North Vineyard well field, the immediate water supply source, is located 5 miles southwest of the project sites. The long-term water supply being developed for the entire Zone 40 area is a diversion from the Sacramento River at Freeport. The area of analysis includes these off-site water supply sources and facilities.

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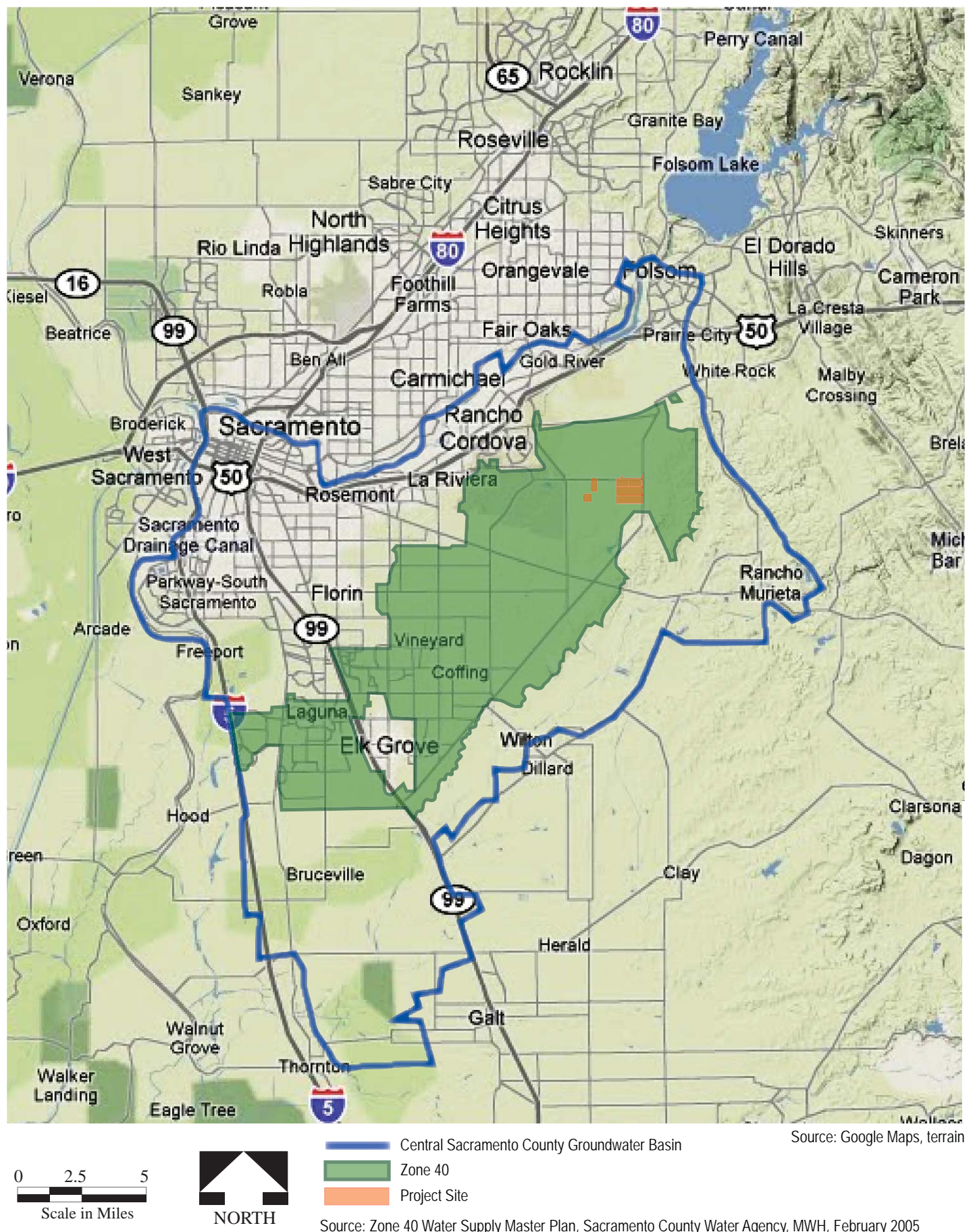


Figure 3.3-1. Surface and Groundwater Planning Boundaries

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### **3.3.2 AFFECTED ENVIRONMENT**

#### **HYDROLOGY**

Lower Morrison Creek and Upper Laguna Creek cross the site from northeast to southwest. From the headwaters, Morrison Creek conveys storm flows southwest through the project area towards Mather Field. Laguna Creek conveys storm flows southwest towards the junction of Sunrise Boulevard and Jackson Highway. Downstream, these two waterways receive urban runoff from large portions of Sacramento County, as well as the City of Sacramento, and convey stormwater to the Beach-Stone Lakes Wildlife Area in western Sacramento County to the Sacramento River.

The hydrologic regime on the site is dominated by seasonal stormwater run-off and precipitation, primarily between November and March. Throughout the project sites, drainage occurs to the south and southwest through surface or near surface flows. Hydrologic features identified throughout the project sites include vernal pools, depressional seasonal wetlands, riverine seasonal wetlands, and intermittent drainages.

#### **FOLSOM SOUTH CANAL**

The Folsom South Canal, which conveys American River water from Lake Natoma to 27 miles to the south, is located immediately west of Sunrise Boulevard, outside the area of analysis. Where the various branches of Morrison Creek encounter the canal, concrete overchutes convey flows over the canal. The upper (northern) branch of Morrison Creek crosses the canal by means of a 14 foot x 9 foot (width x height) overchute with a capacity of 720 cubic feet per second (cfs), and flows to Mather Lake. The lower (southern) branch of Morrison Creek crosses the canal via overchutes of 12 foot x 6 foot and 8 foot x 4.25 foot with capacities of 400 cfs and 175 cfs, respectively. Existing 100-year peak flows exceed the capacities of all three overchutes and any flows exceeding the capacity of the overchutes spill into the Folsom South Canal. The overchutes present a constraint in development east of Sunrise Boulevard because of their limited capacities. Enlargement of the overchutes was determined not to be feasible; therefore, the ultimate drainage system cannot exceed the capacities of the overchutes.

Where the Laguna Creek channel encounters the Folsom South Canal, the canal conveys flows under the creek by means of a double 16 foot x 16 foot concrete siphon structure. Development east of Sunrise Boulevard in the Laguna Creek drainage is restricted to the existing conditions 100-year flows, consistent with the County Water Resources Department Upper Laguna Creek Drainage Master Plan.

#### **SURFACE WATER QUALITY**

Currently, there are no water quality data available for the streams in the project area. The cattle grazing within the study area have access to the wetlands and would be expected to increase turbidity and fecal contaminants to the wetlands.

#### **GROUNDWATER QUALITY**

Within the Central Basin, the shallow aquifer generally provides the highest quality groundwater, while the deeper aquifer typically requires treatment for the reduction of iron and manganese concentrations that exceed California drinking water secondary standards related to aesthetic concerns. However, portions of the Central Basin have been contaminated and do not meet the California primary drinking water quality standards. This groundwater contamination is described in Section 3.10, Hazardous, Toxic, and Radioactive Waste. Groundwater contamination and the potential for movement of contaminant plumes



in the Aerojet and Mather areas severely limits the opportunity to develop additional groundwater pumping facilities, and wells cannot be constructed in developing areas, including the project sites, located above or near the contaminant plume.

## **SURFACE WATER SUPPLY**

The SCWA has developed the Freeport Regional Water Project to acquire additional surface water entitlements to enable conjunctive use of groundwater in Zone 40, and to provide facilities through which SCWA can deliver existing and anticipated surface water entitlements to the Zone 40 area. The Freeport Regional Water Project, the long-term water supply source identified in the 2005 Water Supply Master Plan to serve Zone 40, diverts water from the Sacramento River for joint use by SCWA and the East Bay Municipal Utilities District (EBMUD) (MWH, 2005). The Freeport Regional Water Project includes both surface and groundwater supplies, but relies primarily on a variety of surface water supplies (i.e., “Fazio,” Sacramento Municipal Utility District (SMUD) 1 and 2, American River Place of Use (POU) water, appropriative, and other water supplies) for direct supply. The potential shortages inherent with the planned surface water supplies are handled by a redundancy in facilities (i.e., groundwater production facilities). The Freeport Regional Water Project intake facility was completed in early 2010. The Vineyard Surface Water Treatment Plant is under construction with an expected completion date of November 2011.

The SCWA and Sacramento County concluded that reliance solely on groundwater to serve development authorized by the 1993 Sacramento County General Plan will deplete the Central Basin, resulting in shallow wells drying up, degradation of groundwater quality, increased pumping costs, land subsidence, and potential changes to local flood plains, and that the provision of surface water is necessary to meet the anticipated demand. Relying solely on groundwater for water supply under buildout conditions of the Sacramento County General Plan would cause groundwater levels to decline an additional 160 feet. To avoid adversely affecting groundwater by maintaining the sustainable yield of the Central Basin, as stipulated in the Water Forum Agreement, it is necessary to use surface water supplies in conjunction with available groundwater supplies to meet the projected buildout demands in Zone 40 (Jones & Stokes, 2003).

According to the Draft EIR/EIS for the Freeport Regional Water Project, as Zone 40 approaches buildout conditions in the future, more reliance on other sources of water or methods of supplementing groundwater yields will be necessary to comply with long-term average operational groundwater yield limitations while meeting build-out demand (Jones & Stokes, 2003). Possible options for meeting this demand could involve the following actions:

- Supplementing natural recharge with existing supplies during wet years,
- Acquiring water through transfers from other water users upstream of SCWA diversion points,
- Using the City of Sacramento’s American River entitlements in that area of Zone 40 that is within the City’s authorized American River Place of Use,
- Using reclaimed water from the Sacramento Regional Wastewater Treatment Plant (SRWWTP) on an exchange basis, or
- Acquiring additional appropriated water.

## **GROUNDWATER SUPPLY WITHIN SCWA ZONE 40**

Sacramento County water purveyors, including Zone 40 water purveyors, draw groundwater from both shallow and deep aquifer systems. Private domestic wells in the analysis area draw from the shallow aquifer.

Groundwater in the Central Basin is classified as occurring in a shallow aquifer zone or in an underlying deeper aquifer zone. Within Zone 40, the shallow aquifer extends to approximately 200–300 feet below the ground surface; in general, the water quality in this zone is considered good, except for the occurrence of low levels of arsenic in some locations. The shallow aquifer is typically used for private domestic wells and requires no treatment unless naturally occurring arsenic is encountered.

The deep aquifer is semiconfined by and separated from the shallow aquifer by a discontinuous clay layer. The base of the deep aquifer averages approximately 1,400 feet below the ground surface. Water at the base of the deep aquifer has higher concentrations of total dissolved solids. Iron and manganese typically found in the deep aquifer are at levels requiring treatment. Groundwater used in Zone 40 is supplied from both the shallow and deeper aquifer systems.

Groundwater in the analysis area moves from sources of recharge to areas of discharge. Most recharge to the local aquifer system occurs along active stream channels where extensive sand and gravel deposits exist. Consequently, the highest groundwater elevations typically occur near the American River and Sacramento River channels, and to a lesser extent, the Cosumnes River channel. Other sources of recharge within the analysis area include subsurface recharge from fractured geologic formations to the east, as well as deep percolation from applied surface water and precipitation.

Groundwater elevations through much of the Central Basin generally declined from the 1950s to about 1980 by about 20 to 30 feet. From 1980 to 1983, water levels recovered by about 10 feet and remained stable until 1987, which was the beginning of the 1987 to 1992 drought period. From 1987 to 1995, water levels declined by about 15 feet. From 1995 to 2003, most water levels recovered to higher levels than before the 1987 to 1992 drought period. Much of this recovery can be attributed to increased use of surface water in the Central Basin and the fallowing of previously irrigated agricultural lands for development of urban uses. In some locations, this recovery continued through 2008 (SCGA, 2008).

Limited groundwater recharge occurs on the project sites. Groundwater recharge that does occur on the project sites is primarily along the Morrison Creek drainage, and along an ephemeral drainage in the northeast section of the project sites (Douglas Road 98). Soils and underlying hardpan on the project sites result in little infiltration from the remaining undeveloped portions of the Sunridge Properties. Aquifer recharge from the project sites is minimal because of these site conditions.

### **3.3.3 REGULATORY FRAMEWORK**

#### **3.3.3.1 FEDERAL LAWS, REGULATIONS, POLICIES, AND PLANS**

##### **CLEAN WATER ACT**

Federal and state laws protect water quality from point and nonpoint sources. The federal Clean Water Act (CWA) requires states to adopt water quality standards and to submit those standards for approval by the US EPA. For point source discharges to surface water, the CWA authorizes the USEPA or approved states to administer the National Pollutant Discharge Elimination System (NPDES) Program. In California, the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs) administer many of the CWA's provisions.

When the CWA was enacted in 1972, point source pollution was considered the most significant problem affecting water quality in rivers and streams, and extensive programs were established to implement point source controls. Nonpoint source pollution is now recognized as the leading cause of water quality impairment in California (CVRWQCB, 2004). Past SWRCB and RWQCB programs tended to be directed at end-of-pipe facilities and other point sources. However, with diffuse nonpoint sources of pollutants, a new regulatory approach was created, changing the focus from site-specific problems to a watershed-based approach.

It is the responsibility of the SWRCB and RWQCBs to preserve and enhance the quality of the State's waters through the development of water quality control plans and the issuance of waste discharge requirements. The RWQCBs regulate point source discharges (i.e., discharges from a discrete conveyance) under the Porter-Cologne Act primarily through issuance of NPDES and waste discharge requirement permits. NPDES permits serve as waste discharge requirements for surface water discharges. A NPDES permit is required for municipal, industrial and construction discharges of wastes to surface waters. Waste discharge requirements and NPDES permits within the Sacramento-San Joaquin Delta falls under the jurisdiction of the Central Valley Regional Water Quality Control Board (CVRWQCB).

Anyone discharging or proposing to discharge materials to land in a manner that allows infiltration into soil and percolation to groundwater (other than to a community sanitary sewer system regulated by an NPDES permit) must file a report of waste discharge to the local RWQCB (or receive a waiver). Following receipt of a report of waste discharge, the RWQCB issues waste discharge requirements that prescribe how the discharge is to be managed.

Section 401 of the CWA requires certification from the state to ensure compliance with state water quality standards for any activity that may result in a discharge to a water body. A project that would result in the discharge of any pollutant, including soil, into waters and wetlands requires coordination with the appropriate RWQCB to obtain Section 401 certification.

## **SAFE DRINKING WATER ACT**

The USEPA is responsible for developing and implementing drinking water regulations under the federal Safe Drinking Water Act (SDWA) of 1974. The SDWA applies to every public drinking water system in the United States.

### **3.3.3.2 STATE LAWS, REGULATIONS, POLICIES, AND PLANS**

The Porter-Cologne Water Quality Control Act is the principal state law water quality protection statute in California. The Porter-Cologne Act established a comprehensive program to protect water quality and the beneficial uses of surface water and groundwater. The statute establishes the SWRCB and nine RWQCBs which are charged with implementing its provisions and have primary responsibility for protecting water quality in California. The SWRCB generally provides statewide permitting, program guidance and oversight, allocates funds, and reviews RWQCB decisions. The RWQCBs have primary responsibility for individual permitting, inspection, and enforcement actions within each respective hydrologic region. The Sacramento-San Joaquin Delta falls under the jurisdiction of the Central Valley RWQCB. The RWQCBs regulate point source discharges under the Porter-Cologne Act primarily through issuance of NPDES and waste discharge requirement permits. The SWRCB and RWQCBs also have numerous nonpoint source-related responsibilities.

## **CALIFORNIA DEPARTMENT OF PUBLIC HEALTH REQUIREMENTS**

The California Department of Public Health (CDPH), Office of Drinking Water, is authorized by USEPA to implement the federal drinking water standards in California. The department also implements the more stringent California public drinking water standards. The California Code of Regulations (CCR), Title 22, Division 4 contains the State's requirements for production, discharge, distribution, and use of public drinking water.

The CDPH has requirements that specify the minimum distance, or the minimum "travel" time, between known contaminant plumes and municipal groundwater extraction well sites. The intent is to place municipal production wells a sufficient distance from known contaminant plumes to reduce or eliminate the possibility of contamination of extracted groundwater. This requirement would be enforced by implementation of CDPH Drinking Water Source and Assessment Program (DWSAP). Under the DWSAP, all new and existing drinking water sources must undergo a drinking water source assessment prior to being permitted (Montgomery Watson, 2000). The general elements of the assessment include: a) Delineation of an area around a drinking water source through which contaminants might move and reach the source, b) An inventory of possible contaminating activities (PCAs) that might lead to the release of microbiological or chemical contaminants within the delineated area, and c) A determination of the PCAs to which the drinking water source is most vulnerable.

## **SENATE BILLS 610 AND 221**

The State of California has enacted legislation that is applicable to the consideration of larger projects under CEQA. Senate Bill (SB) 610 (Chapter 643, Statutes of 2001) requires the preparation of water supply assessments (WSAs) for large developments (i.e., more than 500 dwelling units or nonresidential equivalent), such as the Sunridge Properties (Public Resources Code §21151.9; Water Code §10910 et seq.). The WSAs prepared by "public water systems" responsible for serving project areas (e.g., SCWA) address whether existing and projected water supplies are adequate to serve the project while also meeting existing urban and agricultural demands and the needs of other anticipated development in the service area in which the project is located. If the most recently adopted Urban Water Management Plan (UWMP) accounted for the projected water demand associated with the project, the public water system may incorporate the requested information from the UWMP. If the UWMP did not account for the project's water demand, or if the public water system has no UWMP, the project's WSA shall discuss whether the system's total projected water supplies (available during normal, single-dry, and multiple-dry water years during a 20-year projection) would meet the project's water demand in addition to the system's existing and planned future uses, including agricultural and manufacturing uses.

Where a WSA concludes that insufficient supplies are available, the public water system must provide to the city or county considering the development project its plans for acquiring and developing additional water supplies. Based on all the information in the record relating to the project, including all applicable WSAs and all other information provided by the relevant public water systems, the city or county must determine whether sufficient water supplies are available to meet the demands of the project, in addition to existing and planned future uses. Where a WSA concludes that insufficient supplies are available, the WSA must lay out the steps that would be required to obtain the necessary supply. The WSA is required to include (but is not limited to) identification of the existing and future water supplies over a 20-year projection period. This information must be provided for average normal, single-dry, and multiple-dry years. The absence of an adequate current water supply does not preclude project approval, but it does require a lead agency to address a water supply shortfall in its project findings.

If the project is approved, additional complementary statutory requirements; SB 221(2001), would apply to the approval of tentative subdivision maps for more than 500 residential dwelling units (Government

Code §66473.7). This statute requires cities and counties to include, as a condition of approval of such tentative maps, the preparation of a “water supply verification.” The verification, which must be completed by no later than the time of approval of final maps, is intended to demonstrate that there is a sufficient water supply for the newly created residential lots. The statute defines sufficient water supply as follows:

*... the total water supplies available during normal, single-dry, and multiple-dry years within a 20-year projection period that would meet the projected demand associated with the proposed subdivision, in addition to existing and planned future uses, including, but not limited to, agricultural and industrial uses.*

A number of factors must be considered in determining the sufficiency of projected supplies:

- The availability of water supplies over a historical record of at least 20 years;
- The applicability of an urban-water-shortage contingency analysis that includes action to be undertaken by the public water system in response to water supply shortages;
- The reduction in water supply allocated to a specific water-use sector under a resolution or ordinance adopted or a contract entered into by the public water system, as long as that resolution, ordinance, or contract does not conflict with statutory provisions giving priority to water needed for domestic use, sanitation, and fire protection; and
- The amount of water that the water supplier can reasonably rely on receiving from other water supply projects, such as conjunctive use, reclaimed water, water conservation, and water transfer, including programs identified under federal, state, and local water initiatives.

## **VINEYARD AREA CITIZENS FOR RESPONSIBLE GROWTH V. CITY OF RANCHO CORDOVA**

The water supply for the Sunridge Properties has been identified as the North Vineyard Well Field, five miles southwest of the project sites. There were drawdown contaminant migration and river dewatering issues related to that proposed well field that resulted in a legal challenge. The Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR was the subject of a lawsuit, *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova*, with regard to the planned water supply. The case was appealed to the California Supreme Court which issued its ruling in September 2007. The Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR concluded that, based on implementation of the Water Forum Plan, there would be sufficient long-term water supplies available for the project. The plaintiffs objected to this conclusion, arguing that unless long-term water supplies are essentially guaranteed, it is a violation of California law to approve a land use plan for significant new development. The Supreme Court disagreed with the plaintiffs that water supplies must be essentially guaranteed, acknowledging that water planning is by nature an uncertain business and that no guarantees are available. However, a city must demonstrate a “reasonable likelihood” that a projected water source will be available to supply a development project. Thus, a city may approve new large developments in the face of uncertain long-term water supplies as long as the city:

- Evaluates alternative long-term supplies for those developments;
- Acknowledges any uncertainties associated with those alternative long-term water supplies; and
- Identifies any environmental impacts associated with securing and delivering those alternative supplies.

The court also held that the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR did not comply with the requirements of CEQA on the following points:

- Internal inconsistencies with regarding to the amount of long-term supply available;
- The extent to which the document was tiering off of the Water Forum EIR;
- All the impacts of a large development project must be evaluated up front before the project is approved; and
- Decision-makers were not adequately informed about the long-term cumulative impact of development on water supplies, because it failed to show at least an approximate long-term sufficiency in total supply to serve projected growth.

The court also held against the plaintiffs on several points. The court agreed that the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR failed to alert the public in a timely way to potential impacts that use of the well field might have on the Cosumnes River and its salmon population, but held that the availability of the well field supplies was adequately disclosed, as were the groundwater impacts of withdrawing the anticipated supply. The court also determined that the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR adequately informed decision-makers about the methods and impacts of delivering the well field supply to the project and the uncertainties about this supply's long-term viability because of competition from other groundwater users.

In November 2009, in response to the lawsuit, the City of Rancho Cordova began preparing a Revised EIR for the Sunrise-Douglas Community Plan/Sunridge Specific Plan (City of Rancho Cordova, 2009). The revised EIR will specifically respond to the lawsuit in the following expanded or new analyses:

- Analyze alternative sources of water and the impacts of obtaining these alternative sources for the long-term water supply analysis, if the analysis shows the water supply is not "reasonably likely." New or revised standards of significance may be revised to reflect these changed standards.
- Analyze public trust resources as they relate to the Cosumnes River.
- Update mitigation measures to reflect the mitigating policies of the City of Rancho Cordova's General Plan and Infrastructure Element.
- Prepare a Fisheries Resources chapter to address Cosumnes River issues, as well as issues associated with fishery resources within the Sacramento River. Changed water supply/water management conditions in the region will be described, as well as the effect of these changed conditions on fisheries resources. Document the latest data and information regarding fishery resources in the Sacramento River, the status of water diversions upstream and downstream of the Freeport Water Intake Structure, and the latest information available regarding the Central Valley Project Operations Criteria and Plan and potential changes in response to judicial decisions.
- Comprehensively address the cumulative water supply actions that are ongoing within the region. Incorporate, as appropriate, analysis contained in the Zone 40 Water Supply Master Plan EIR, the Freeport Regional Water Supply Project EIR, and Eastern County Replacement Water Supply Project Draft EIR. Provide a cumulative context for water supply deliveries in the Sacramento River and Sacramento-San Joaquin Delta.

As a NEPA document, this EIS is not required to comply with a California Supreme Court opinion offered in a decision over a challenge to a CEQA document, even for an EIS prepared for the same project. The lawsuit did not generally point to errors in the water supply analysis, but called for an assessment of long-term supplies, and identification of uncertainties related to those supplies. To maintain a consistent approach in the environmental documentation, however, a threshold of significance has been

incorporated into the water supply analysis of: reasonable likelihood of long-term water supply projects. The related analysis evaluates whether there would be an increased need for development of long-term regional surface and groundwater supplies, and identifies progress made toward long-term water supply projects that would provide water to the project site.

### **3.3.3.3 REGIONAL AND LOCAL LAWS, REGULATIONS, POLICIES, AND PLANS**

#### **RANCHO CORDOVA GENERAL PLAN**

An updated analysis of the proposed project's and alternatives' consistency with applicable goals and policies from the Rancho Cordova General Plan (City General Plan) relating to water supply, and requirements imposed by Rancho Cordova, are provided below.

**Policy ISF.2.4** - Ensure that water supply and delivery systems are available in time to meet the demand created by new development, or are guaranteed to be built by bonds or securities.

**Action ISF.2.4.1** - The following shall be required for all legislative-level development projects, including community plans, general plan amendments, specific plans, rezonings, and other plan-level discretionary entitlements, but excluding tentative subdivisions maps, parcel maps, use permits, and other project-specific discretionary land-use entitlements or approvals:

- Proposed water supplies and delivery systems shall be identified at the time of development project approval to the satisfaction of the City. The water agency or company proposing to provide service (collectively referred to as "water provider") to the project may provide several alternative methods of supply and/or delivery, provided that each is capable individually of providing water to the project. The project applicant or water provider shall make a factual showing prior to project approval that the water provider or providers proposing to serve the development project has or have legal entitlements to the identified water supplies or that such entitlements are reasonably foreseeable by the time of subsequent, project-specific discretionary land-use entitlements or approvals. This factual showing shall also demonstrate that the water provider's identified water supply is reasonably reliable over the long term (at least 20 years) under normal, single-dry and multiple-dry years.
- All required water treatment and delivery infrastructure for the project shall be in place at the time of subsequent, project-specific discretionary land-use entitlements or approvals, or shall be assured prior to occupancy through the use of bonds or other sureties to the City's satisfaction. Water infrastructure may be phased to coincide with the phased development of large-scale projects.

**Action ISF.2.4.2** - The following shall be required for project-specific discretionary land-use entitlements and approvals including, but not limited to, all tentative subdivision maps, parcel maps, or use permits.

- An assured water supply and delivery system shall be available or reasonably foreseeable at the time of project approval. The water agency providing service to the project may provide several alternative methods of supply and/or delivery, provided that each is capable individually of providing water to the project.
- The project applicant, water agency (or agencies), or water company (or companies) providing water service to the project site shall make a factual showing consistent with,

or the City shall impose conditions similar to, those required by Government Code §66473.7 in order to ensure an adequate water supply for development authorized by the project. Prior to recordation of any final subdivision map, or prior to City approval of any similar project-specific discretionary land use approval or entitlement required for nonresidential uses, the project applicant or water provider shall demonstrate the availability of a long-term, reliable water supply for the amount of development that would be authorized by the final subdivision map or project-specific discretionary non-residential approval or entitlement. This assurance of water supply shall identify that the water provider has legal entitlement to the water source and that the water source is reasonably reliable (at least 20 years) under normal, dry and multiple dry years. Such demonstration shall consist of a written certification from the water provider that either existing sources are available or that needed improvements will be in place prior to occupancy.

- Off-site and onsite water infrastructure sufficient to provide adequate water to the subdivision shall be in place prior to the issuance of building permits or their financing shall be assured to the satisfaction of the City prior to the approval of the Final Map, consistent with the requirements of the Subdivision Map Act, or prior to the issuance of a similar, project-level entitlement for non-residential land uses.
- Off-site and onsite water distribution systems required to serve the subdivision shall be in place and contain water at sufficient quantity and pressure prior to the issuance of any building permits. Model homes may be exempted from this policy as determined appropriate by the City, and subject to approval by the City.

## **WATER FORUM PLAN AND SUCCESSOR EFFORT**

The Water Forum Plan (WFP) process brought together a diverse group of stakeholders that included water managers, business, and agricultural leaders, environmentalists, citizen groups, and local governments to evaluate water resources and future water supply needs of the Sacramento metropolitan region. The coequal objectives of the Water Forum Plan are to: (1) Provide a reliable and safe water supply for the region's economic health and planned development through the year 2030; and (2) Preserve the fishery, wildlife, recreational, and aesthetic values of the Lower American River. The first objective is to be met by additional diversions of surface water, increased conjunctive use of surface water and groundwater, expanded water conservation, and water reclamation. The second objective includes development of responsible and feasible alternatives to improve fish flow patterns, reduce daily flow fluctuations, and improve in-stream harvest.

Development of the WFP to meet the coequal objectives involved substantial scientific review and input, environmental analysis, and consensus-building with various stakeholders. The WFP included a comprehensive package of linked actions which, when implemented, are intended to meet the coequal objectives. These linked actions would require the support of each of the stakeholders in the public policy decision making process and through implementation in order to successfully achieve the coequal objectives.

These linked actions include adhering to agreed upon long-term average operational yield limits (sustainable yields) for each of the three geographic subareas of the groundwater basin within Sacramento County. These agreed upon limits are 131,000 acre-feet (af) for the North Area (i.e., the area north of the American River); 273,000 af for the Sacramento Central Groundwater Basin (Central Basin) (i.e., the area between the American and Cosumnes Rivers); and 115,000 af for the Galt Area (i.e., the area south of the Cosumnes River).



Within the Central Basin (which includes the Sunrise-Douglas Community Plan/Sunridge Specific Plan project area and the North Vineyard Well Field area), the agreed upon limit of 273,000 acre-feet per year (af/yr) represents an amount equal to the projected 2005 groundwater pumping rates. Because of limits placed on the extraction of groundwater by the WFP, delivery of additional surface water to the Central Basin would be required to meet total water demand in 2030. Based on an assumption that a 25.6% level of water conservation is achievable (with 1990 serving as the base year), approximately 63,857 af of surface water would be delivered to the South Area on an average annual basis. A portion of this delivery (approximately 32,625 af/yr) is expected to be a firm, dry year supply. The remainder would be available dependent upon hydrologic year type. It should be noted that the ultimate geographic distribution of groundwater and surface water deliveries throughout the South Area sub-basin greatly influences the capacity and construction timing of the water conveyance facilities required to serve the water demand within the analysis area.

The WFP proposed an equilibrium condition around which the groundwater system would be allowed to fluctuate and determined the allowable average annual groundwater extraction (or safe-yield) necessary to maintain that equilibrium condition. Therefore, any proposed water supply project must maintain or improve upon the groundwater conditions specified within the WFP for the 2030 projected level of development.

The Final EIR for the Water Forum Plan was prepared in October of 1999 and the City of Sacramento and County of Sacramento, acting as co-lead agencies, certified the Final EIR and adopted the Water Forum Plan in late 1999. Each of the stakeholder groups' governing bodies subsequently adopted the WFP in early 2000. Upon adoption, the WFP became the Water Forum Agreement, which is embodied in a Memorandum of Understanding between the City of Sacramento, the County of Sacramento and the various stakeholder groups.

In February 2006, the Central Sacramento County Groundwater Forum and the Water Forum Successor Effort accepted the Central Sacramento County Groundwater Management Plan. The Groundwater Management Plan provides for the review of current and future water supply and demands and contains Basin Management Objectives (BMOs). Each BMO focuses on managing and monitoring the basin to benefit all groundwater users within the basin. The Groundwater Management Plan also contains "trigger points" and remedies to ensure full implementation of the individual BMOs. The five BMOs are described below:

- Maintain the long-term average groundwater extraction rate at or below 273,000 af/yr;
- Maintain specific groundwater elevations within all areas of the basin consistent with the Water Forum "solution";
- Protect against any potential inelastic land surface subsidence by limiting subsidence to no more than 0.007 feet per 1 foot of drawdown in the groundwater basin;
- Protect against any adverse impacts to surface water flows in the American, Cosumnes, and Sacramento Rivers; and
- Meet water quality objectives, including:
  - Total Dissolved Solids (TDS) concentration of less than 1,000 milligrams per liter (mg/l),

- Nitrate concentration of less than 45 mg/l, and Volatile Organic Compounds (VOC) - any measurable trace of VOC in a private or public well should be considered significant and action taken.

The Sacramento Central Groundwater Authority was formed on August 29, 2006 through a Joint Powers Agreement (JPA) signed by the Cities of Elk Grove, Folsom, Rancho Cordova, and Sacramento and the County of Sacramento to manage the Sacramento Central Groundwater Basin.

## **SACRAMENTO COUNTY WATER AGENCY ZONE 40 PLANNING**

The SCWA was formed in 1952 for the express purpose of making water available for beneficial use of lands and inhabitants, and to produce, store, transmit, and distribute groundwater. The SCWA is governed by the Sacramento County Board of Supervisors, acting as SCWA's Board of Directors.

In 1985, SCWA was given the authority to establish groundwater management zones for the purpose of distributing surface water to replenish the groundwater basin and to stabilize groundwater levels within the influence area of the Elk Grove cone of depression. A groundwater management zone is authorized to be formed in any area that would benefit from the importation and distribution of surface water for municipal and industrial uses. Zone 40 was formed for the purpose of constructing facilities for the production, conservation, transmittal, distribution, and sale of surface water and groundwater for conjunctive use in the Zone 40 area.

Management of groundwater is also an important goal in Zone 40 to ensure the long-term viability of groundwater supplies in the region. Historical groundwater use in Zone 40 comprised agricultural, rural, and municipal pumping. Long-term reliance on groundwater has formed a groundwater cone of depression, known as the "Elk Grove cone of depression," within Zone 40. Groundwater in the Central Basin moves toward the center of the cone of depression, and groundwater extracted from the basin contributes to further declines at the cone of depression. Management of the Central Basin is being considered under a successor process to the Sacramento Area Water Forum Agreement known as the Central Sacramento County Groundwater Forum. SCWA is a major sponsor and stakeholder in this broadly shared process.

In 1987, SCWA adopted a Zone 40 Water Supply Master Plan, a long-term plan for meeting future water needs in the newly developing Laguna and Vineyard areas, which have historically depended on groundwater. In 1993, Sacramento County approved a general plan that changed the land use designation of large areas of central Sacramento County from agricultural use to residential, commercial, and industrial uses. As a result, in 1999, SCWA expanded the boundary of Zone 40 to include the urban policy area of the County's general plan and areas studied in previous master planning efforts. Zone 40's boundaries were expanded from 17,200 acres (1987 Plan) to 86,000 acres. In 2003, SCWA updated their Water Supply Master Plan based on these new boundaries.

The 1999 Water Forum EIR evaluated SCWA's water supply needs in combination with other water supply needs in the region. The SCWA agreed to a series of actions and commitments related to diversions of surface water, dry-year supplies, fishery flows, habitat management, water conservation, and groundwater management. The 2030 demand and water supplies identified in the Water Forum EIR were used by the County in its role as a land use agency to describe an area of development that could be served by these supplies. The Water Forum EIR evaluated the provision of water for a 30-year planning period based on land use projections. The 2005 Zone 40 Water Supply Master Plan (WSMP) relied on the County of Sacramento General Plan to identify where urban development would occur within the county, consistent with Water Forum Agreement (WFA) purveyor-specific agreements for water service to those areas.

The WFA includes estimates of sustainable groundwater yield that are supported by more extensive hydrologic and hydrogeologic information for the Central Basin underlying Zone 40 than that available for the 1987 Plan. In Sacramento County, three groundwater subbasins—the North Area (the area north of the American River), Central Area (roughly the area between the American and Cosumnes Rivers), and South Area (generally the area south of the Cosumnes River)—have been identified. Zone 40 lies entirely within the Central Area. Technical studies conducted in support of the WFA provided a basis for defining the negotiated sustainable yield for each of the three Sacramento County subbasins. Based on negotiated levels of acceptable impacts associated with operating the basins at specified extraction volumes, the WFA negotiated a sustainable long-term average annual yield for the Central Area of 273,000 af/yr, including groundwater pumping in the Central Basin. Within the context of this sustainable yield, the Water Supply Master Plan identifies and projects groundwater demands within the 2030 analysis area.

SCWA undertook a comprehensive update of its water supply planning process in response to the requirements of the WFA through the Zone 40 WSMP, which was adopted in February 2005 (SCWA 2005a). The purpose of the Zone 40 WSMP was to identify available water and the infrastructure necessary to deliver water to a subarea within Zone 40 known as the 2030 Study Area. The 2030 Study Area encompasses approximately 46,600 acres (including portions of the cities of Elk Grove and Rancho Cordova) where development of industrial, commercial, office, and residential land uses is expected to occur and where demand for water is expected to be concentrated during the planning horizon of the WSMP (i.e., 2030).

The most significant changes reflected in the 2005 Water Supply Master Plan include (1) a major modification of the Central Valley Project's (CVP) contracting policy that occurred as a result of the Central Valley Project Improvements Act (CVPIA); (2) the signing of the Water Forum Agreement; and (3) the adoption of the 1993 Sacramento County General Plan update that substantially increased the area designated for urban growth in the County. Significantly, the 2005 Water Supply Master Plan has as its foundation the Water Forum Agreement and its objectives. The 2005 Plan is also based on an updated set of assumptions regarding urban development patterns, water use demand patterns, groundwater availability, and surface water availability.

During development of the Zone 40 WSMP, the general plans for the newly incorporated Cities of Elk Grove and Rancho Cordova were not available; therefore, the County of Sacramento General Plan (County of Sacramento 1993) was the planning document used to project growth and development anticipated to occur within an area defined as the Urban Policy Area (UPA). The County's UPA is defined as the area anticipated to be built out with urban development within the planning horizon of the general plan (year 2024). This area is known as the 2030 Study Area. The southern boundary of the 2030 Study Area generally coincides with the County's UPA. The 2030 Study Area was delineated based on the County's identified growth areas and the area of land that was planned to be served by the negotiated firm water supply identified in the WFA. Because of the time frame of the Zone 40 WSMP and the likelihood that the UPA would be expanded during the next general plan update (currently under way), SCWA identified four likely areas outside the UPA where urban expansion was logical and could occur. The areas included in the 2030 Study Area were selected based on their proximity to the UPA. The 2030 Study Area also captured active projects and included the newly incorporated City of Rancho Cordova.

As a signatory to the WFA, SCWA has agreed to ensure that water conservation and demand management-necessary steps to achieve WFA objectives-are integrated into future growth and water planning activities in its service area. The Zone 40 WSMP provides a flexible plan of water management options that can be implemented and modified if conditions that affect the availability and feasibility of water supply sources change in the future. The goal of the Zone 40 WSMP is to carry out a conjunctive-use program, which is defined as the coordinated management of surface water and groundwater supplies to maximize the yield of available water resources. The conjunctive-use program for Zone 40 includes

the use of groundwater, surface water, remediated water, and recycled water supplies. It also includes a financing program for the construction of a new surface-water diversion structure; surface-water treatment plant; water conveyance pipelines; and groundwater extraction, treatment, and distribution facilities. The Zone 40 WSMP evaluates several options for facilities to deliver surface water and groundwater to development within Zone 40, as well as the financing mechanisms to provide water to the 2030 Study Area.

Changed conditions regarding groundwater contamination and remediation efforts now underway in the County also affect water planning for Zone 40. Remediation efforts currently underway by Aerojet General Corporation (Aerojet) and Boeing (formerly McDonnell Douglas Corporation) have resulted in the East Sacramento County Replacement Water Supply Project.

## **RELATED GROUNDWATER SUPPLY PROJECTS AND AGREEMENTS**

Since approval of the Zone 40 WSMP (SCWA, 2005a), SCWA has pursued and is in various stages of planning several groundwater projects that would implement specific elements of the WSMP. In addition, SCWA has entered into agreements that require delivery of water to purveyors and for beneficial uses. These agreements are briefly summarized below. These projects and agreements are briefly summarized below.

### **CENTRAL SACRAMENTO COUNTY GROUNDWATER MANAGEMENT FORUM**

The Central Sacramento County Groundwater Forum was initiated in 2002 by the Water Forum Successor Effort to carryout a portion of the Water Forum's mission to develop a groundwater management program to protect the health and viability of the central Sacramento County groundwater basin for both current users and future generations.

The Central Sacramento County Groundwater Forum developed the Central Sacramento County Groundwater Management Plan (February 2006), which sets forth objectives for managing the groundwater basin underlying Zone 40 and establishes parameters for monitoring the performance of the management strategies. The forum is intended to adapt to changing conditions within the groundwater basin and to be updated and refined to reflect progress made in achieving the Central Sacramento County Groundwater Management Plan objectives.

### **EAST SACRAMENTO COUNTY REPLACEMENT WATER SUPPLY PROJECT**

Groundwater contamination emanating from the Aerojet project site, the Inactive Rancho Cordova Test Site, and the Mather Field site has significantly impacted groundwater resources in the Rancho Cordova area. In some instances, groundwater supplies have been impacted so severely that all wells within a purveyor's service area have been shut down. Aerojet and Boeing have been directed by various regulatory agencies to implement a groundwater remediation program that would stop the spread of contamination and perhaps remove it entirely. To ensure that the overall impact of groundwater remediation would not affect the estimated long term average annual pumping limit of the basin, SCWA has entered into agreements with Aerojet and Boeing to ensure that the remediated groundwater does not leave the basin.

The project includes: 1) extracting contaminated groundwater, 2) treating the contaminated groundwater to meet NPDES permit requirements, 3) discharging the treated groundwater to the American River, and 4) reusing the treated groundwater in the Central Basin. Reuse has been prioritized in the agreement as follows: 1) replacement of municipal groundwater supplies lost due to contamination, 2) water supply service to "Aerojet Lands," 3) new development in Zone 40, and 4) environmental uses.

Since the above agreements have been approved, additional agreements have been reached that more fully delineate how the replacement water will be used. These agreements include an agreement with EBMUD regarding use of the Folsom South Canal for delivery of replacement water supplies to Golden State Water Company and delivery of environmental water to the Cosumnes River, an agreement with SMUD on water quality in the Folsom South Canal, an agreement with Golden State Water Company for replacement water supply, and an agreement with The Nature Conservancy and South Sacramento County Agricultural Water Authority on delivery of environmental water to the Cosumnes River. Currently, no agreement exists between SCWA and California American Water on how much water will be needed to meet their replacement water supply needs.

## **ZONE 40 GROUNDWATER MANAGEMENT PLAN**

The SCWA prepared a groundwater management plan (SCWA 2004b) for Zone 40. Although groundwater management plans are typically prepared for entire groundwater basins (in this case the Central Basin), SCWA's groundwater management plan addresses only the boundaries of Zone 40, which encompasses most but not all of the Central Basin. The goal of the plan is to ensure a viable groundwater resource for beneficial uses, including water for adjacent purveyors; and agricultural, residential, industrial, and municipal supplies that support the WFA's coequal objectives of providing a reliable and safe water supply and preserving the fishery, wildlife, recreational, and aesthetic values of the lower American River. In addition, the plan promotes the enhancement of maintaining ecological flows in the Cosumnes River. The Zone 40 groundwater management plan is now superseded by the Central Sacramento County Groundwater Management Plan. However, before the Central Sacramento County Groundwater Management Plan, groundwater management within Zone 40 by SCWA was based on the Zone 40 groundwater management plan.

## **SURFACE WATER SUPPLIES FOR DRY YEARS**

In wet and normal water years, SCWA would divert surface water from the American and Sacramento Rivers consistent with the entitlement contracts described above. The underlying groundwater basin would be replenished in wet years as a result of this reliance on surface water. In dry water years, SCWA's surface water could be reduced based on recommended dry-year cutback volumes outlined in the WFA—those volumes that purveyors have agreed not to divert from the American River during dry years. During dry years, SCWA would increase groundwater pumping so that it could continue to meet customers' water demand, and it would implement a water-shortage contingency plan that would result in a 28% reduction in water demand (SCWA, 2005b).

## **GROUNDWATER SUPPLIES IN SCWA ZONE 40**

The SCWA currently exercises and will continue to exercise its rights as a groundwater appropriator and will extract water from the Central Basin for the beneficial use of its customers. As a signatory to the WFA, SCWA is committed to adhering to the long-term average sustainable yield of the Central Basin (i.e., 273,000 af/yr recommended in the WFA. Total groundwater pumping (i.e., urban and agricultural pumping) within the Central Basin is approximately 248,500 af/yr, of which approximately 59,700 af/yr is pumped within Zone 40 (agricultural demand, 21,900 af/yr; urban demand, 37,800 af/yr (SCWA, 2005a). The remaining groundwater is pumped by the City of Sacramento, Elk Grove Water Service, California American Water, Golden State Water Company, and private and agricultural pumpers. Projected groundwater pumping volumes from the Central Basin in 2030 would range from 235,000 af/yr to 253,000 af/yr for urban and agricultural demands (SCWA, 2005a). Of that amount, it is projected that SCWA Zone 40 would pump an average of 40,900 af/yr to meet urban water demand within Zone 40 through 2030 (SCWA, 2005a).

## **GROUNDWATER EXTRACTION AND TREATMENT - REMEDIATED GROUNDWATER**

Aerojet currently extracts and treats groundwater for contaminants at various groundwater extraction and treatment (GET) facilities at or near its property in Eastern Sacramento County. The GET facilities are operated under one or more directives from the USEPA, the Central Valley RWQCB, and DTSC. These directives require extraction of contaminated groundwater, treatment of the groundwater, and appropriate discharge of treated groundwater, principally to the American River. The GET facilities currently extract, treat, and discharge to the American River approximately 15,000 af/yr of GET-Remediated Water; the facilities are being expanded under government oversight over the next several years to extract, treat, and discharge more than 26,000 af/yr. Additionally, there are two other GET facilities (also under environmental agency oversight) that presently discharge to Morrison Creek, but that can discharge to the American River if new pipelines are constructed. One of the GET facilities discharging to Morrison Creek is operated by Boeing. Boeing and Aerojet are responsible parties to remediate groundwater migrating from portions of property formerly owned by Boeing and currently owned by Aerojet. Upon completion of all planned GET facilities, and if the water currently discharging to Morrison Creek is redirected to the American River through pipelines, more than 35,000 af/yr of treated groundwater would be discharged to the river. Approximately 15,000 af/yr of GET-remediated groundwater is currently discharged to the American River and is currently available for diversion at the Freeport Regional Water Project on the Sacramento River under the terms of an agreement between Aerojet and SCWA.

## **RELATED SURFACE WATER SUPPLY PROJECTS AND AGREEMENTS**

Since approval of the Zone 40 WSMP (SCWA 2005a), SCWA has pursued and is in various stages of planning several surface water projects that would implement specific elements of the WSMP. In addition, SCWA has entered into agreements that require delivery of water to purveyors and for beneficial uses. These agreements are briefly summarized below. These projects and agreements are briefly summarized below.

### **FREEPORT REGIONAL WATER PROJECT**

The FRWA was created by exercise of a joint-powers agreement between SCWA and EBMUD. The Freeport Regional Water Authority's basic purpose is to increase the reliability of water service for customers, reduce rationing during droughts, and facilitate conjunctive use of surface-water and groundwater supplies in central Sacramento County. The Freeport Regional Water Authority developed the Freeport Regional Water Project to meet the objectives of SCWA and EBMUD.

The Freeport Regional Water Project involves construction of a 185-million-gallon-per-day (mgd) intake facility and pumping plant located on the Sacramento River, a reservoir and water treatment plant (WTP), a terminal facility located at the point of delivery to the Folsom South Canal, a canal pumping plant located at the terminus of the Folsom South Canal, an aqueduct pumping plant and pretreatment facility near the Mokelumne Aqueducts/Camanche Reservoir area, and pipelines to deliver water from the intake facility to the Zone 40 Vineyard Surface WTP and to the Mokelumne Aqueduct.

The project is currently under construction and estimated to be operation in late 2009 or early 2010. Once operational, the Freeport Regional Water Project will provide SCWA with up to 85 mgd of surface water from the Sacramento River that would be conveyed by Freeport Regional Water Authority to SCWA's Vineyard Surface WTP. The remaining 100 mgd of the 185 mgd diverted from the Sacramento River would be conveyed past the Vineyard Surface WTP by EBMUD to the Folsom South Canal, which would convey the water to the Mokelumne Aqueduct for use within EBMUD's service area during dry years.

## **VINEYARD SURFACE WATER TREATMENT PLANT**

The SCWA is constructing the Vineyard Surface WTP and associated water supply facilities to provide potable water to existing and approved future development within the SCWA Zone 40 area. The Vineyard Surface WTP will be located west of the intersection of Florin and Excelsior Roads, at the northeast corner of Florin and Knox Roads in Sacramento County. Construction is estimated to be completed in 2011, with full buildout by 2029.

The objective of constructing the Vineyard Surface WTP is to provide capacity for treating 100 mgd of raw surface water and remediated groundwater, and to serve approved land uses in the Zone 40 service area. Water would be diverted from the Sacramento River via the FRWP facilities and conveyed to the Vineyard Surface WTP for treatment and delivery to SCWA Zone 40. After the water is treated at the Vineyard Surface WTP, it would be delivered to the project sites through the North Service Area Pipeline Project (NSAPP).

## **NORTH SERVICE AREA PIPELINE PROJECT**

Water would be conveyed from the Vineyard Surface WTP to the North Service Area via the NSAPP. The preferred alignment would begin at the Vineyard Surface WTP and continue east along Florin Road. At the intersection of Florin Road and Eagles Nest Road, the pipeline would head north along Eagles Nest Road, which transitions into Zinfandel Road at the intersection of Douglas Road. The pipeline continues north along Zinfandel Road to a storage tank and pump station just north of Douglas Road and adjacent to the east side of the Folsom South Canal. In addition to providing water supplies to the project (including the Cal-Am portion where wholesale Zone 40 water supplies would be delivered), the NSAPP would also serve the Mather, Sunrise Corridor, Sunrise-Douglas, and Westborough areas. The date that this pipeline would be in service is estimated as 2014.

## **ZONE 40 WATER SYSTEM INFRASTRUCTURE PLAN**

To build on the 2005 Zone 40 WSMP, SCWA prepared the Zone 40 Water System Infrastructure Plan (November 2006) (Zone 40 WSIP) that addresses how identified 2030 water supplies addressed in the Zone 40 WSMP would be allocated among users within its service area. The WSIP provides the most up-to-date information on Zone 40's water supplies, demands, and infrastructure; provides project-level detail that is necessary for implementation of the preferred pipeline alignment alternatives; and it also fills in the gaps of associated smaller infrastructure requirements, including a description of facility construction and phasing as well as operational requirements from existing conditions through ultimate buildout of the water system. As such, it is not a document that is formally adopted, and the plan is not required to go through environmental review pursuant to CEQA.

The Zone 40 WSIP divides the Zone 40 service area into three major subareas for planning purposes. From east to west, these areas are identified as the North Service Area, the Central Service Area, and the South Service Area. A portion of the City's planning area, including the areas identified as Mather, Rio del Oro, Sunrise Corridor, Sunrise-Douglas, and Westborough, are located within the boundary of the North Service Area.

## **2005 ZONE 41 URBAN WATER MANAGEMENT PLAN**

The 2005 Zone 41 Urban Water Management Plan (Zone 41 UWMP) (SCWA 2005b) was prepared by SCWA and adopted by the SCWA Board of Directors on December 6, 2005. The plan addresses water supply and demand issues, water supply reliability, water conservation, water shortage contingencies, and recycled-water usage for the areas within Sacramento County where Zone 41 provides retail water

services, including the Zone 40 service area and other areas outside of Zone 40 where Zone 41 has contracts to provide water (e.g., Zone 50, Sacramento Suburban Water District). Zone 41 is responsible for the operations and maintenance of all the water supply facilities within the defined service area and retails and wholesales water to its defined service area and to agencies where agreements are in place to purchase water from SCWA. The water demands for the proposed project, which were identified in the Zone 40 WSMP, are included in the Zone 41 UWMP.

Because SCWA's conjunctive-use groundwater program would be implemented only within Zone 40, the Zone 41 UWMP presents information about projected water supply and demand separately for areas within Zone 40 and areas outside of Zone 40. However, the Zone 41 UWMP does not specifically describe how projected future water supplies would be allocated within the Zone 40 region (e.g., how water would be allocated to the City of Rancho Cordova).

## **LOWER COSUMNES RIVER ENVIRONMENTAL AND WATER MANAGEMENT MOA**

The Memorandum of Agreement for the Management for Water and Environmental Resources Associated with the Lower Cosumnes River has been entered into by SCWA, the Southeast Sacramento County Agricultural Water Authority, and The Nature Conservancy. The goal of the memorandum of agreement (MOA) is to restore and maintain key functions of the Cosumnes River corridor while furthering conjunctive use in the agricultural areas between the American and Cosumnes Rivers and from the Cosumnes River to the southern boundary of Sacramento County. The signatories to the MOA seek to ensure the viability of both the agricultural economic base and ecosystems associated with the Cosumnes River. Through the MOA, the signatories are committed to working together to enhance conjunctive use within the region to reduce groundwater pumping and improve flow conditions in the Cosumnes River. The proposed project would make available approximately 5,000 af/yr to SCWA, which would make the water available to The Nature Conservancy. The Nature Conservancy would need to obtain the necessary agreements to divert the water from Folsom South Canal to the Cosumnes River for supplemental flows on a schedule that is beneficial for fisheries enhancement and groundwater recharge.

The Water Forum has defined conjunctive use as “the planned joint use of surface and groundwater to improve overall water supply reliability.” Since its formation, Zone 40 has had as its goal the development of a conjunctive-use water supply system. As such, the areas inside Zone 40 are served conjunctively with groundwater (pumped from the Central Basin), surface water, recycled water, and remediated water. Available surface-water supplies would be maximized in wet years; groundwater supplies would be maximized in dry years through increased pumping at SCWA's groundwater facilities. In all consecutive dry years, water-demand management programs would be implemented to a higher degree (e.g., greater conservation, reduced outdoor use) to reduce the potential impacts from increased extraction of groundwater.

The following discussion identifies and characterizes the water supply sources that will be used to meet projected demands within Zone 40 (not including GET-Remediated Water).

## **SMUD ASSIGNMENT OF CENTRAL VALLEY PROJECT WATER SUPPLY**

Under the terms of a three-party agreement (SCWA, SMUD, and the City of Sacramento), the City of Sacramento provides surface water to SMUD for use at two of SMUD's cogeneration facilities. SMUD, in turn, has assigned 15,000 af/yr of its CVP contract water to SCWA for municipal and industrial use. Each of these contracts remains in effect until they expire in 2010.

SMUD's WFA purveyor-specific agreements directs SMUD to assign a second 15,000 af/yr of surface water to SCWA for municipal and industrial uses, and to enable SCWA to construct groundwater



facilities to provide water needed to meet SMUD's demand of up to 10,000 af/yr at its cogeneration facility during water shortages in dry years.

## **CENTRAL VALLEY PROJECT WATER (PUBLIC LAW 101-514 [“FAZIO WATER”])**

In April 1999, SCWA executed a CVP water-service contract pursuant to Public Law 101-514 (referred to as “Fazio water”) that provides a permanent water supply of 22,000 afy, with 15,000 afy allocated to SCWA and 7,000 afy allocated to the City of Folsom. SCWA began taking delivery of the Fazio water in 1999 at the City of Sacramento's Franklin connection through a long-term wheeling agreement with the City of Sacramento. This contract remains in effect until it expires in 2024. Pursuant to the biological opinion issued by NMFS, the water diversion amount was limited to 7,200 afy until new fish screens were installed at the City of Sacramento's Sacramento River water treatment plant. Construction of a fish screen was completed in 2004 for the City of Sacramento's municipal intake facility along the Sacramento River, and now the full contract amount of 15,000 afy is available and authorized through the contract.

## **SCWA'S PLANNED ENTITLEMENTS TO SURFACE WATER SUPPLY**

### **APPROPRIATIVE WATER SUPPLIES**

SCWA has submitted an application to the SWRCB for appropriation of water from the Sacramento River (the County Board of Supervisors authorized submittal of this application on June 13, 1995). This water is considered “intermittent water” that typically would be available during normal years or wet years (i.e., years when rainfall, and hence water supply, are greater than average). This water could be used to meet system demand, and it could possibly be used for future groundwater recharge through recharge-percolating groundwater basins or direct injection of surface water into the aquifer. The maximum, minimum, and average annual use of appropriative water is 71,000 af, 0 af, and 21,700 af, respectively. In close to 30% of the years, 12,000 af or less of appropriative water is used. The FRWP and Vineyard Surface WTP would be used to deliver the surface water.

## **CITY OF SACRAMENTO'S AMERICAN RIVER PLACE OF USE AGREEMENT**

The SCWA is pursuing an agreement under which the City of Sacramento would wholesale American River water to SCWA for use in a portion of the SCWA 2030 Study Area that lies within the City of Sacramento's American River POU. The estimated long-term average volume of water that would be used by SCWA within this POU would be approximately 9,300 afy.

## **3.3.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES**

The three alternatives are evaluated for their impacts on water resources, including hydrology, surface and groundwater quality, and surface and groundwater supply.

### **3.3.4.1 THRESHOLDS OF SIGNIFICANCE**

The alternatives were evaluated for impacts related to water issues. The thresholds for determining the significance of impacts for this analysis are based on both construction and long-term impacts to hydrology, surface and groundwater quality, and surface and groundwater supply. The thresholds for determining the significance of impacts for this analysis encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. The Proposed Action and alternatives under consideration were determined to result in a significant

impact related to hydrology, water quality, water supply, and groundwater if they would result in any of the following:

- Change the rate and amount of surface runoff, such that post-development peak flows exceed pre-development peak flows, a violation of County guidelines.
- Construction or long-term discharges into surface waters or other alterations of surface water quality which violate water quality standards or waste discharge requirements.
- Substantial changes in the groundwater surface contours in and around the Elk Grove cone of depression.
- Substantial changes in the groundwater surface contours in and around the proposed North Vineyard Well Field.
- Substantial changes in the groundwater surface contours in and around the vicinity of known contaminant plumes.
- Substantial increases in groundwater movement rates such that the travel times of known contaminant plumes are affected.
- Substantial vertical migration of lower quality (higher TDS) groundwater in Aquifer 2 upwards to Aquifer 1 (vertical elevation differentials, gradients, and flow rates). It is a Sacramento County Water Resources Department goal to maintain the groundwater in Aquifer 1 at an elevation 10 feet higher than the piezometric surface elevation in Aquifer 2. The objective is to minimize or prevent migration of lower quality (that is, higher TDS) groundwater in Aquifer 2 upwards into Aquifer 1.
- North Vineyard Well Field Groundwater Supply not meeting California SDWA Standards set forth in Title 22 of the California Code of Regulations.
- Groundwater production activities which exceed the Water Forum Plan agreed-upon safe yield for the South County groundwater basin, and an associated decline in the groundwater surface stabilization levels identified in the Water Forum Plan.
- Reasonable likelihood of implementation of long-term water supply projects.

With regard to changes in groundwater elevations, the County does not have an adopted quantitative threshold to determine what constitutes a significant change in groundwater surface elevations. However, the Sacramento County Water Resources Department has historically used a 10-foot drop in groundwater elevation as a generally meaningful threshold indicator of unacceptable groundwater response, because certain parameters (e.g., groundwater lift (power) costs, existing well and pump depth) can become noticeably affected at this level. As such, a 10-foot drop in groundwater elevation may be noticeable to operators of existing shallow domestic wells, in that such a decline in groundwater levels could increase groundwater pumping costs and/or require the deepening of existing wells to obtain water. Therefore, for purposes of this EIS, a decline of 10 feet or greater in groundwater elevation is considered to have a potentially significant impact upon groundwater conditions.

### 3.3.4.2 ANALYSIS METHODOLOGY

The water supply analysis summarized below incorporates by reference the discussion in the *Sunrise-Douglas Community Plan/Sunridge Specific Plan Final Environmental Impact Report* (County of Sacramento, 2001). The analysis summarized in this chapter is based on modeling runs using the Sacramento County Integrated Groundwater and Surface Water Model (IGSM). The Sacramento County IGSM was originally developed as a site-specific model to investigate groundwater resources underlying the City of Sacramento's authorized POU for its Sacramento River and American River surface water rights. The Sacramento County IGSM was subsequently expanded on behalf of SCWA to investigate groundwater on a countywide basis. The model in its current form was developed to complete groundwater impact analyses as part of the Water Forum Plan effort. The Sacramento County IGSM continues to be relevant and appropriate for this assessment.

Groundwater and surface water modeling was conducted using the IGSM for the *Sunrise-Douglas-Community Plan/Sunridge Specific Plan Final Supplemental Water Supply Investigation (SWSI)*, Montgomery Watson (August, 2000). Two versions of the Sacramento County IGSM were used for the analysis: the "1990 Water Demand" model and the "2030 Water Forum Plan Solution" model. These models were obtained from the Sacramento County Water Resources Department (WRD) and the results were analyzed in the Sunridge EIR.

The Sunridge Properties represent only a portion of the water usage modeled in the SWSI. The SWSI modeled not just the Sunridge Specific Plan Area, but the larger Sunrise-Douglas Community Plan Area, as well as current demands from Mather Field, Security Park and the Sunrise Corridor. The Sunridge Properties involve the development of 7,829 equivalent dwelling units (EDUs). The Sunridge Specific Plan Area includes the development of 11,358 EDUs. The Sunrise-Douglas Community Plan includes the development of an additional 18,040 EDUs. The Sunridge Specific Plan Area represents 38.6% of the EDUs for the Sunrise-Douglas Community Plan (11,358 of 29,398 EDUs). In addition, the seven demand scenarios included different permutations and portions of these projects.

Consideration of the modeling results must also take into account that the project alternatives represent a relatively small portion of the Sunrise-Douglas Community Plan water supply that was modeled. The Sunridge Properties would involve the development of only 18% of the Sunrise-Douglas Community Plan dwelling units. The No Action Alternative and Reduced Footprint Alternative represent even smaller numbers of dwelling units, 11% and 14%, respectively of the Sunrise-Douglas Community Plan dwelling units.

### MODELING APPROACH

Groundwater impacts are defined as incremental changes between groundwater conditions resulting from a "baseline condition" and groundwater conditions resulting from various demand/groundwater extraction scenarios. Seven demand scenarios were defined and analyzed in the SWSI. The demand scenarios analyzed represent benchmarks in a logical progression of total annual average water demand as replacement water supplies are provided to the Mather Field and Sunrise Corridor areas for capacity lost as a result of groundwater contamination in those areas, and as buildout of the eastern portion of Sacramento County (which includes the Sunrise-Douglas Community Plan/Sunridge Specific Plan Area) occurs. Each demand scenario was modeled and compared to a baseline condition in the SWSI in order to define degree of impact.

Subsequent to release of the SWSI, the WRD determined that they preferred to separate discussion of the proposed water supply facilities in east Sacramento County into two categories: 1) facilities associated with replacing groundwater supplies within the Sunrise Corridor and Mather Field lost due to

groundwater contamination migrating off the Aerojet and Boeing properties, and 2) facilities associated with developing new groundwater (and surface water) supplies to meet growth. The purpose was to keep separate the costs of the facilities required to replace the WRD's existing water delivery capability (specifically for the Sunrise Corridor and Mather Field) damaged by groundwater contamination.

The decision to separate discussion of new water supply facilities from replacement supply facilities does not, however, impact the findings, conclusion, or recommendations of the groundwater modeling analyses. The same "stress" is placed on the groundwater basin (that is, the same volume of groundwater is extracted) and the treated groundwater is delivered to the same areas. Demand scenarios 5 and 5a address the cumulative buildout (year 2030) water amounts for the region. Consequently, the findings, conclusions, or recommendations of the groundwater modeling analyses are valid over the range of groundwater extraction amounts evaluated.

The demand scenarios from the SWSI have been redefined as described below to reflect delivery of all initial water supplies from the North Vineyard Well Field to the Sunrise-Douglas Community Plan/Sunridge Specific Plan project site, consistent with the intent of separating discussion of replacement water supplies from new growth water supplies.

## **DEMAND SCENARIO 1**

Demand Scenario 1 assumes the well field and associated facilities are sized to meet the County's initial water demands at the SRSP area. Demand Scenario 1 assumes that groundwater provided by the proposed well field is the sole source of potable water. The annual average volume of groundwater that would be extracted at the proposed well field would be 2,265 afy. This amount of water would support a portion (approximately 3,020) of the EDUs within the SRSP area.

## **"SNAPSHOT IN TIME" GROUNDWATER CONDITIONS**

The "Snapshot in Time" groundwater condition identifies groundwater levels as they existed in the fall of 1998. Groundwater levels in and around the Elk Grove cone of depression are approximately -50 to -60 feet below mean sea level (msl). Groundwater levels in and around the proposed well field are approximately -20 feet below msl and groundwater levels in and around the Sunrise-Douglas Community Plan/Sunridge Specific Plan Area vary from +10 to +20 feet above msl. In general, groundwater flow near the Elk Grove cone of depression flows toward the center of the cone. Groundwater flow near the Sunrise-Douglas Community Plan/Sunridge Specific Plan Area and the proposed NVWF generally flows from the east to the southwest toward the Elk Grove cone of depression.

## **EXISTING AND CUMULATIVE BASELINE CONDITIONS**

Two different "baseline conditions" were utilized to identify and evaluate potential impacts of the proposed project on groundwater elevations. The first "baseline condition" represents existing conditions without development of the proposed project (the "Existing without Project" condition). The second "baseline condition" represents projected year 2030 groundwater conditions with projected growth (according to the Sacramento County 1993 General Plan Update) and implementation of the agreed upon Water Forum conjunctive use measures, but without development of the proposed project (the "Cumulative without Project" condition). The Cumulative without Project condition is described and analyzed in Chapter 4.

## **“EXISTING WITHOUT PROJECT” BASELINE CONDITION**

The “Existing without Project” baseline condition is based on a groundwater model run with year 1990 levels of land use and water demand. The result is an estimate of the quasi-equilibrium state the groundwater basin would achieve if land use and water demand in the region were held constant at year 1990 levels. [Note: the groundwater model can be used to define a baseline condition associated with any prospective level of development as long as the data are available to conduct such an analysis.] The year 1990 groundwater model was also used by the Water Forum to establish the anticipated future quasi-equilibrium state of the groundwater basin assuming that land use, water demand, and groundwater extraction existing during development of the Water Forum Plan were to remain unchanged (that is, the “Existing without Project” baseline condition.) The SWSI used the 1990 model to maintain consistency with the Water Forum analyses.

The year 1990 was used in the Water Forum because that was the latest year in which the comprehensive data required to conduct the analyses were available. [Note: At the time of the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR preparation, data were available through the year 1995. Those data were used to validate the results of the Sacramento County IGSM.] The Water Forum also identified “Cumulative without Project” baseline conditions for the years 2000, 2010, 2020, and 2030 based on projected growth (as identified in the Sacramento County 1993 General Plan Update) to evaluate the effectiveness of the conjunctive use measures ultimately agreed upon in the Water Forum.

Comparative analyses conducted for the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR indicate the incremental impact of the 10,000 af/year volume of groundwater extraction anticipated for the proposed project is similar regardless of the projected level of development and groundwater extraction elsewhere. That is, regardless of the “baseline condition” selected for evaluation of the proposed project, the incremental impacts on groundwater condition of a 10,000 af/yr extraction at the proposed well field site are similar. Incremental impact analyses conducted for the Water Forum yielded similar results.

The conjunctive use plan adopted by the Water Forum provides mitigation measures for impacts to the groundwater basin (relative to the “Existing without Project” baseline condition) resulting from planned growth in Sacramento County pursuant to the 1993 General Plan Update. That conjunctive use plan served as the basis for the Water Forum Plan’s programmatic Environmental Impact Report (State of California Clearinghouse Number 9582041) certified by the two lead agencies (the City of Sacramento and the County of Sacramento) in December 1999. The impacts to the groundwater basin (and the effectiveness of the mitigation measures) were determined by comparing the quasi-equilibrium states provided an estimate of the potential impact of the proposed well field relative to existing conditions. It also permitted evaluation of the proposed well field within the context of the Water Forum conjunctive use plan.

Applying the year 1990 model with and without the proposed well field in operation and comparing the resulting quasi-equilibrium states provided an estimate of the potential impact of the proposed well field relative to existing conditions. It also permitted evaluation of the proposed well field within the context of the Water Forum conjunctive use plan.

## **MODELING RESULTS**

Information presented in the groundwater modeling analysis is important to assessing the impacts of the proposed project, under varying groundwater extraction amounts, on the following:

- Vertical changes in groundwater elevations

- Vertical difference in elevation between Aquifer 1 and Aquifer 2
- Time it takes for known contaminant plumes to reach the proposed North Vineyard Well Field

The results of the groundwater modeling analysis presented in the SWSI are in the impact analyses.

### 3.3.4.3 IMPACT ANALYSIS

Under the No Action Alternative, it is assumed that 63% of the Proposed Project Alternative development would take place. Under the Reduced Footprint Alternative, 77% of the Proposed Project Alternative development would take place. The impact analyses for the Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative vary only in degree, corresponding directly to the anticipated level of development. The impacts to water issues based on these varying levels of development do not result in impacts that are considerably different for each alternative. Therefore, separate impact analyses have not been developed for each alternative.

**IMPACT3.3-1 - Potential for an increase in the rate and volume of drainage runoff from the site.** *Construction and long-term impacts may increase the rate and volume of drainage runoff from the site.*

**Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative** - The six properties lie in the headwaters of Laguna and Morrison Creeks, and in an area with a large number of vernal pools, due to local soil properties. Because of the nature of the project, in particular the high percentage of each property that will be disturbed, contoured, and the drainage system altered, changes to the local hydrology can be expected.

The peak flows produced by development of the Sunrise-Douglas Community Plan Area are lower than the ultimate buildout conditions model prepared by Montgomery-Watson. The ultimate buildout model assumes that the entire Morrison and Laguna Creek watersheds are developed, while the project model develops only a portion of the watershed. By developing only a portion of the watersheds, lower post-development peak flows are produced.

The proposed mitigation for reducing post-development flows to pre-development limits is 14, in-line, on-site detention facilities ranging from 5 to 53 acres in size. Nine of these would be servicing Morrison Creek, and the remaining five would be servicing Laguna Creek. A total of 349 af of flood detention storage are proposed along Morrison Creek, while 129 af of flood storage are proposed along Laguna Creek.

The detention facilities which would occur under each of the three alternatives would reduce peak post-development flows to at least pre-development levels; and at two of the three Folsom South Canal creek crossings, the peak post-development flows would be detained even further such that they do not exceed the capacity of the overchutes.

The proposed detention facilities which would be constructed under each of the three alternatives would be incorporated into joint use park/detention facilities and some stand-alone facilities. During the design phase of individual villages within the Specific Plan area, coordination would be maintained with the appropriate park district regarding joint-use of the facilities. Park district approval would be obtained prior to construction of such facilities. In addition, as individual villages are designed, coordination would be maintained with Sacramento County WRD regarding wet or dry extended basins. All facilities designed for the Specific Plan area would comply with the County's Comprehensive Stormwater Management program. County approval would be obtained prior to construction of detention facilities.

Development of the, Sunridge Specific Plan Area would increase the rate and volume of drainage runoff from the site. However, implementation of drainage and detention improvements which ensure that post-development peak flows are reduced to at least pre-development levels would mitigate potential drainage and flooding impacts to a **less than significant** level.

#### Mitigation Measure 3.3-1. Implementation of Drainage Study Recommendations

Developers within the project area will implement the improvements described in the "Final Master Drainage Study for the Sunrise-Douglas Community Plan Area" (Spink Corporation, October 16, 1998) as amended by the "Amendment to Final Master Drainage Study, Sunrise-Douglas Community Plan Area" (Amendment) (MHM Engineers & Surveyors, October 19, 2001). Such improvements will be designed to ensure that post-development peak flows do not exceed existing peak flows and do not exceed the capacity of the two Folsom South Canal overchutes at Lower Morrison Creek to the satisfaction of the County Water Resources Division (WRD). Construction of the improvements may be phased as described in the Final MDS and subject to the approval of the WRD, so long as the project proponent(s) provide hydrologic/hydraulic analyses which demonstrate that the phased improvements will reduce peak flows to at least pre-development levels of and to the capacity of the two Folsom South Canal overchutes at lower Morrison Creek to the satisfaction of the WRD.

Detailed plans for the design and construction of all proposed drainage, flood control and water quality improvements, consistent with the Final MDS and Amendment will be submitted to the County WRD for review and approval.

**IMPACT3.3-2 - Potential for discharges that affects surface water quality.** *Construction discharges and long-term urban runoff impacts may results in discharges that impact surface water quality.*

**Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative** -All three alternatives have the potential to impact surface water quality due to entrained sediments and pollutants in construction and urban runoff. There are no data available to describe the existing quality of site runoff. However, it can be assumed that the existing agricultural/grazing uses would likely yield far less heavy metals in runoff than could be expected in urban runoff. Similarly, water quality would be expected to improve for some constituents, notably sediment and nutrients, which are the most common pollutants associated with agriculture.

The SWRCB has established numerical criteria for all inland surface waters for certain constituents. These criteria would be applicable to the water body identified to receive runoff from a proposed development site. Urban stormwater discharges are regulated and permitted as a part of the NPDES. The NPDES stormwater management program calls for implementation of "BMPs" to the "maximum extent practicable." BMPs consist of structures or practices which control non-point sources of pollution which include agricultural runoff, urban runoff, and runoff from construction sites.

Sacramento County has obtained an NPDES permit from the CVRWQCB. Implementation and enforcement is achieved through the existing County Land Grading and Erosion Control Ordinance, with which the project must comply during the period of construction. A Stormwater Pollution Prevention Plan would be required for each subdivision design to address erosion control and water quality issues after construction, during the life of the project.

Source control measures are required for this project in accordance with *Volume 5 of the Draft City/County Drainage Manual—Manual of Standards for Design of New Development On-Site Stormwater Quality Control Measures*. Source control measures on the improvement plans would include provision for a permanent storm drainage message at each storm drain inlet that says "No

Dumping-Flows To Creek” (or other approved message). Other source control measures(s) should also be used in accordance with specific commercial, industrial, or multi-family residential activities referenced in Volume 5 of the Drainage Manual. The final design of the proposed source controls would be approved by the Chief of Water Resources.

The proposed water quality basins would settle out sediments and some contaminants from the project’s urban runoff before it is discharged from the site. In addition to the proposed basins, proposed drainage channel improvements would be trapezoidal with grassy swales for low flows to aid in water quality enhancement.

Complying with the county grading and erosion ordinances, and county and state stormwater quality control requirements, is expected to reduce the project’s surface water quality impacts to **less than significant**.

#### Mitigation Measure 3.3-2. Provide stormwater quality source and treatment measures

Developers within the project area will provide stormwater quality source and treatment measures consistent with Volume 5 of the City/County Drainage Manual. The final design of such source and treatment control measures will be subject to the approval of the County WRD.

**IMPACT3.3-3 - Potential for changes in groundwater elevations around the Elk Grove cone of depression.**  
*Groundwater pumping from the North Vineyard Well Field may lower the groundwater elevations around the Elk Grove cone of depression.*

**Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative** -Under Demand Scenario 1, groundwater elevations in and around the Elk Grove cone of depression would remain essentially unchanged as a result of the proposed well field under the three alternatives. Impacts to groundwater elevation around the Elk Grove cone of depression under these scenarios would be considered **less than significant**.

The Sacramento County IGSM estimates groundwater and piezometric surface elevations for Aquifers 1 and 2 respectively. Elevation contour maps were generated to illustrate groundwater conditions at two representative points in the 70-year hydrologic period of record; at the end of simulation water year 15 and at the end of simulation water year 63 (water years extend from October 1 of one year through September 31 of the subsequent year).

Simulation year 15 occurs at the end of a drought sequence and is representative of the basin in a high stressed state. Conversely, year 62 occurs at the end of a wet period and is representative of the basin at the end of a recovery period. “Dry year” and “wet year” contour maps, at the end of year 15 and 62 respectively, were developed for the baseline condition and for each demand scenario for both Aquifers 1 and 2. In addition, “difference” maps were developed that illustrate the incremental change between impacts to the basin under the baseline condition and under each water demand scenario. These maps were presented in the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR.

## **BASELINE ANALYSIS**

Through groundwater modeling, wet and dry groundwater elevation contours were plotted for Aquifer 1, and piezometric surface elevation contours were plotted for Aquifer 2 under the (Cumulative without Project) baseline condition (year 2030 without implementation of the water supply plan). An approximate 30 ft difference in elevation between wet years and dry years occurs in and around the Elk Grove cone of depression for both Aquifer 1 and Aquifer 2.



Comparison of baseline condition wet and dry year contours with “Fall 1998 Snapshot in Time” groundwater surface elevation indicates that some portions of the analysis area are expected to slightly decline through the year 2030, even with implementation of the Water Forum Agreement. The groundwater cone of depression in Elk Grove will deepen, particularly in dry years, by approximately 40 feet under baseline conditions. However, in other portions of the analysis area groundwater elevations are expected to stabilize. For example, groundwater elevations in and around the proposed well field will fluctuate within the range of current conditions (groundwater elevations should be higher in wet years and lower in dry years). Similarly, groundwater elevations in the eastern portion of the analysis area should fluctuate in the range of current conditions.

Groundwater flow in Aquifer 1 generally trends toward the Elk Grove cone of depression with the American, Sacramento and Cosumnes Rivers acting as sources of recharge for both wet and dry years. The piezometric surface in Aquifer 2 shows a uniform gradient of approximately 10 feet per mile in both wet and dry years.

## DEMAND SCENARIO 1 ANALYSIS

Under Demand Scenario 1, wet and dry year groundwater elevations in and around the Elk Grove cone of depression would differ by 20 to 30 feet for Aquifer 1, and piezometric elevations would differ by about 30 feet for Aquifer 2. The magnitude of these fluctuations between the wet and dry years is approximately the same as that of baseline conditions for all three alternatives.

Under fall 1998 conditions, groundwater levels near the Elk Grove cone of depression were approximately -60 feet msl, and under baseline conditions without implementation of the project, groundwater elevations are -100 feet msl. Implementation of Demand Scenario 1 would also result in groundwater levels around -100 feet msl. These elevations do not exceed the groundwater stabilization levels identified in the Water Forum Plan. Therefore, impacts to groundwater levels in and around the Elk Grove cone of depression under Demand Scenario 1 would be **less than significant** for all three alternatives.

### Mitigation Measure 3.3-3. Pumping restrictions

The City of Rancho Cordova will not grant entitlements for urban development within the Sunrise-Douglas Plan Area (i.e. subdivision maps, parcel maps, use permits, building permits, etc.) unless agreements and financing for supplemental water supplies are in place.

In order to avoid potentially significant adverse impacts on existing shallow domestic wells and on known contaminant plumes, groundwater production from the North Vineyard Well Field will not exceed 10,000 af/yr or an amount that would result in no more than a 10-foot decline in regional groundwater surface elevations from existing conditions in the vicinity of the well field, whichever occurs first. Such 10 foot decline will relate to a decrease in groundwater elevations from what groundwater elevations in and around the well field would have been absent implementation of the proposed well field. For purposes of this mitigation measure groundwater elevations absent the Project well are defined as the 70-year hydrologic trace of groundwater elevations associated with the IGSM Static Baseline Model 2000 presented in the Baseline Conditions for Groundwater Yield Analysis Final Report (Montgomery Watson, 1997). Use of this hydrologic trace accounts for fluctuations in groundwater elevations resulting from changing hydrologic conditions. These limitations on the volume of groundwater consumption will remain in place unless the SCWA Board of Directors determines in a public hearing that: (1) the additional groundwater production (beyond the 10,000 acre-feet annually (afa) or 10-foot drop limit) is acceptable and consistent with the goals of the Zone 40 Conjunctive Use Program and the Water Forum Plan; (2) the additional groundwater extraction (beyond the 10,000 afa or 10-foot drop limit) will not

substantially affect the migration of known contaminant plumes; and (3) impacts to shallow domestic wells in the vicinity of the well field resulting from the additional groundwater extraction (beyond the 10,000 afa or 10-foot drop limit) will be adequately mitigated. Such mitigation might include redrilling or replacement of existing domestic wells or abandonment of existing domestic wells and connection to the public water system.

**IMPACT3.3-4 - Potential for changes in groundwater elevations adjacent to the proposed well field.**

*Groundwater pumping from the North Vineyard Well Field may reduce the groundwater elevations adjacent to the proposed well field.*

**Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative** - Groundwater elevations in the vicinity of the proposed North Vineyard Well Field would decline by 10 feet or less relative to the baseline under Demand Scenario 1. Therefore, impacts under these scenarios would be **less than significant** for all three alternatives.

### **BASELINE ANALYSIS**

With increased development in Sacramento County, groundwater elevations in some portions of the analysis area are expected to slightly decline through the year 2030, even with implementation of the Water Forum Agreements. However, groundwater elevations in and around the proposed well field would fluctuate in the range of current conditions, that is, groundwater elevations are expected to be higher in wet years and lower in dry years.

### **DEMAND SCENARIO 1 ANALYSIS**

Modeling indicated that in the vicinity of the proposed well field, groundwater elevations of Aquifer 1 would be about 30 feet lower in dry years as compared to wet years under Demand Scenario 1. Aquifer 2 shows a 25-foot difference under the same conditions. The magnitude of these fluctuations between wet and dry years is approximately the same as that estimated under the baseline condition for all three alternatives.

Comparison of Demand Scenario 1 to the baseline condition shows that groundwater elevations in Aquifer 1 in and around the proposed well field would be 2 feet lower than under baseline conditions in dry and wet years. Piezometric surface elevations in Aquifer 2 in wet and dry years would be approximately 8 to 10 feet lower than baseline conditions. The estimated 2-foot decline in Aquifer 1 is the most relevant because domestic groundwater wells are typically completed in Aquifer 1. Because groundwater levels would decrease slightly in and around the proposed well field, and would not exceed a 10-foot drop in groundwater levels, consistent with County goals, groundwater impacts in that area would be considered **less than significant** for all three alternatives.

### **Mitigation Measure 3.3-4. Well Siting**

In order to minimize the potential for localized dynamic draw down impacts upon existing shallow domestic wells in the immediate vicinity of the proposed North Vineyard Well Field wells, siting of the North Vineyard Well Field municipal groundwater wells will maintain a minimum 800-foot distance from existing private domestic wells to the extent that it is practical and feasible.

**IMPACT3.3-5 - Potential for changes in groundwater elevations and around known contaminant plumes.**

*Groundwater pumping from the North Vineyard Well Field may reduce the groundwater elevations in and around known contaminant plumes.*

**Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative** - The proposed North Vineyard Well Field would have no appreciable impacts on groundwater conditions in and around known contaminant plumes under Demand Scenario 1.

Table WS-2 summarizes the difference in groundwater and piezometric surface elevations for Aquifers 1 and 2 in wet and dry years for each of the demand scenarios compared to baseline conditions at the location of the nearest known contaminant plume (Site 7 VOC Plume).

Aquifer 1 groundwater elevations in and around known contaminant plumes remain largely unchanged under Demand Scenario 1. At some locations, minor impacts versus the baseline condition are predicted. Potential impacts would be addressed by ongoing and planned remediation efforts with coordination.

Aquifer 2 piezometric surface elevations in and around known contaminant plumes also evidence minor impacts. An increase in piezometric elevation could result in the migration of groundwater from Aquifer 2 to Aquifer 1; however, these impacts would be accommodated by ongoing and planned remediation efforts with coordination, therefore impacts under the three alternatives is **less than significant**.

Mitigation Measure 3.3-5. No mitigation is required for this impact.

**IMPACT3.3-6 - Potential for changes in rate of contaminant plume migration..** *Groundwater pumping from the North Vineyard Well Field may change the rate of contaminant plume migration at known contaminant plumes.*

**Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative** - Under worst case conservative conditions (i.e., assuming no remediation of known contaminant plumes occurs) the average estimated travel times from known contaminant plumes to reach the proposed well field site would be at least 50 years under Demand Scenario 1, similar to what would occur under baseline conditions. Therefore, contaminant plume migration under these scenarios would be **less than significant** for all three alternatives.

The objective of the SWSI was to evaluate the likelihood of whether known contaminant plumes, described in detail in Section 3.10 Hazardous, Toxic, and Radioactive Waste, could migrate into the groundwater underlying the proposed well field. The known contaminant plumes evaluated include:

- GET F Sprayfield – approximately 7.0 miles northeast of the well field
- Aerojet “Beta Complex” – approximately 6.0 miles northeast
- Mather Field AC & W site – approximately 4.25 miles northeast
- Kiefer Landfill – approximately 6.0 miles east

Travel times were estimated by applying average horizontal flow rates and average vertical flow rates for different geographic locations within the analysis area. It should be noted that the flow rate varies along the flow path between the leading edges of known contaminant plumes and the location of the proposed well field.

## **BASELINE ANALYSIS**

Based on the average flow rates, estimated travel times for contaminants originating from any of the known contaminant plumes referenced above to the proposed well field are greater than 50 years. Estimated travel times for plumes that are more distant are typically in excess of 100 years.

## DEMAND SCENARIO 1 ANALYSIS

Based on the average flow rates, estimated travel times for contaminants originating from any of the known contaminant plumes referenced above to the proposed well field would be greater than 50 years for Demand Scenario 1. Estimated travel times for plumes that are more distant are typically in excess of 100 years. Because these travel times are the same or slower than what would occur under baseline conditions, impacts related to contaminant migration would be **less than significant** for all three alternatives.

Mitigation Measure 3.3-6. No mitigation is required for this impact.

**IMPACT3.3-7 - Potential migration of lower quality (higher TDS) groundwater in Aquifer 2 up into Aquifer 1.** *Groundwater pumping from the North Vineyard Well Field may result in the migration of lower quality (higher TDS) groundwater in Aquifer 2 up into Aquifer 1*

**Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative** - No substantial migration of lower quality (higher TDS) groundwater from Aquifer 2 to Aquifer 1 is anticipated for the analysis area under any of the demand scenarios. Therefore, this impact is considered to be **less than significant** for all three alternatives.

It is a WRD goal to maintain groundwater levels in Aquifer 1 approximately 10 feet higher than piezometric surface elevations in Aquifer 2. The objective is to minimize or prevent, migration of lower quality (that is higher TDS) groundwater in Aquifer 2 upwards into Aquifer 1.

Groundwater elevations in Aquifer 1 are typically higher than the piezometric surface in Aquifer 2 throughout the analysis area under baseline conditions and all demand scenarios. Although the WRD goal of maintaining a 10-foot differential would not be met in all locations, a relatively constant downward gradient from Aquifer 1 to Aquifer 2 would occur under demand scenario 1. Because substantial migration of lower quality (higher TDS) groundwater from Aquifer 2 to Aquifer 1 would not occur, this impact is considered to be **less than significant** for all three alternatives.

Mitigation Measure 3.3-7. No mitigation is required for this impact.

**IMPACT3.3-8 - Potential for exceedance of drinking water standards.** *Groundwater from the North Vineyard Well Field may exceed drinking water standards set forth in Title 22 of the California Code of Regulations.*

**Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative** - Groundwater extracted from the North Vineyard Well Field would meet California public drinking water standards under all demand scenarios. Some treatment for iron and manganese may be required to meet California public drinking water quality standards. These are aesthetic rather than health-related impacts. Therefore, this impact would be considered **less than significant** for all three alternatives.

The previously proposed water supply plan for the Sunrise-Douglas Community Plan/Sunridge Specific Plan project (addressed in the March 1999 Draft EIR) included extraction of groundwater from a well field on the Sunrise-Douglas Community Plan/Sunridge Specific Plan project site. Comments on the March 1999 Draft EIR from various water resource and regulatory agencies expressed concerns regarding the potential migration of existing contaminant plumes from adjacent properties into the groundwater underlying the Sunrise-Douglas Community Plan/Sunridge Specific Plan project area. Representatives from DHS (now CDPH) indicated their probable refusal to issue potable use permits for groundwater extracted from beneath the Sunrise-Douglas Community Plan/Sunridge Specific Plan Area, even with

wellhead treatment. DHS offered the same opinion for groundwater underlying Mather Field, the Sunrise Corridor Water Maintenance District, and the Citizens Water Resources Security Park franchise area.

In response to these concerns, the applicants revised the project's proposed water supply plan to obtain groundwater from an off-site (North Vineyard Well Field) well field rather than from beneath the Sunrise-Douglas Community Plan/Sunridge Specific Plan project area. As noted previously, the average estimated travel times from known contaminant plumes to reach the proposed off-site (North Vineyard) well field would be at least 50 years under Demand Scenario 1, similar to what would occur under baseline conditions. Note that the estimated travel times for contaminant plumes are conservative, in that they are based on the assumption that no remediation of contaminant plumes occurs.

DHS indicated in a letter to the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR preparers that they believe the proposed North Vineyard Well Field would provide a safe supply of drinking water for the indefinite future (Zuccaro, February 9, 2001). On July 3, 2001, DHS reiterated its position on the viability of groundwater extraction wells at the Eagles Nest and the Sunrise-Douglas Community Plan/Sunridge Specific Plan sites for use as potable supplies (Zuccaro, July 3, 2001).

The proposed North Vineyard Well Field would extract groundwater from the deeper aquifer, which typically requires treatment for the reduction of iron and manganese concentrations that exceed Title 22 drinking water quality secondary standards related to aesthetic concerns. Elevated levels of iron and manganese do not pose a health hazard but may result in odor, taste, and color problems and staining of plumbing fixtures and laundry.

Based on the DHS letters the proposed North Vineyard Well Field would provide a safe supply of drinking water for the indefinite future, although some treatment for iron and manganese may be required to meet Title 22 secondary (i.e., aesthetic, not health-based) water quality standards (Zuccaro, 2001a,b). Therefore, the potential for the proposed North Vineyard Well Field groundwater supply to exceed Title 22 drinking water standards would be considered **less than significant** for all three alternatives.

Mitigation Measure 3.3-8. No mitigation is required for this impact.

**IMPACT 3.3-9** – Changes in groundwater elevation adjacent to the proposed well field. *Groundwater pumping from the North Vineyard Well Field may lower groundwater elevations adjacent to the proposed well field.*

**Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative** - Groundwater elevations are expected to decline approximately 10 feet in the vicinity of the proposed well field for every 10,000 afa pumped. A 10-foot or greater drop in elevation relative to the existing groundwater level would be considered a **significant and unavoidable** impact because this physical change in groundwater level could result in economic impacts to existing shallow domestic well operations due to increased energy (pumping) costs or the need to deepen existing wells to extract water. Therefore, mitigating measures will likely be needed to reduce impacts to existing wells adjacent to the well field if and when pumping at the well field exceeds approximately 10,000 afa. Such measures could include either deepening existing shallow domestic wells or connecting existing shallow well users to the public water system. A monitoring well system would need to be installed in the vicinity of the well field to precisely determine if and when pumping results in a 10-foot decline relative to existing groundwater elevations and the need for mitigating impacts to private domestic wells. The **significant and unavoidable** impact on nearby domestic wells anticipated once pumping at the North Vineyard Well Field exceeds approximately 10,000 afa highlights the need for implementation of the Zone 40 Conjunctive Use Program prescribed by the Water Forum Plan.

In addition to the long-term, regional decline in groundwater elevations from existing conditions described above, there will be dynamic draw down impacts associated with the North Vineyard Well Field. The phenomenon known as “dynamic draw down” in groundwater elevation occurs in the immediate vicinity of the groundwater well when the well is in operation. Dynamic draw down impacts are limited in areal extent (known as the radius of influence of the well) and can be mitigated through appropriate well spacing. Preliminary analyses indicate that maintaining a minimum 800-foot separation between the North Vineyard Well Field wells and existing private domestic wells will be adequate to mitigate the impact of dynamic draw down on local groundwater levels.

The estimated 10-foot decline in the static, regional groundwater surface elevation in and around the proposed well field for every 10,000 afa pumped as described above, should not be confused with the dynamic draw down in groundwater elevation that occurs at the well head while a well is in operation. Dynamic draw down at the well head has a limited areal extent (referred to as the “radius of influence” of the well) which occurs only when the well is in operation. The areal impact of draw down at the well head is typically addressed by appropriate well spacing (i.e., the well is constructed at a distance such that adjacent wells are beyond the radius of influence of the well). Preliminary analyses indicate that a separation distance of 800 feet between the North Vineyard Well Field wells and existing private domestic wells will be adequate to mitigate the impact of dynamic draw down on local groundwater levels. This 800-foot separation was determined by calculation of the anticipated radius of influence of wells in the proposed well field based on known aquifer parameters.

#### Mitigation Measure 3.3-9. Development Tied to Supplemental Supplies

Entitlements for urban development within the Sunrise-Douglas Community Plan Area (i.e. subdivision maps, parcel maps, use permits, building permits, etc.) will not be granted unless agreements and financing for supplemental water supplies are in place.

**IMPACT3.3-10 – Increased need for development of long-term regional surface and groundwater supplies.**  
*Long-term water supply demands in Zone 40 will be met only with the implementation of planned surface and groundwater supply projects.*

**Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative** - Implementation of the Zone 40 WSMP, Zone 41 UWMP, and Zone 40 WSIP, will provide SCWA Zone 40 with reliable, long-term groundwater supplies. SCWA has secured (and is in the process of securing additional) surface water entitlements that would allow SCWA to meet its projected 2030 water demands. SCWA intends to continue to extract groundwater to meet its customer demands within the limits of the negotiated sustainable yield of the Central Basin. In addition, SCWA has the transfer of ownership rights of GET Remediated Water discharged by Aerojet for beneficial use within Zone 40. Therefore, SCWA’s groundwater supplies are considered reliable, as are those surface water supplies for which SCWA has existing CVP contracts (the SMUD and Fazio supplies), and there is reasonable likelihood that these water supplies will continue to be available.

In order to implement the provisions of the Water Forum Agreement, SCWA initiated environmental review of the North Vineyard Well Field project and separately, the Zone 40 Master Plan Update. The North Vineyard Well Field project would include up to six wells, storage tanks, pump stations, treatment facilities, and a pipeline network to provide groundwater initially to the Mather Field, Sunrise Corridor, Security Park, and Sunridge Specific Plan Areas. Under the Zone 40 Master Plan Update, Sacramento County proposes construction of a surface water diversion structure on the Sacramento River, treatment facilities, and a network of pipelines to convey surface water throughout the Zone 40 service area. The North Vineyard Well Field would ultimately be integrated with the Zone 40 surface water facilities to

provide conjunctively managed surface and groundwater to the region, which includes the Sunrise-Douglas Community Plan/Sunridge Specific Plan Area.

The current master plan and fee program for Zone 40 supports a conjunctive use water delivery system commensurate with the conjunctive use requirements of the project area. Technical studies completed for the Sunrise-Douglas Community Plan/Sunridge Specific Plan project identify the conjunctive use facilities necessary to deliver adequate volumes of surface water to manage groundwater yields within Zone 40 at optimal levels as defined by the approved Water Forum Agreement. SCWA would be responsible for constructing those Zone 40 facilities.

Although project participation in Zone 40's conjunctive use program would be sufficient to ensure long-term reliable water supply in normal, dry, and multiple-dry years, project-specific environmental analysis of the Zone 40 Master Plan Update and the facilities programmed therein to implement the surface- and groundwater elements of the plan has not been conducted, nor has detailed planning or facility design commenced. While it is likely that Zone 40 facilities will be planned and implemented in a timely manner, provision of a long-term reliable water supply sufficient to meet the buildout demands of the project and other planned development in the south county area, consistent with the conjunctive use elements of the Water Forum Agreement, cannot be ensured until facilities are approved.

Because Zone 40 water is allocated on a first-come, first-served basis, the water available to the project under the Zone 40 WSMP and the Zone 41 UWMP could be affected by rapid development in other portions of Zone 40 or by expansion of the City of Elk Grove's urban services area. Neither scenario has occurred or is anticipated to occur in the immediate future. As development occurs, SCWA will track service demands in relation to available supplies. Specific projects that are planned for in the future would be served with water supplies as the necessary conveyance and treatment facilities to deliver water to the newly developing areas are developed.

The City conducted a water supply evaluation for the City General Plan that concluded that water supplies are currently available to meet the water demands associated with buildout of the City's corporate limits, but the City would be required to secure additional water supplies to meet its projected 2050 demands. Increased water demands could result in increased groundwater pumping, an increased demand for new surface-water supplies, an increased demand for recycling and water conservation programs, and/or an increased demand for local water purveyors to expand their service areas. Potential projects to secure additional supplies could include the negotiation of new water right transfers; construction of new diversion structures; expansion or construction of new water treatment plants; and construction of new potable-water and recycled-water distribution facilities (City of Rancho Cordova, 2006). The alternatives' impact on the need to develop long-term regional surface and groundwater supplies would be **significant and unavoidable**.

#### Mitigation Measure 3.3-10. Development Tied to Supplemental Supplies

Entitlements for urban development within the Sunrise-Douglas Community Plan Area will not be granted unless agreements and financing for supplemental water supplies are in place.

## **3.4 AIR QUALITY**

This section describes the affected environment, regulatory framework, environmental consequences and mitigation of potential consequences with respect to air quality. Information presented for the affected environment for air quality is based upon prior environmental documents.

### **3.4.1 AREA OF ANALYSIS**

The Sunridge Specific Plan Area is located in the City of Rancho Cordova within Sacramento County. For purposes of managing and improving air quality, California is divided into air quality basins, each managed by a local agency. The air quality basins were defined based on the relationship between geography and air quality. The nature of air quality is such that air flows beyond property boundaries, but is generally bounded by mountain ranges. Sacramento County is located within the Sacramento Valley Air Basin, which is a relatively flat valley bordered by mountains on the east, west, and north.

### **3.4.2 AFFECTED ENVIRONMENT**

Air quality in the Sacramento Valley Air Basin is determined by such natural factors as topography, climate, and meteorology, in addition to the presence of existing air pollution sources and conditions. The mountains surrounding the Sacramento Valley create a barrier to airflow, which can trap air pollutants in the valley when meteorological conditions are right. Prevailing winds are from the south-southwest. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells lie over the valley. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in a stable volume of air. The surface concentrations of pollutants are highest when these conditions are combined with smoke from agricultural burning or when temperature inversions trap cool air, fog and pollutants near the ground.

The ozone season (May through October) in the Sacramento Valley is characterized by stagnant morning air or light winds with the Delta sea breeze arriving in the afternoon out of the southwest. When the warm air layer traps a cooler air layer closer to the ground, the meteorological inversion layer develops and causes a photochemical reaction between reactive organic gases (ROG) and nitrous oxide (NO<sub>x</sub>) to form ozone. Usually the evening breeze transports the airborne pollutants to the north out of the Sacramento Valley. During about half of the days from July to September, however, a phenomenon called the “Schultz Eddy” prevents this from occurring. Instead of allowing for the prevailing wind patterns to move north transporting pollutants out of the valley, the eddy causes the wind pattern to circle back south toward Sacramento increasing the likelihood of violating federal or state standards. The eddy normally dissipates around noon when the Delta sea breeze arrives.

### **AIR QUALITY IN SACRAMENTO COUNTY**

Rancho Cordova is located within Sacramento County, which is located at the southern end of the Sacramento Valley Air Basin. Sacramento County was designated nonattainment of national and state ambient air quality standards (AAQS) for ozone and particulate matter 10 and 2.5 micron (PM<sub>10</sub> and PM<sub>2.5</sub>). The County was designated attainment or unclassified for all remaining pollutants.

Air quality conditions in Sacramento County are influenced by two main categories of emission sources; mobile and stationary. The main mobile source of regulated constituents (ROG, NO<sub>x</sub>, carbon monoxide (CO), and PM<sub>10</sub> and PM<sub>2.5</sub>) is light-duty passenger vehicles. The main stationary source of CO in



Sacramento County is fuel combustion from furnaces and boilers; the main stationary source of ROG is solvent use. Commercial and industrial fuel combustion represents the largest source of NO<sub>x</sub> emissions. The largest stationary source of PM<sub>10</sub> is aggregate extraction.

Sacramento County is part of the larger Sacramento Federal Ozone Nonattainment Area and has been designated a “serious” nonattainment area for the Federal 8-hour ozone standard, and is designated a “serious” nonattainment area for the state 1- and 8-hour ozone standard (Table 3.4-1). The District requested a “bump up” to the “severe” classification for the Federal 8-hour ozone standard, which was submitted by the California Air Resources Board (CARB) to the U.S. Environmental Protection Agency (USEPA) in February 2008. Although Sacramento County is designated nonattainment for the Federal PM<sub>10</sub> standard, air quality monitoring data from 2001 to 2003 shows that Sacramento County does meet that standard. The District must request redesignation to attainment and submit a maintenance plan. In December 2007, the CARB made its recommendation to the USEPA for the nonattainment area boundary for the Federal PM<sub>2.5</sub> standard.

<b>Table 3.4-1 Sacramento County Air Attainment Status</b>		
<b>Parameter</b>	<b>California Standard</b>	<b>Federal Standard</b>
Ozone	Non-Attainment Classification = Serious (1 hour and 8 hour Standards)	Non-Attainment, Classification = Serious (8 hour Standard)
Particulate Matter 10 Micron	Non-Attainment (24 hour Standard and Annual Mean)	Non-Attainment, Classification = Moderate (24 hour standard)
Particulate Matter 2.5 Micron	Non-Attainment (Annual Standard)	Non-Attainment (24 hour Standard and Annual Mean)
Carbon Monoxide	Attainment (1 hour and 8 hour Standards)	Attainment (1 hour and 8 hour Standards)
Nitrogen Dioxide	Attainment (1 hour Standard)	Attainment (Annual Standard)
Sulfur Dioxide	Attainment (1 hour and 24 hour Standards)	Attainment (3 hour, 24 hour, and Annual Standards)
Lead	Attainment (30 Day Standard)	Attainment (Calendar Quarter)
Visibility Reducing Particles	Unclassified (8 hour Standard)	No Federal Standard
Sulfates	Attainment (24 hour Standard)	No Federal Standard
Hydrogen Sulfide	Unclassified (1 hour Standard)	No Federal Standard
California area designations based on data collected during 2001 – 2003. Source: SMAQMD, 2010b		

The Sacramento Metropolitan Air Quality Management District (SMAQMD) has developed regulations and programs to minimize emissions of all air pollutants including those that exceed state and Federal standards. Due in part to the implementation of these regulations and programs, the Sacramento region’s air quality continues to improve (SMAQMD, 2009).

## MONITORING DATA

The SMAQMD conducts ambient air quality monitoring for ozone and particulate matter with the Sacramento Valley Basin. Data collected from 2004 to 2008 demonstrate the most current environmental conditions in the project area (see Table 3.4-2). The ozone monitoring data from Folsom Natoma Street is the closest ozone monitoring station to the project area. The data from this station shows exceedances of the ozone standard for several days each year exceeding the 1- and 8-hour averages. The nearest monitoring station to the project area for PM<sub>10</sub> are the two Branch Center stations near Bradshaw Road. Data from these stations indicate that the PM<sub>10</sub> standard has been exceeded between 24 and 69 days per year (CARB, 2010).

<b>Table 3.4-2 Summary of Air Pollutant Monitoring Data</b>						
Pollutant	State Standard	2004	2005	2006	2007	2008
<b>Ozone – Folsom Natoma Street</b>						
Highest 1-hour average (ppm)	0.09	0.111	0.120	0.133	0.129	0.166
Number of standard excesses <sup>a</sup>		14	23	31	13	38
Highest 8-hour average (ppm)	0.070	0.094	0.109	0.110	0.123	0.123
Number of standard excesses		41	41	62	34	65
<b>Ozone – T Street</b>						
Highest 1-hour average (ppm)	0.09	0.105	0.108	0.106	0.109	0.107
Number of standard excesses <sup>a</sup>		1	4	6	2	7
Highest 8-hour average (ppm)	0.070	0.076	0.087	0.090	0.090	0.092
Number of standard excesses		3	5	14	7	18
<b>Particulate Matter (PM<sub>10</sub>) – Branch Center #2</b>						
Highest 24-hour average (µg/m <sup>3</sup> )	50	*	*	82.0	60.0	89.0
Number of standard excesses		*	*	*	30.2	68.7
<b>Particulate Matter (PM<sub>10</sub>) – Branch Center</b>						
Highest 24-hour average (µg/m <sup>3</sup> )	50	45	64	40	*	*
Number of standard excesses		0	23.6	*	*	*
<b>Particulate Matter (PM<sub>10</sub>) – T Street</b>						
Highest 24-hour average (µg/m <sup>3</sup> )	50	58.0	55.0	111.0	57.4	70.9
Number of standard excesses		*	24.4	*	30.2	17.8
Notes: ppm = parts per million µg/m <sup>3</sup> = micrograms per cubic meter <sup>a</sup> = For ozone, this refers to the number of days of a given year during which excesses of the 1-hour standard were recorded. * = insufficient or no data available Source: CARB, 2010						

## TOXIC AIR CONTAMINANTS

Toxic Air Contaminants (TACs) are not monitored near the project sites. The single industrial facility near the project sites that emits TACs is Aerojet General Corporation (Aerojet). Aerojet emits TACs during controlled burns of spent rocket fuel. The controlled burns last from 3 to 5 minutes and are timed to protect air quality. The concentrations of contaminants in the emissions from the burns are not known.

## ODORS

Odor is usually measured through subjective reaction by humans, and is not quantitatively measureable. Odors are difficult to report because their effect relates to a subjective human response to various

intensities. Near the project sites, odors as a nuisance issue are generally attributed to the Sacramento Rendering Company, located over two miles from the project site, near the intersection of Kiefer and Sunrise Boulevards.

Odor complaints have been filed against the Sacramento Rendering Company by residents at Mather Air Force Base housing; over 50 complaints were filed from 1992 to 1997. Odors from the Sacramento Rendering Company are often detectable along Sunrise Boulevard during certain atmospheric conditions. The plant has incorporated a number of odor controls, including enclosing portions of the plant processes, installing a venturi scrubber, and utilizing a packed tower chlorine-based scrubber. The Sacramento Rendering Company is subject to SMAQMD Rule 410, "Reduction of Animal Matters," and Rule 402, Nuisance (County of Sacramento, 2001; SMAQMD, 2010a).

### **3.4.3 REGULATORY FRAMEWORK**

Various local, regional, state and Federal agencies share the responsibility for air quality management in Sacramento County. The SMAQMD operates at the local level with primary responsibility for attaining and maintaining the Federal and state ambient air quality standards in Sacramento County which includes the City of Rancho Cordova. The SMAQMD works jointly with the USEPA, CARB, the Sacramento Area Council of Governments (SACOG), other air districts in the Sacramento region, county and city transportation and planning departments, and various non-governmental organizations to improve air quality through a variety of programs. These programs include the adoption of regulations, policies and guidance, extensive education and public outreach programs, as well as emission-reducing incentive programs.

#### **3.4.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS**

The Federal Clean Air Act (CAA), passed in 1970, and last amended in 1990, forms the basis for the national air pollution control effort. Basic elements of the act include national ambient air quality standards for major air pollutants, hazardous air pollutants standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions (see Table 3.4-3).

#### **CONFORMITY**

In the 1990 CAA Amendments, Congress added specific provisions to the conformity requirements for transportation actions. "Conformity" requires that Federal agencies demonstrate their action's consistency with State Implementation Plans (SIPs).

The purpose of the general conformity program is to ensure that actions taken by the Federal government do not undermine state or local efforts to achieve and maintain national AAQS. Before a Federal action is taken, it must be evaluated for conformity with the SIP. All reasonably foreseeable emissions, both direct and indirect, predicted to result from the action are taken into consideration and must be identified as to location and quantity. If it is found that the action would create emissions above de minimis threshold levels specified in USEPA regulations, or if the activity is considered regionally significant because its emissions exceed 10% of an area's total emissions, the action cannot proceed unless mitigation measures are specified that would bring the project into conformance.

For actions that exceed the Federal conformity thresholds, the USACE must make its own conformity determination consistent with the requirements of CAA. In making its conformity determination, the USACE must consider comments from any interested parties (40 CFR §93153 et seq.). General conformity with respect to the project would be determined before the Record of Decision is signed.

**Table 3.4-3  
State and Federal Ambient Air Quality Standards**

Ambient Air Quality Standards						
Pollutant	Average Time	California Standards <sup>1</sup>		Federal Standards <sup>2</sup>		
		Concentration <sup>3</sup>	Method <sup>4</sup>	Primary <sup>3,5</sup>	Secondary <sup>3,6</sup>	Method <sup>7</sup>
Ozone (O <sub>3</sub> )	1 Hour	0.09ppm (180 µg/m <sup>3</sup> )	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m <sup>3</sup> )		0.075 ppm (147 µg/m <sup>3</sup> )		
Respirable Particulate Matter (PM <sub>10</sub> )	24 Hour	50 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	150 µg/m <sup>3</sup>	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m <sup>3</sup>		--		
Fine Particulate Matter (PM <sub>2.5</sub> )	24 Hour	No Separate State Standard		35 µg/m <sup>3</sup>	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	15.0 µg/m <sup>3</sup>		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m <sup>3</sup> )	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m <sup>3</sup> )	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m <sup>3</sup> )		35 ppm (40 mg/m <sup>3</sup> )		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m <sup>3</sup> )		--	--	--
Nitrogen Dioxide (NO <sub>2</sub> )	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)	Gas Phase Chemiluminescence	0.053 ppm (80 µg/m <sup>3</sup> )	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m <sup>3</sup> )		0.100 ppm <sup>8</sup>	None	
Sulfur Dioxide (SO <sub>2</sub> )	Annual Arithmetic Mean	--	Ultraviolet Fluorescence	0.030 ppm (80 µg/m <sup>3</sup> )	--	Spectrophotometry (Pararsaniline Method)
	24 Hour	0.04 ppm (105 µg/m <sup>3</sup> )		0.14 ppm (365 µg/m <sup>3</sup> )	--	
	3 Hour	--		--	0.5 ppm (1300 µg/m <sup>3</sup> )	
	1 Hour	0.25 ppm (655 µg/m <sup>3</sup> )		--		

**Table 3.4-3  
State and Federal Ambient Air Quality Standards (continued)**

Ambient Air Quality Standards						
Pollutant	Average Time	California Standards <sup>1</sup>		Federal Standards <sup>2</sup>		
		Concentration <sup>3</sup>	Method <sup>4</sup>	Primary <sup>3,5</sup>	Secondary <sup>3,6</sup>	Method <sup>7</sup>
Lead <sup>9</sup>	30 Day Average	1.5 µg/m <sup>3</sup>	Atomic Absorption	--	--	--
	Calendar Quarter	--		1.5 µg/m <sup>3</sup>	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average <sup>10</sup>	--		0.15 µg/m <sup>3</sup>		
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer – visibility of ten miles or more (0.07 0 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70%. Method: Beta Attenuation and Transmittance through Filter Tape.		NO  FEDERAL  STANDARDS		
Sulfates	24 Hour	25 µg/m <sup>3</sup>	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m <sup>3</sup> )	Ultraviolet Fluorescence			
Vinyl Chloride <sup>9</sup>	24 Hour	0.01 ppm (26 µg/m <sup>3</sup> )	Gas Chromatography			
<div>1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM<sub>10</sub>, PM<sub>2.5</sub>, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.</div> <div>2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM<sub>10</sub>, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM<sub>2.5</sub>, the 24 hour standard is attained when 98% of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.</div> <div>3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.</div> <div>4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.</div> <div>5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.</div> <div>6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.</div> <div>7. Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.</div> <div>8. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).</div> <div>9. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.</div> <div>10. National lead standard, rolling 3-month average: final rule signed October 15, 2008.</div> <div>Source: CARB, 2010</div>						

### 3.4.3.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS

States translate the national AAQS into source-specific emission limitations in State Implementation Plans (SIPs). Each state has the primary responsibility for assuring that standards are attained and maintained. States adopt and submit to USEPA for approval a SIP for the implementation, maintenance, and enforcement of the national standards. The USEPA approves a SIP or portion thereof when it meets the requirements of the CAA. In addition to the national AAQS, states may adopt more stringent standards.

The California Clean Air Act (CCAA) establishes an air quality management process that generally parallels the federal process. The CCAA focuses on attainment of the state ambient air quality standards that are more stringent than the federal standards for certain pollutants and measurement periods.

The CCAA requires that air districts prepare an air quality attainment plan if the district violates state air quality standards for CO, sulfur dioxide (SO<sub>2</sub>), NO<sub>x</sub>, and ozone, but does not require an attainment plan for exceedances in PM<sub>10</sub> or smaller standards. The CCAA requires that the state air quality standards be met as expeditiously as practicable, but it does not set precise attainment deadlines.

The air quality attainment plan requirements established by the CCAA are based on the severity of air pollution problems caused by locally generated emissions. Upwind air pollution control districts are required to establish and implement emission control programs commensurate with the extent of pollutant transport to downwind districts.

The USEPA and the CARB established ambient air quality standards for common pollutants (Table 3.4-3). These standards represent the safe levels of contaminants that avoid the specific adverse health effects associated with each pollutant. The most common air pollutants with known harmful effects are listed below (SMAQMD, 2009).

**Ozone** – Ozone is commonly referred to as smog and is a respiratory irritant that increases susceptibility to respiratory infections and diseases and harms lung tissue at high concentrations. The state standard for ozone has been set for a 1- and 8-hour averaging time while a federal 8-hour standard is established. The state 1-hour standard is 0.09 parts per million (ppm). The Federal 8-hour standard is 0.08 ppm, not to be exceeded on a 3-year average. Ozone is measured in terms of ozone precursors which include ROG and NO<sub>x</sub>.

The principal sources of ROG and NO<sub>x</sub> are the combustion of fuels and the evaporation of solvents, paints, and fuels. As a cumulative result of development patterns in the Sacramento Valley and surrounding areas, motor vehicles emit over 75% of the ozone precursors in the Sacramento Federal Ozone Nonattainment Area.

**Particulate Matter** – There are many sources of PM emissions, including combustion, industrial and agricultural processes, grading and construction, and motor vehicle use. The PM emissions associated with motor vehicle use include tail pipe and tire wear emissions, as well as re-entrained road dust. PM emissions also result from wood burning in fireplaces and stoves, and agricultural burning. Fine particulate matter affects health because it can bypass the body's natural filtration system more easily than larger particles, lodging deep in the lungs.

The following discussion provides information on the other criteria pollutants for which the USEPA and CARB have set ambient air quality standards, but Sacramento County currently attains. Most of these pollutants are generated by motor vehicles, although industry and other stationary sources also emit varying levels of the pollutants.

Carbon Monoxide – State and Federal CO standards have been set for 1-hour and 8-hour averaging times. The state and the Federal standards for a 1-hour averaging period are 20 ppm and 35 ppm, respectively. The state and Federal standard for an 8-hour averaging period is 9 ppm. Carbon monoxide is produced mainly by motor vehicle emissions and at low concentrations reduces the amount of oxygen in the bloodstream and may aggravate cardiovascular disease.

Nitrogen Dioxide – Nitrogen dioxide (NO<sub>2</sub>) is a reddish brown gas that is a by-product of fuel combustion, mostly from motor vehicle and industrial sources. Nitrogen dioxide contributes to ozone formation.

Lead – As a result of regulatory efforts to reduce the content of lead (Pb) in gasoline, the contribution of lead from the transportation sector has been substantially reduced. Industrial activities are the major source of lead emissions to the atmosphere.

Sulfur Dioxide – Sulfur dioxide (SO<sub>2</sub>) is produced by the combustion of sulfur-containing fuels, such as oil, coal and diesel.

Toxic Air Contaminants – Toxic air contaminants are airborne pollutants that may be expected to result in an increase in mortality or serious illness or which may pose a present or potential hazard to human health. TACs are generally associated with mobile sources. The primary TACs generated by mobile sources include benzene, 1,3-butadiene, diesel particulates, and formaldehyde. Toxic air contaminants may be released as emissions from normal operations, or during accidental releases of hazardous materials. Adverse health effects of TACs include cancer, birth defects, neurological damage, and death.

#### **AIR TOXIC “HOT SPOTS” INFORMATION AND ASSESSMENT ACT**

California requires the submission of air emission inventory plans for toxic air contaminants. Facilities that release any hazardous substance listed in the regulations and release 10 tons or more of total organic gases, particulate matter, nitrogen oxides, or sulfur oxides are required to submit the plans to the local air pollution control district or air quality management district. The plan represents a comprehensive and detailed description of the methods the facility proposes to use to quantify air releases from all point sources. After review of the inventory plans, the local agency determines if a risk assessment would be required to be submitted by the facility.

#### **3.4.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES**

The CARB and the local air pollution control districts have shared the responsibility of meeting the CAA requirements. The CARB is responsible for regulating mobile source emission while stationary source emission controls are delegated to the local air pollution control districts or air quality management districts e.g., SMAQMD.

An area may be designated non-attainment for any of the national AAQS. Nonattainment area permits are issued under State or local jurisdiction. Sources emitting a non-attainment pollutant must meet the lowest achievable emission rate. In addition, the SIP must contain a growth allowance or the source must provide an emissions offset (i.e., offset the quantity of the source’s emissions by reducing emissions of the non-attainment pollutant emanating from one of its own operations or from an unrelated source). A given area can be designated an attainment area for one of the criteria pollutants and a non-attainment area for different criteria pollutants.

## **SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT RULES AND REGULATIONS**

The SMAQMD regulates air quality conditions in Sacramento County through a comprehensive strategic program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The SMAQMD also inspects stationary sources of air pollution and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the CCAA.

The rules are comprised of ten regulations including: General Rules, Permits, Fees, Prohibitory Rules, Agricultural Burning, Hearing Board, Emergency Episode Plan, New Source Performance Standards, National Emission Standards for Hazardous Air Pollutants (NESHAPs), and Mobile Sources (SMAQMD, 2010a).

As mentioned above, SMAQMD adopts rules and regulations. All projects are subject to SMAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the construction of the project may include, but are not limited to, the following:

**Rule 201: General Permit Requirements.** Any project that includes the use of equipment capable of releasing emissions to the atmosphere may require permit(s) from SMAQMD before equipment operation. The applicant, developer, or operator of a project that includes an emergency generator, boiler, or heater should contact SMAQMD early to determine whether a permit is required, and to begin the permit application process. Portable construction equipment (e.g., generators, compressors, pile drivers, lighting equipment) with an internal combustion engine over 50 horsepower (hp) are required to have a SMAQMD permit or CARB portable equipment registration.

**Rule 402: Nuisance.** This is a general prohibition that is meant to protect the general public from air contaminants or other materials that will cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public.

**Rule 403: Fugitive Dust.** The developer or contractor is required to control dust emissions from earthmoving activities or any other construction activity to prevent airborne dust from leaving the project sites.

**Rule 442: Architectural Coatings.** The developer or contractor is required to use coatings that comply with the volatile organic compound (VOC) content limits specified in the rule.

The SMAQMD provides guidance to local land use agencies in implementing an indirect source review program. Because the SMAQMD does not possess land use regulatory powers, administration of an indirect source review program is dependent upon land use agencies. The County of Sacramento has not yet adopted specific procedures for the implementation of an indirect source review program, which would identify various emission reduction measures and quantify their effectiveness in terms of meeting the 15% reduction targeted by Air Quality Policy AQ-15 in the City of Rancho Cordova General Plan (City of Rancho Cordova, 2006).

## **SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT AIR QUALITY ATTAINMENT PLAN**

The SMAQMD has an Air Quality Attainment Plan, which describes the local measures to be implemented to achieve the federal and state air quality standards. The Sunridge Specific Plan was developed in collaboration with the SMAQMD's Air Quality Attainment Plan (USACE, 2006).



## **SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT GUIDE TO AIR QUALITY ASSESSMENT**

The SMAQMD has an advisory document that provides lead agencies, consultants, and project applicant(s) with uniform procedures for addressing air quality in environmental documents (SMAQMD, 2009). The handbook contains the following applicable components:

- Criteria and thresholds for determining whether a project may have a significant adverse air quality impact;
- Specific procedures and modeling protocols for quantifying and analyzing air quality impacts;
- Methods available to mitigate air quality impacts; and,
- Information for use in air quality assessments and environmental documents.

The SMAQMD recommends that this handbook be used by lead agencies at local, state, and Federal levels for projects that are likely to result in emission impacts in Sacramento County.

In addition, effective October 10, 2005, if modeled construction-generated emissions for a project are not reduced to SMAQMD's threshold of significance (85 pounds per day [lb/day]) by the application of the standard construction mitigation, then an off-site construction mitigation fee is recommended. The fee must be paid before a grading permit can be issued. This fee is used by SMAQMD to purchase off-site emissions reductions. Such purchases are made through SMAQMD's Heavy Duty Incentive Program, through which select owners of heavy-duty equipment in Sacramento County can repower or retrofit their old engines with cleaner engines or technologies.

### **CITY OF RANCHO CORDOVA GENERAL PLAN**

The air quality policies and actions in the City of Rancho Cordova General Plan were found to be applicable to the Sunridge Properties Project (City of Rancho Cordova, 2001). The Air Quality Element contains policies related to coordinating with SMAQMD on environmental documents and maximizing air quality benefits through the use of landscaping and trees, which are directly related to policies in the Natural Resources Element. The policies and actions of the Air Quality Element related to this project are provided below:

Policy AQ.1.2 – Evaluate projects for compliance with state and Federal ambient air quality standards and the SMAQMD thresholds of significance.

Action AQ.1.2.1 - Coordinate with SMAQMD through the environmental review process to ensure that proposed projects would not significantly affect the region's ability to meet state and Federal air quality standards.

Action AQ.1.2.2 – Require project proponents to coordinate with SMAQMD on appropriate methodologies for evaluating project emissions and air quality impacts (e.g., emissions modeling software, SMAQMD's thresholds of significance, etc.).

Action AQ.1.2.3 – Require all new development projects that exceed SMAQMD's thresholds of significance to incorporate design, construction material, and/or other operational features that will result in a 15% reduction in emissions when compared to an "unmitigated baseline" project.

Policy AQ.1.3 - Prohibit wood-burning open masonry fireplaces in all new development. Fireplaces with USEPA-approved inserts, USEPA-approved stoves, and fireplaces burning natural gas will be allowed.

Policy AQ.1.5 - Require odor impact analyses be conducted for evaluating new development requests that either could generate objectionable odors that may violate SMAQMD Rule 402 or any subsequent rules and regulations regarding objectionable odors near sensitive receptors or locate new sensitive receptors near existing sources of objectionable odors. Should objectionable odor impacts be identified, odor mitigation shall be required in the form of setbacks, facility improvements or other appropriate measures.

Policy AQ.2.2 - Encourage mixed-use developments that put residences in close proximity to services, employment, transit, schools, and civic facilities/services.

Action AQ.2.2.1 – Promote compact development within one-quarter to one-half mile of rail transit stations and transit stations along enhanced transit corridors.

Action AQ.2.2.2 – Require greenfield areas of the City to be developed in keeping with the City’s Building Block Concept of livable, walkable neighborhoods with services and employment opportunities integrated within every Village of the community.

Policy AQ.2.4 - Maximize air quality benefits through selective use of landscaping vegetation that is low in emission of volatile organic compounds, and through re-vegetation of appropriate areas.

Action AQ.2.4.1 - Provide buffers and setbacks between sensitive land uses and sources of air pollution.

Policy AQ.3.1 - Promote walking and bicycling as viable forms of transportation to services, shopping, and employment.

Action AQ.3.1.1 - Facilitate street design that encourages biking and walking in both new and established areas.

Action AQ.3.1.2 - Require all new development to be designed to enable easy pedestrian and bicycle access and circulation.

Action AQ.3.2.4 - Require that new development pay its fair share of the cost of transit facilities and the operations and maintenance of transit services.

Action AQ.3.3.1 - Encourage commercial, retail, and residential developments to participate in or create Transportation Management Associations.

Policy AQ.3.4 - Emphasize “demand management” strategies that seek to reduce single occupant vehicle use in order to achieve state and federal air quality plan objectives.

Policy AQ.4.1 - Promote improved air quality benefits through energy conservation measures for new and existing development.

Action AQ.4.1.1 - Require energy-conserving features in the design and construction of new development. Many options exist for reducing pollution from energy producing systems, including the following:

- Requiring the use of the best available technologies to reduce air pollution standards.

- Using building materials and methods that reduce emissions and improve indoor air quality (e.g., Leadership in Energy and Environmental Design LEED certification, LEED Green Buildings, USEPA Green Building).
- Requiring that development projects be located and designed in a way that minimizes direct and indirect emission of air contaminants.
- Installing efficient heating equipment and other appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces, and boiler units.
- Utilizing automated time clocks or occupant sensors to control heating systems.

Action AQ.4.1.2 - Encourage the use of cost-effective and innovative emission reduction technologies in building components and design.

Action AQ.4.1.3 - Support the use of building materials and methods that increase efficiency beyond State Title 24 standards.

Action AQ.4.1.4 - Encourage the use of “USEPA Energy Star”-certified appliances.

Action AQ.4.1.5 - Promote the implementation of sustainable design strategies for “cool communities,” such as installing reflective roofing or light-colored pavement and planting urban shade trees.

Policy AQ.4.2 - Support vehicle improvements and the use of clean vehicles that reduce emissions and improve air quality.

Action AQ.4.2.4 - Promote developments and street systems that support the use of neighborhood electric vehicles.

Policy AQ.4.3 - Support SMAQMD’s program of retrofitting construction equipment to reduce air pollution.

Action AQ.4.3.1 - Enforce construction-related air quality mitigation measures adopted through the CEQA process.

Policy AQ.5.2 - Support programs that encourage children to safely walk or bike to school.

### **3.4.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES**

This section describes the potential project related air quality impacts. The primary issues and concerns regarding air quality-related impacts for this project include: 1) Exceedance of regulatory air quality threshold levels due to construction-related emissions, 2) Exceedance of air quality threshold levels due to increased vehicle traffic- and operation-related emissions, 3) Exposure of future residents to odors from surrounding existing industries that could lead to exposures and public complaints, and 4) Non-conformance with air quality policies found in the City of Rancho Cordova General Plan (City of Rancho Cordova, 2006).

#### **3.4.4.1 THRESHOLDS OF SIGNIFICANCE**

The thresholds for determining the significance of impacts for this analysis are based on the SMAQMD guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the

significance of an action in terms of its context and the intensity of its impacts. The Proposed Project and alternatives under consideration were determined to result in a significant impact related to air quality if they would:

- Increase short term construction-related emissions of ROG, NO<sub>x</sub> and particulate matter equal to or less than PM<sub>10</sub> that would exceed the SMAQMD threshold levels (see Table 3.4-4).
- Expose future residents to odors from the Sacramento Rendering Company that lead to public complaints, causing the Sacramento Rendering Company to be declared a public nuisance (SMAQMD Rule 402).
- Create long-term increase in ROG, NO<sub>x</sub> and PM<sub>10</sub> emissions from residents moving into the project area that leads to ROG, NO<sub>x</sub> and PM<sub>10</sub> emissions that exceed SMAQMD threshold levels.
- Create conformance issues with the City of Rancho Cordova General Plan Policy AQ.1.2.3 requirement to achieve a minimum 15% reduction in emissions.

Table 3.4-4 SMAQMD Thresholds of Significance		
Mass Emission Thresholds (dealing with Ozone precursors)		
NO <sub>x</sub>	85 pounds/day	65 pounds/day
ROG	NONE	65 pounds/day
Concentration Thresholds (based on the California Ambient Air Quality Standard, identical for both phases of development)		
PM <sub>10</sub>	50 µg/m <sup>3</sup> 24-hour standard; 20 µg/m <sup>3</sup> Annual Arithmetic Mean	
PM <sub>2.5</sub>	12 µg/m <sup>3</sup> Annual Arithmetic Mean	
CO	20 ppm 1-hour standard, 9 ppm 8-hour standard	
NO <sub>2</sub>	0.18 ppm 1-hour standard; 0.03 ppm Annual Arithmetic Mean	
SO <sub>2</sub>	0.25 ppm 1-hour standard; 0.04 ppm 24-hour standard	
Lead	1.5 µg/m <sup>3</sup> 30-day average	
Visibility Reducing Particles	Extinction coefficient of 0.23 per kilometer – visibility of 10 miles due to particles when relative humidity is less than 70%	
Sulfates	25 µg/m <sup>3</sup> 24-hour standard	
H <sub>2</sub> S	42 µg/m <sup>3</sup> or 0.03 ppm 1-hour standard	
Vinyl Chloride	26 µg/m <sup>3</sup> or 0.01 ppm 24-hour standard	
Notes: The SMAQMD Board of Directors adopted the air quality thresholds of significance on March 28, 2002, via resolution AQMD2002018. A project is considered significant if emissions exceed a CAAQS or contribute substantially to an existing or projected violation of a CAAQS. A substantial contribution is considered an emission that is equal to or greater than 5% of a CAAQS. Revisions to the CAAQS are automatically adopted as revisions to these thresholds. Official citation for the CAAQS: California Code of Regulations, Title 17, §70200, Table of Standards.		

### 3.4.4.2 ANALYSIS METHODOLOGY

Air quality data used to establish the environmental conditions in the study area were modeled and compiled in the *Sunrise-Douglas Community Plan/Sunridge Specific Plan Final Environmental Impact Report* (County of Sacramento, 2001). The URBEMIS model used to estimate the emissions of ozone precursors and particulate matter continues to be relevant and appropriate for this assessment. Other than identifying attainment of carbon monoxide in the air basin, no other changes in air quality in the project area were identified to have occurred since this earlier study. The 2001 air quality assessment is incorporated by reference and a brief summary is provided below.

### 3.4.4.3 IMPACT ANALYSIS

This section describes air quality impact potential effects in the analysis area.

**IMPACT 3.4-1 – Short-term increase in construction-related emissions.** *Activities associated with the Phase I (grading and earthmoving) and Phase II (structural construction) construction of single family homes and associated infrastructure would result in the temporary generation of emissions of ROG, NO<sub>x</sub>, and PM<sub>10</sub>.*

**Proposed Project Alternative**– Activities associated with the Proposed Project Alternative Phase I (grading and earthmoving) and Phase II (structural construction) construction of 3,258 single family homes and associated infrastructure would result in the temporary generation of emissions of ROG, NO<sub>x</sub> and PM<sub>10</sub>. These emissions would result from construction activities including ground disturbance, construction worker commute trips, asphalt paving, mobile and stationary construction equipment exhaust, soil erosion, and architectural coatings.

The Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR estimated emissions for an area that included the Sunridge Specific Plan Area based on a methodology from the SMAQMD's guidance and on the urban emissions (URBEMIS) model (SMAQMD, 2009). Based on this modeling effort, it was estimated that construction emissions would equal 276 pounds per day (ppd) of PM<sub>10</sub> during Phase I, and 385 ppd of ROG and 501 ppd of NO<sub>x</sub> during Phase II. This impact was considered significant in the Sunridge Specific Plan EIR because the estimated emissions of PM<sub>10</sub> and NO<sub>x</sub> would exceed the SMAQMD threshold levels. The following impact analysis of air quality impacts covers the entire Specific Plan area, whereas the six projects for the Proposed Project Alternative represent only 14% of the Specific Plan dwelling units. Therefore, the impacts are proportionately less for the Proposed Project Alternative. The short-term increase in construction-related emissions for the Proposed Project Alternative would be **less than significant with mitigation**.

**Reduced Footprint Alternative** - Activities associated with the Reduced Footprint Alternative emissions would result from construction activities including construction worker commute trips, asphalt paving, mobile and stationary construction equipment exhaust, soil erosion, and architectural coatings. The air quality impacts from the construction of the 2,511 homes would be of the same nature and considered **less than significant with mitigation**. This is because the six projects under the Reduced Footprint Alternative represent only 11% of the Specific Plan dwelling units.

**No Action Alternative** – Activities associated with the Phase I (grading and earthmoving) and Phase II (structural construction) construction of 2,060 single family homes and associated infrastructure would result in the temporary generation of emissions of ROG, NO<sub>x</sub>, and PM<sub>10</sub>. These emissions would result from construction activities including ground disturbance, construction worker commute trips, asphalt paving, mobile and stationary construction equipment exhaust, soil erosion, and architectural coatings. The air quality impacts from the construction of the 2,060 homes would be of the same nature but **less than significant with mitigation**. This is because the six projects under the No Action Alternative represent about 10% of the Specific Plan dwelling units.

#### Mitigation Measure 3.4-1: Emissions Reduction.

**Proposed Project Alternative and Reduced Footprint Alternative** – In accordance with SMAQMD guidance and to comply with City requirements, the following measures would be implemented under these two alternatives to reduce emissions of fugitive dust and NO<sub>x</sub> to a less than significant level:

- a) Exposed surfaces, graded areas, storage piles, and haul roads would be watered and kept moist at all times
- b) Minimize the amount of disturbed area, the amount of material actively worked, and the amount of material stockpiled
- c) Limit onsite construction vehicle speeds to 15 miles per hour
- d) Sweep or wash paved streets adjacent to project construction sites at least once a day to remove accumulated dust
- e) Maintain at least 2 feet of freeboard when transporting soil or other materials by truck
- f) Limit the amount of actively disturbed construction area to 15 acres or less

Prior to approval of the project, provide a Construction-Related Emissions Reduction Air Quality Plan which demonstrates to the satisfaction of the SMAQMD how development within the planning area will achieve minimum reductions of 20% in NO<sub>x</sub> and 30% in PM<sub>10</sub> construction-related equipment emissions. The Construction-Related Emissions Reduction Air Quality Plan shall describe the implementation method(s) to be used (i.e., incorporating plan provisions into the Specific Plan, and/or incorporating Plan provisions as conditions of project approval, and/or through some other methods(s) to ensure that future development within the planning area will implement the emission reduction measures set forth in the Construction-Related Emissions Reduction Air Quality Plan).

**No Action Alternative** – The mitigation measure for the No Action Alternative would be similar to the action alternatives.

**IMPACT 3.4-2 – Exposure of future residents to odors from the Sacramento Rendering Company (SRC).**  
*Malodorous plant odors may migrate and have a negative impact on nearby air quality.*

**Proposed Project Alternative and Reduced Footprint Alternative** – Several factors are used to determine the significance of odor impacts, including the distance from the odor source to sensitive receptors, the predominant wind direction in relation to the odor source and sensitive receptors, the type of odor source, and the number of complaints received regarding the odor source. As discussed in Section 3.4, odors are currently a byproduct of Sacramento Rendering Company operation. The Sacramento Rendering Company plant is approximately 0.25 miles from the project area. Odor complaints from this facility have occurred in the past, although few residences are located nearby. The predominant wind direction in the area is from the south to southwest direction and the project area is directly downwind of Sacramento Rendering Company a minimum of 30% of the time.

This would be considered a **significant and unavoidable impact**. If public complaints from individuals residing in the future single family homes in the project area are sufficient to cause the Sacramento Rendering Company to be declared a public nuisance per SMAQMD Rule 402, then the SMAQMD can require Sacramento Rendering Company to identify and incorporate mitigating measures to correct the nuisance condition. These measures could include enclosing additional operations at the plant, installing additional odor control devices, or a combination of these and other control measures deemed necessary by the SMAQMD.

**No Action Alternative** – Over 2,000 single family residences are created as described in the No Action Alternative. The odor impact would still have a **significant and unavoidable impact** although much fewer residences would be affected.

#### Mitigation Measure 3.4-2: Odor Easement/Notifications.

**Proposed Project Alternative and Reduced Footprint Alternative** – In accordance with SMAQMD guidance, the applicant will grant an odor easement over all residential properties, in favor of the Sacramento Rendering Company which will serve to notify residential property owners of the potential for odor impacts, and will restrict to the extent allowed by law the liability/exposure of the Sacramento Rendering Company, and the City of Rancho Cordova, for nuisance or other resulting effect.

**No Action Alternative** – The mitigation measure for the No Action Alternative would be similar to the action alternatives.

**IMPACT 3.4-3 – Long-term increase in ROG, NO<sub>x</sub>, and PM<sub>10</sub> emissions.** *Activities associated with project build-out in the project area would result in increased air emissions of ROG, NO<sub>x</sub>, and PM<sub>10</sub>.*

**Proposed Project Alternative** – Activities associated with new residents moving into the Proposed Project Alternative's 3,258 single family homes would result in increased air emissions of ROG, NO<sub>x</sub>, and PM<sub>10</sub>. These activities would include use of natural gas, landscaping, and architectural coatings, as well as vehicle trips.

The Sunrise-Douglas Community Plan/Sunridge Specific Plan estimated vehicle and operational related emissions for the entire Sunridge Specific Plan Area based on emission factors developed by the USEPA and the URBEMIS model. The URBEMIS model calculates emissions of ozone precursor and PM<sub>10</sub> emissions associated with vehicle trips and residential area sources. Based on this modeling effort, it was estimated that emission of ROG, NO<sub>x</sub>, and PM<sub>10</sub> would be substantially above the significance thresholds for these pollutants.

The impact analysis of air quality impacts covered the entire Specific Plan area, whereas the six projects represent only 14% of the Sunrise-Douglas Community Plan/Sunridge Specific Plan dwelling units. The traffic assessment indicated that 29,241 new daily trips, or 27% of the entire Sunrise-Douglas Community Plan/Sunridge Specific Plan Area, would result from the Sunridge Specific Plan Area (see Section 3.7). Peak morning and evening hour traffic trips would generate 2,339 and 2,849, respectively. These peak trips represent as much as a 32% increase in new traffic generation. The impacts would be **significant and unavoidable**.

**Reduced Footprint Alternative** – The air quality impacts from emissions due the 2,511 homes would be of the same nature and **significant**, although slightly less than those described under the Proposed Project Alternative because the six projects under the Reduced Footprint Alternative represent only 11% of the Specific Plan dwelling units. However, the impact would be **significant and unavoidable**.

**No Action Alternative** – Activities associated with new residents moving into the No Action Alternative area's 2,060 single family homes would result in increased air emissions of ROG, NO<sub>x</sub> and PM<sub>10</sub>. These activities would include use of wood burning devices (SMAQMD Rule 417), space and water heating, landscaping, and consumer products, as well as vehicle trips. The six projects under the No Action Alternative represent about 10% of the Sunrise-Douglas Community Plan/Sunridge Specific Plan dwelling units. The new daily traffic volume increases would be similar to those projected under the Proposed Project Alternative. The air quality impacts from emissions would be of the same nature and the impact would be **significant and unavoidable**.

#### Mitigation Measure 3.4-3: Air Quality Plan Submittal.

**Proposed Project Alternative and Reduced Footprint Alternative** – Prior to approval of the project, the City of Rancho Cordova requirement AQ.1.2.3 Air Quality Plan will be submitted to demonstrate how development within the planning area will achieve a minimum 15% reduction in operational related (long-term) emissions, consistent with General Plan. The Air Quality Plan will describe the implementation methods to be used to ensure that future developments within the planning area will implement the emission reduction measures.

**No Action Alternative** – The mitigation measure for the No Action Alternative would be similar to the action alternatives.

**IMPACT 3.4-4 – Non-conformance with the City of Rancho Cordova General Plan Policy AQ.1.2.3.** *Pursuant to City of Rancho Cordova General Plan Policy, all new major indirect sources of emissions must be reviewed and modified or conditioned to achieve a minimum 15% reduction in emissions.*

**Proposed Project Alternative and Reduced Footprint Alternative** – The City of Rancho Cordova General Plan Policy AQ.1.2.3 requires that all new major indirect sources of emissions be reviewed and modified or conditioned to achieve a minimum 15% reduction in emissions. The developers for homes under the Proposed Project Alternative and the Reduced Footprint Alternative would be in violation of this policy, unless adequate emission reduction measures are implemented. These measures could include a provision for mixed uses, transit accessibility, bicycle and pedestrian improvement and participation in a Transportation Management Association. These mitigation measures would reduce the impact for the two alternatives to **less than significant**.

**No Action Alternative** – The No Action Alternative would be similar to the action alternatives and is considered **less than significant**.

#### Mitigation Measure 3.4-4: Air Quality Plan Submittal.

**Proposed Project Alternative and Reduced Footprint Alternative** – Prior to approval of the project by the City of Rancho Cordova, an AQ.1.2.3 Air Quality Plan would be prepared that demonstrates to the satisfaction of the SMAQMD how development within the planning area would achieve a minimum 15% reduction in operation-related emissions, consistent with General Plan Policy AQ.1.2.3.

**No Action Alternative** – The mitigation measure for the No Action Alternative would be similar to the action alternatives.



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## **3.5 LAND USE**

This section describes existing land uses within the analysis area, applicable policies and regulations for the City of Rancho Cordova and regional agencies, and the environmental consequences and mitigation related to land use.

### **3.5.1 AREA OF ANALYSIS**

The area of analysis for land use is the project site and surrounding area within the City of Rancho Cordova or Sacramento County.

### **3.5.2 AFFECTED ENVIRONMENT**

Figure 3.5-1 shows land use designations in Rancho Cordova (City of Rancho Cordova, 2006). The City of Rancho Cordova is located in eastern Sacramento County, and covers approximately 33.6 square miles. Within Rancho Cordova are a wide range of land uses, including approximately 2,600 acres of residential development, 454 acres of commercial/retail uses, 972 acres of office uses, and 835 acres of industrial uses. In addition, there are an estimated 12,888 acres of agricultural land (fallow) and more than 296 acres of public/private recreation and natural-preserve uses. Institutional uses such as schools, churches, and other public entities also serve as major land uses.

Growth in the area began during the Gold Rush and expanded with the development of Mather Air Force Base and Aerojet (City of Rancho Cordova, 2006). With the closure of Mather Air Force Base, Mather Airport is now operating as a civilian air field and business park. Surrounding land use includes Aerojet property north of Douglas Boulevard that is planned for urban development (as Rio del Oro), Security Park located immediately north of Douglas Boulevard, Mather Airport and industrial properties approximately 1.5 miles west of Sunrise Boulevard, and agricultural lands to the south and east (also under consideration for urban development). Kiefer Landfill is located approximately two miles to the south.

Historically, land use in the area, including the six parcels proposed for development consisted of grazing land with stock ponds. Scattered farmsteads, buildings, and other agricultural infrastructure also typified lands within the area (USACE, 2005a). In recent decades, some business and industrial complexes and residential developments have been constructed in the area east of Sunrise Boulevard. The land use change from agricultural (grazing) was documented in the Land Use Element of the Amended County of Sacramento General Plan (December 15, 1993). Much of the remaining area is grazing land, but is planned for conversion to residential developments. The land use designations specified in the Sunridge Specific Plan are primarily residential and open space, with a small amount of commercial uses in Douglas Road 103 and Arista del Sol.

Within the Sunridge Specific Plan, the Anatolia I, II, and III, and Sunridge Park developments are complete or under construction. Housing types within these developments consist primarily of single-family residential units, but also include multi-family garden apartments, townhouses, and condominiums. Four elementary schools, a middle school, and a high school are estimated as being needed within the Elk Grove Unified School District in the Sunridge Specific Plan Area at full development (Table 5-1, SDCP/SSP DEIR, 2001). Almost 100 acres of parkland are also included in the Sunridge Specific Plan (Table 5-4, SDCP/SSP DEIR, 2001).

Lands surrounding the analysis area parcels are part of the City's future planning efforts, and include the Rio del Oro and Grantline West Planning areas to the north, the Suncreek Preserve Planning area to the south, the Mather Planning area to the west, and the East Planning area to the east. The Rancho Cordova General Plan describes land uses, environmental conditions, and target residential and employment populations for each planning area. Prior to development, each planning area requires master planning documents. With exception of the Mather Planning area, the planning areas surrounding the six parcels are primarily grazing lands and open space.

### **3.5.3 REGULATORY FRAMEWORK**

#### **3.5.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS**

The Farmland Protection Policy Act (FPPA) (Public Law 97-98) was passed in 1981 to minimize the conversion of farmland to non-agricultural uses under Federal projects and programs. The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) oversees the FPPA and maintains an inventory of prime farmland, unique farmland, and farmland of statewide or local importance within the United States, its territories, and trust areas. The inventory is implemented in cooperation with other interested agencies at the national, state and local levels of government.

#### **3.5.3.2 STATE LAWS, POLICIES, REGULATIONS, AND LAWS**

##### **STATE PLANNING AND ZONING LAWS**

Government Code §65300 et seq. establishes the obligation of cities and counties to adopt and implement general plans. The general plan is a comprehensive, long-term, and general document that describes plans for the physical development of a city or county and of any land outside its boundaries that, in the city's or county's judgment, bears relation to its planning. The general plan addresses a broad range of topics, including, at a minimum, land use, circulation, housing, conservation, open space, noise, and safety. In addressing these topics, the general plan identifies the goals, objectives, policies, principles, standards, and plan proposals that support the city's or county's vision for the area. The general plan is a long-range document that typically addresses the physical character of an area over a 20-year period. Finally, although the general plan serves as a blueprint for future development and identifies the overall vision for the planning area, it remains general enough to allow for flexibility in the approach taken to achieve the plan's goals.

The State Zoning Law (Government Code §65800 et seq.) establishes that zoning ordinances, which are laws that define allowable land uses within a specific district, are required to be consistent with the general plan and any applicable specific plans. When amendments to the general plan are made, corresponding changes in the zoning ordinance may be required within a reasonable time to ensure that the land uses designated in the general plan would also be allowable by the zoning ordinance (Government Code §65860[c]).

##### **LOCAL AGENCY FORMATION COMMISSIONS**

The Cortese-Knox-Hertzberg Act of 2000 (Government Code §56000 et seq.) establishes the process through which a local agency boundary change is made and associated planning authority is transferred from one local agency to another. The local agency formation commission (LAFCo) of each county oversees and approves such boundary changes. To encourage orderly growth, LAFCOs establish a sphere of influence for each city and other local agencies. The sphere of influence is a county area that is subject to the planning influence of a city or another local agency because that agency has identified an intention to annex the area into its physical boundary and service area. The Sacramento Local Agency Formation

Commission Policies, Standards, and Procedures for LAFCOs, adopted September 5, 1990, amended May 5, 1993, include policies that:

- Encourage orderly development,
- Encourage the logical formation and determination of boundaries,
- Ensure that affected populations receive efficient governmental services, and
- Guide development away from open space and prime agricultural land uses unless such actions would not promote planned orderly and efficient development.

The Sacramento County LAFCo oversees the establishment or revision of boundaries for local municipalities and independent special districts.

## **WILLIAMSON ACT**

The California Land Conservation Act of 1965, also known as the Williamson Act, is designed to preserve agriculture and open-space lands by discouraging their premature and unnecessary conversion to urban uses. The act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open-space use. In return, landowners receive property tax assessments that are much lower than normal because they are based on farming and open-space uses as opposed to full market value. None of the land at the project site is held under Williamson Act contracts.

## **CALIFORNIA IMPORTANT FARMLAND INVENTORY SYSTEM AND FARMLAND MAPPING AND MONITORING PROGRAM**

The Farmland Mapping and Monitoring Program (FMMP) was established by the State of California in 1982 to continue the Important Farmland mapping efforts begun in 1975 by the U.S. Soil Conservation Service (SCS) (now called the NRCS). The intent of the SCS was to produce agricultural-resource maps based on soil quality and land use across the nation. The California Department of Conservation (CDC) sponsors the FMMP and is also responsible for establishing agricultural easements in accordance with Public Resources Code §10250-10255.

As part of the nationwide agricultural-land-use mapping effort, the NRCS developed a series of definitions known as Land Inventory and Monitoring (LIM) criteria. The LIM criteria classify the land's suitability for agricultural production. Suitability includes both the physical and chemical characteristics of soils as well as the actual land use. Important Farmland maps are derived from the NRCS soil survey maps using the LIM criteria and are available by county. Farmland classification is based on soil quality, irrigation status, and land use. Important Farmland maps classify land into one of the following eight categories: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, Urban and Built-Up Land, Other Land, and Water. The CDC classifications in the Important Farmland Inventory System are as follows:

- Prime Farmland-Land that has the best combination of features to sustain long-term agricultural production.
- Farmland of Statewide Importance-Land other than Prime Farmland that has a good combination of physical and chemical features for the production of agricultural crops.

- Unique Farmland-Land of lesser quality soils used for the production of the state's leading agricultural cash crops.
- Farmland of Local Importance-Land that is of importance to the local agricultural economy.
- Grazing Land-Land with existing vegetation that is suitable for grazing.
- Urban and Built-up Lands-Land occupied by structures with a density of at least one dwelling unit per 1.5 acres.
- Land Committed to Nonagricultural Use-Vacant areas; existing lands that have a permanent commitment to development but have an existing land use of agricultural or grazing lands.
- Other Lands-Land that does not meet the criteria of the remaining categories (CDC, 2004).

### **3.5.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS**

#### **SACRAMENTO AREA COUNCIL OF GOVERNMENTS' SACRAMENTO REGION BLUEPRINT**

The Sacramento Area Council of Governments (SACOG) is a regional organization that provides a variety of planning functions over its six-county region, which includes Sacramento, Yolo, Placer, Sutter, Yuba, and El Dorado Counties. SACOG's primary functions are to provide transportation planning and funding for the region and to study and support resolutions of regional issues. In 2002, SACOG initiated what is now known as the Sacramento Region Blueprint process. Computer modeling of the region showed that current growth patterns and transportation investment priorities would result in significant increases in congestion over the next 50 years, as well as significant consumption of privately held natural and agricultural land. The goal of the process was to determine whether alternatives to current and planned transportation and land use patterns could be established to improve the region's long-term travel patterns and air quality, as well as retain substantially more open space. The Blueprint is the product of a 3-year public-involvement effort and is intended to guide land use and transportation choices over the next 50 years. During this 50-year period the region's population is projected to grow from 2 million to more than 3.8 million, jobs are projected to increase from 921,000 to 1.9 million, and housing units are projected to increase from 713,000 to 1.5 million.

The starting point for the Blueprint process was the "Base Case Scenario," which shows how the region would develop through the year 2050 if growth patterns of the recent past continue. Under the Base Case Scenario, growth would continue outward into largely rural areas and on the fringes of current development. The model predicted that the average resident living in a version of a future typical of the Base Case Scenario in 2050 would probably live in a single-family house on a fairly large lot in a subdivision with similar houses. This resident would commute a longer distance to work than is typical today; trips to work and commercial areas would be lengthy and slow because of significant increases in congestion.

In December 2004 the SACOG Board of Directors adopted the Preferred Blueprint Scenario, a vision for growth that promotes compact, mixed-use development and more transit choices as an alternative to low-density development. It includes a greater range of housing products, reinvestment in already developed areas, protection of natural-resource areas from urbanization, and more transportation choices. Residents living in a future developed area consistent with the Preferred Blueprint Scenario in 2050 would probably live in a home on a smaller lot, in a neighborhood with some larger houses and some attached row houses, apartments, and condominiums. Residents would drive to work, but the trip would be shorter than presently, and the time needed to get there would be about the same as it is now. It is anticipated that

residents may sometimes use public transportation (e.g., train or bus). Most of their shopping and entertainment trips would still be via automobile, but distances would be shorter. Some of these shopping trips might be via walking or biking down the block a short distance to a village or town center that contains neighborhood stores with housing units built on top of them, and a small park or plaza.

The Sacramento Region Blueprint depicts a way for the region to grow through the year 2050, generally consistent with seven principles of “Smart Growth.” These principles are summarized below and include a comparison of development projected under the Base Case Scenario to development projected under the Preferred Blueprint Scenario (SACOG and Valley Vision, 2004).

- **Transportation Choices:** Developments should be designed to encourage people to sometimes walk, ride bicycles, ride the bus or light rail, take the train, or carpool. Use of Blueprint growth concepts for land use and right-of-way design would encourage use of these modes of travel and the remaining auto trips would be, on average, shorter. In the Base Case, 2% of new housing and 5% of new jobs would be located within walking distance of 15-minute bus or train service, the number of vehicle miles traveled per day per household would be 34.9 miles, and the total time devoted to travel per household per day would be 81 minutes. The Blueprint Scenario reduces the number of trips taken by car by about 10%. These trips are shifted to transit, walking, or biking. In the Blueprint Scenario, 38% of new homes and 41% of new jobs would be located within walking distance of 15-minute bus or train service, the number of vehicle miles traveled per day per household would be 47.2 miles, and the total time devoted to travel per household per day would be 67 minutes. With the Blueprint Scenario, per capita, there would be 14% less carbon dioxide and particulates produced by car exhaust compared to the Base Case.
- **Mixed-Use Developments:** Building homes and shops, entertainment, office, and light industrial uses near each other can encourage active, vital neighborhoods. This mixture of uses can be either in a vertical arrangement (mixed in one building) or horizontal (with a combination of uses in close proximity). These types of projects function as local activity centers where people would tend to walk or bike to destinations. Separated land uses, on the other hand, lead to the need to travel more by auto because of the distance between uses. Under the Base Case scenario, 26% of people would live in communities with a good, or balanced, mix of land uses by 2050. In the Blueprint Scenario, 53% of people would live in balanced communities.
- **Compact Development:** Creating environments that are more compactly built and use space in an efficient but aesthetic manner can encourage more walking, biking, and public-transit use, and shorten auto trips. Under the Base Case, by 2050, new development would require the consumption of an additional 661 square miles of land. Under the Blueprint Scenario, 304 square miles of new land would be required for new development.
- **Housing Choice and Diversity:** Providing a variety of places where people can live—apartments, condominiums, townhouses, and single-family detached homes on varying lot sizes—creates opportunities for the variety of people who need them: families, singles, seniors, and people with special needs. This issue is of special concern for people with very low, low, and moderate incomes. By providing a diversity of housing options, more people would have a choice.
- **Use of Existing Assets:** In urbanized areas, development on infill or vacant lands, intensification of the use of underutilized parcels, or redevelopment can make better use of existing public infrastructure. This can also include rehabilitation and reuse of historic

buildings, denser clustering of buildings in suburban office parks, and joint use of existing public facilities such as schools and parking garages. Under the Base Case Scenario, all new development would be on vacant land. Under the Blueprint Scenario, it is suggested that 13% of all new housing and 10% of all new jobs would occur through reinvestment.

- **Quality Design:** The design details of any land use development—such as the relationship to the street, setbacks, placement of garages, sidewalks, landscaping, the aesthetics of building design, and the design of the public rights-of-way—are factors that can influence the attractiveness of living in a compact development and facilitate the ease of walking and biking to work or neighborhood services. Good site and architectural design is an important factor in creating a sense of community and a sense of place. Under the Base Case, 34% of people would live in pedestrian-friendly neighborhoods. Under the Blueprint Scenario, in 2050, pedestrian-friendly neighborhoods would rise to 69%.
- **Natural Resources Conservation:** This principle encourages the incorporation of public-use open space (such as parks, town squares, trails, and greenbelts) within development projects, above state requirements; it also encourages wildlife and plant habitat preservation, agricultural preservation, and promotion of environmentally friendly practices such as energy efficient design, water conservation and stormwater management, and planting of shade trees. Under the Base Case Scenario, 166 square miles of agricultural land would be converted into urban uses. Under the Blueprint Scenario, 102 square miles of agricultural land would be converted to urban uses. When the Preferred Blueprint Scenario was developed, the authors included a calculated, predetermined “preservation factor” that was intended to account for a certain amount of land that could be set aside in the future to preserve natural resources. However, the Preferred Blueprint Scenario did not attempt to map specific areas that could potentially be set aside as preserves. The only “preserve” areas that were mapped were those already designated as such that were in existence at the time the Preferred Blueprint Scenario was created.

The Preferred Blueprint Scenario predicts long-term environmental benefits from undertaking a realistic long-term planning process; these benefits are intended to minimize the extent of the inevitable physical expansion of the overall regional urban areas. In summary, if the Preferred Blueprint Scenario were followed, it would result in more mixed-use communities; provide a greater number of small-lot, single-family detached homes; develop a greater number of attached homes; reinvest in existing business and residential areas; and create more pedestrian-friendly neighborhoods. The results of implementing these principles would be the protection of natural resources (because less land would be required for urban uses) and less agricultural land conversion. In addition, the Preferred Blueprint Scenario predicts less time devoted to travel, fewer car trips, and fewer miles traveled to work and local businesses compared with development under the Base Case. The reduction in traffic would improve air quality in the region by reducing carbon monoxide and particulate matter produced by car exhaust.

The Blueprint process received broad support from most of its member agencies. The Blueprint is advisory and therefore does not establish land use restrictions for Rancho Cordova. The SACOG has no land use authority. Although it is only advisory, the Blueprint is the most authoritative policy guidance in the Sacramento region for long-term regional land use and transportation planning. A number of jurisdictions either are adopting the Blueprint concepts or are considering and encouraging projects consistent with the Blueprint. Further, the land uses in the Rancho Cordova General Plan generally reflect the types and intensity of land uses shown in the Preferred Blueprint Scenario, which envisions relatively higher overall residential densities than currently in place. While not establishing “buildout targets,” this land use scenario anticipates the addition of approximately 54,000-60,000 new households

and 48,000 new jobs within the current Rancho Cordova city limits (based on assumptions used in the Blueprint process), with possible additional growth in the City's Planning areas.

### **SACRAMENTO COUNTY LOCAL AGENCY FORMATION COMMISSION**

The project would require approval of annexation by the Sacramento County LAFCo to the service area of the Sacramento Regional County Sanitation District (SRCSD) and the Sacramento Area Sewer District (SASD) prior to service. The broad goals of the LAFCo include ensuring the orderly formation of local governmental agencies, preserving agricultural and open-space lands, and discouraging urban sprawl. Commissions must, by law, create municipal-service reviews and update spheres of influence for each independent local governmental jurisdiction within their countywide jurisdiction. The Sacramento County LAFCo has adopted the following policies and guidelines for approval of annexation:

- Consider favorably proposals that result in the provision of urban services in densely developed and populated areas.
- Consider favorably proposals that will provide urban services in areas with high growth potential rather than in areas with limited potential for future growth.
- Community needs are met most efficiently and effectively by governmental agencies which:
  - Are already in existence,
  - Are capable of coordinating service delivery over a relatively large area, and
  - Provide more than one type of service to the territory that they serve.

### **SOUTH SACRAMENTO HABITAT CONSERVATION PLAN**

The purpose of the South Sacramento Habitat Conservation Plan (SSHCP), which, as of April 2010, has not yet been adopted, is to conserve open space, nature preserves and wildlife. It is designed to guide land use and development for the protection and conservation of species, habitat, and ecosystems, including wetlands and vernal pools, in south Sacramento County. The area of analysis is in the Urban Development Area Conservation Zone 1 of the SSHCP. Wetland covers in the analysis area generally include seasonal wetlands, swale, and some seasonal impoundment. Within an Urban Development Area, the majority of take is covered under the plan, though it does not preclude species recovery, and there is a streamlined permitting process. More information on the SSHCP and its relation to this study is provided in Section 3.2 Biological Resources.

### **RANCHO CORDOVA GENERAL PLAN**

The Land Use Element of the City of Rancho Cordova's General Plan describes existing and future land use within the incorporated area and the larger General Plan area, the majority of which is undeveloped vacant land with some agricultural use (City of Rancho Cordova, 2006). The incorporated City of Rancho Cordova is approximately 33.6 square miles and 20,071 acres, while unincorporated areas comprise nearly 62,000 acres.

### **SUNRIDGE SPECIFIC PLAN**

Land uses within the area of analysis are defined by the Sunridge Specific Plan, which was approved by the County of Sacramento in 2002, prior to the incorporation of the City of Rancho Cordova in 2003. The



Sunridge Specific Plan designated land use as primarily residential with some interspersed open space, school, park, and commercial uses, a total of 9,886 dwellings was proposed, ranging from single family houses to apartment units. The Rancho Cordova General Plan incorporates the proposed land uses for the Sunridge Specific Plan Area into its Land Use Element.

### 3.5.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

This section describes the potential project-related land use impacts.

#### 3.5.4.1 THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. A land use and agricultural resources impact would be considered significant if the Proposed Project and alternatives under consideration would do any of the following:

- Conflict with applicable land use plans, policies, or regulations of an agency with jurisdiction over the project.
- Physically divide an established community.
- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use.

#### 3.5.4.2 ANALYSIS METHODOLOGY

The analysis of consequences of the alternatives on land use was based on a qualitative assessment of existing conditions with project conditions using goals and objectives of laws, policies, regulations, and plans as the criteria for the assessment.

#### 3.5.4.3 IMPACT ANALYSIS

**IMPACT3.5-1 – Conflict with applicable land use laws policies, regulation, or plans of an agency with jurisdiction over the project.** *Project implementation would conflict with applicable land use plans, policies, or regulations of an agency with jurisdiction over the project.*

**Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative** -The three alternatives have been designed to incorporate elements of the laws, policies, regulations, and plans that would govern each development. There would be no conflict with the laws, policies, regulations, and plans and thus **direct and indirect** impacts are **less than significant**.

**Mitigation Measure:** No mitigation measures are required.

**IMPACT3.5-2 – Physically divide an establish community.** *Project implementation would create a division in an established community.*

**Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative** - The three alternatives are part of a larger community development plan that would result in community integration,

not separation. Therefore the three alternatives would not physically divide the community, and **direct and indirect** impacts are **less than significant**.

Mitigation Measure: No mitigation measures are required.

**IMPACT3.5-3 – Convert prime farmland, unique farmland, or farmland of statewide importance to nonagricultural use.** *Project implementation would convert prime farmland from agricultural use to urban uses.*

Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative - None of the land at the project sites are held under Williamson Act contracts; therefore, none of the alternatives would conflict with existing Williamson Act contracts. There is also no prime, or unique, or farmland of statewide importance located at the six project sites. Therefore the three alternatives would not convert prime farmland, and **direct and indirect** impacts are **less than significant**.

Mitigation Measure: No mitigation measures are required.

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## **3.6 POPULATION, EMPLOYMENT, AND HOUSING**

This section describes the affected environment for population, employment, and housing in the City of Rancho Cordova and Sacramento County, regulatory framework, and environmental consequences and mitigation measures.

### **3.6.1 AREA OF ANALYSIS**

The evaluation of population, employment, and housing considers the City of Rancho Cordova and the County of Sacramento, where the Sunridge Properties are located (Figure 1-1).

### **3.6.2 AFFECTED ENVIRONMENT**

This section describes population, employment, and housing within the City of Rancho Cordova and County of Sacramento.

#### **3.6.2.1 POPULATION**

##### **SACRAMENTO COUNTY**

From 2005-2007, Sacramento County had a total population of 1.4 million, 700,000 (51%) females and 674,000 (49%) males. The median age was 34.1 years. Twenty-six percent of the population was under 18 years and 11% was 65 years and older. The California Department of Finance (DOF) projects population in Sacramento County to increase to about 1.8 million in 2030 and 2.2 million in 2050 (DOF, 2009).

##### **CITY OF RANCHO CORDOVA**

Because the City of Rancho Cordova was not incorporated at the time of the 2000 U.S. Census, the U.S. Census Bureau determined the population of Rancho Cordova using census tracts. The data from the 2000 U.S. Census indicated that the population of Rancho Cordova was 48,731 in 1990 (U.S. Census Bureau, 2000). Rancho Cordova has since conducted an analysis to calibrate the available data to the city limits using the 2000 census block groups, blocks, and tracts in relation to the city-limit boundary. This analysis determined that the population in the city limits was 53,065 in 2000 (Jordan, pers. comm., 2004).

The population of Rancho Cordova was 57,799 from 2005-2007, with about 30,000 (51%) females and 28,000 (49%) males. The median age was 32.7 years. Twenty-five percent of the population was under 18 years and 10% was 65 years and older. The Sacramento Area Council of Governments (SACOG) estimates population of Rancho Cordova to increase to 202,500 by 2035 (SACOG, 2007).

The Rancho Cordova General Plan reflects an approach that combines specific land use designations in some areas of Rancho Cordova and more general descriptions of land uses in areas planned for future growth (Planning Areas). Projections included in the Rancho Cordova's Land Use Element are based on assumptions relating to existing, proposed, and approved project boundaries, including Rancho Cordova's Planning Areas; location; proposed and existing land uses; and geographic features. These projections are for full buildout of Rancho Cordova in 2030. The Rancho Cordova General Plan Planning Area consists of the current city limits and surrounding parts of unincorporated Sacramento County, and had a population of approximately 93,402 in 2000 (City of Rancho Cordova, 2006). Population growth within Rancho Cordova and its sphere of influence is projected to expand. Based on projections provided by

Rancho Cordova, the population within Rancho Cordova and its Planning Areas would be approximately 310,568 people by 2030. Actual projections may be higher or lower when more detailed project descriptions are developed for these Planning Areas.

### 3.6.2.2 EMPLOYMENT

#### SACRAMENTO COUNTY

Of the population 16 years and over in Sacramento County from 2005-2007, 64.6% were employed (U.S. Census Bureau, 2006a). Total personal income in Sacramento County was about \$50.2 billion and mean per capita personal income was \$36,340 (Bureau of Economic Analysis, 2009).

Table 3.6-1 shows 2007 industry earnings in Sacramento County. Top earning industries include government and government enterprises, professional and technical services, and health care and social assistance. Table 3.6-1 also shows industry employment and employee compensation in Sacramento County in 2007. In 2007, government and government enterprises employed the most people, followed by retail trade, health care and social assistance and professional and technical services. Average compensation per job in Sacramento County was \$59,779 in 2007. In 2008, Sacramento County's unemployment rate was 7.2%.

<b>Table 3.6-1 Industry and Industry Earnings, Sacramento County, 2007</b>			
<b>Industry</b>	<b>Earnings (thousands \$)</b>	<b>Employment (jobs)</b>	<b>Compensation (thousands \$)</b>
Forestry, fishing, related activities, and other	\$39,708	1,578	\$31,225
Mining	\$62,653	685	\$22,773
Utilities	\$115,981	790	\$113,939
Construction	\$3,202,305	56,201	\$2,615,981
Manufacturing	\$1,894,868	25,688	\$1,804,437
Wholesale trade	\$1,335,522	21,626	\$1,243,420
Retail trade	\$2,659,713	82,854	\$2,356,022
Transportation and warehousing	\$794,910	17,263	\$639,459
Information	\$1,239,175	17,856	\$1,183,302
Finance and insurance	\$3,061,049	46,219	\$2,839,224
Real estate and rental and leasing	\$1,025,835	36,322	\$543,987
Professional and technical services	\$4,564,865	62,244	\$3,736,916
Management of companies and enterprises	\$508,057	6,621	\$507,657
Administrative and waste services	\$1,545,243	52,841	\$1,363,352
Educational services	\$392,103	15,429	\$373,993
Health care and social assistance	\$4,146,849	75,861	\$3,805,164
Arts, entertainment, and recreation	\$330,289	14,913	\$268,081
Accommodation and food services	\$977,198	50,804	\$924,277
Other services, except public administration	\$1,344,070	45,646	\$1,149,547
Government and government enterprises	\$14,463,562	190,763	\$14,463,562
Source: Bureau of Economic Analysis 2009, Regional Economic Information System			

Major employers in Sacramento County in 2009 include: Aerojet General Corporation, Ampac Fine Chemicals, California State University, Sacramento City College, Delta Dental, Kaiser Foundation Hospital, Mercy Hospitals, Mercy San Juan Medical Center, Sutter Memorial Hospital, UC Davis Medical Center, UC Davis Medical Group, UC Davis Health System, Sacramento Municipal Utility District, and the Sacramento Bee newspaper. Government departments with high employment include Sacramento County Water Resources, and the following state departments: Environmental Protection

Agency, Air Resources Board, Corrections, Health Services, Employment Development, Social Services, Water Resources, and Education (EDD, 2009).

## CITY OF RANCHO CORDOVA

From 2005-2007 the City of Rancho Cordova population was 57,799 (three-year estimate). The percentage of the population 16 years and over that was employed was 66%. Table 3.6-2 shows industry employment in Rancho Cordova. The top three industries for employment were educational services, health care, and social assistance (17%), professional, scientific, and management, and administrative and waste management services (15%), and retail trade (12.5%). The unemployment rate was 9%. The median household income was \$45,472 and per capita income was \$22,707 (U.S. Census Bureau, 2006b).

<b>Table 3.6-2 City of Rancho Cordova Employment by Industry, 2005-2007<sup>1</sup></b>		
<b>Industry</b>	<b>Number</b>	<b>Percent</b>
Agriculture, forestry, fishing and hunting, and mining	125	0.5%
Construction	2,420	8.9%
Manufacturing	1,305	4.8%
Wholesale trade	735	2.7%
Retail trade	3,393	12.5%
Transportation and warehousing, and utilities	1,191	4.4%
Information	1,079	4.0%
Finance and insurance, and real estate and rental and leasing	2,467	9.1%
Professional, scientific, and management, and administrative and waste management services	4,141	15.3%
Educational services, and health care and social assistance	4,600	17.0%
Arts, entertainment, and recreation, and accommodation, and food services	2,040	7.5%
Other services, except public administration	994	3.7%
Public administration	2,567	9.5%
<b>Total</b>	<b>27,057</b>	<b>100%</b>
Source: U.S. Census Bureau 2009		
<sup>1</sup> The 2005-2007 ACS three year estimates are based on data collected between January 2005 and December 2007		

Rancho Cordova also provides many jobs for people that live in the greater Sacramento area. The City of Rancho Cordova has over 3,000 business establishments and provides employment for over 45,000 people. The Mather Commerce Center has over 2 million square feet of office space. Of the major employers in Sacramento County listed above, Aerojet General Corporation, Ampac Fine Chemicals, and Delta Dental are in Rancho Cordova.

The City of Rancho Cordova continues to invest in new developments. Since becoming incorporated in 2003, Rancho Cordova has had public and private investments of over \$1.3 billion in commercial, residential, infrastructure, and schools and parks.

### 3.6.2.3 HOUSING

#### SACRAMENTO COUNTY

Within the County there were about 501,000 households with an average household size of 2.7 people. Among households, 306,000 (61%) were owner-occupied and 195,000 (39%) were occupied by renters. The median monthly housing costs for mortgaged owners was \$1,916, while costs for non-mortgaged owners was \$397, and renters \$931. Forty-eight percent of owners with mortgages, 12% of owners without mortgages, and 53% of renters in Sacramento County spent 30% or more of their household income on housing (U.S. Census Bureau, 2006a).

In the 2008 RHNA, SACOG determined housing allocation for Sacramento County to be 59,093 new units to support population growth until 2013. Of the 59,093 units, 21.3% should be very low income, 16.2% should be low income, 19.1% should be moderate income, and 43.4% should be above moderate income (SACOG, 2008).

SACOG projects the total households in Sacramento County will be approximately 733,000 by 2035 with a land use mix of about 506,000 single-family households and 226,000 multi-family households (SACOG, 2007).

#### RANCHO CORDOVA

Within Rancho Cordova, there were approximately 22,000 households with an average household size of 2.6 people. Of these, 12,000 (53%) were owner-occupied and 10,000 (47%) were rentals. Of the total housing units, 58% were single-unit structures, 36% were multi-unit structures, and 6% were mobile homes. Approximately 6% of the total housing units were vacant (U.S. Census Bureau, 2006b). Approximately 40% of the Rancho Cordova housing stock is over 35 years old. Only 14% of Rancho Cordova houses were constructed after 1990. An assessment of blight within Rancho Cordova determined that approximately 42% of the 10,926 households surveyed had extensive deficiencies and 3% needed to be replaced (Rancho Cordova, 2008).

The median monthly housing costs for homeowners with a mortgage(s) was \$1,681, while costs for non-mortgage homeowners was \$338, and renters \$894. Approximately 48% of homeowners with mortgages, 11% of homeowners without mortgages, and 55% of renters in Rancho Cordova spent 30% or more of their household income on housing (U.S. Census Bureau, 2006b).

SACOG projects total households in Rancho Cordova to be about 76,600 by 2035, including about 54,000 single-family households and 23,000 multi-family households (SACOG, 2007). Table 3.6-3 lists the number of houses proposed in existing plans for each development subject to this environmental impact statement (EIS). These would contribute to Rancho Cordova's regional housing supply.

<b>Table 3.6-3 Proposed Number of New Houses</b>	
<b>Development</b>	<b>Houses Proposed</b>
Anatolia IV	134
Sunridge Village J	369
Grantline 208	855
Douglas Road 98	693
Douglas Road 103	301
Arista del Sol	906
<b>Total</b>	<b>3,258</b>

The 2000 U.S. Census depicts Rancho Cordova as a community with growing housing values, a low vacancy rate, and relatively small households. The U.S. Census Bureau reports that the number of housing units in Rancho Cordova increased from 35,990 in 1990 to 37,811 in 2000 (U.S. Census Bureau 2000). The housing growth rate in Rancho Cordova was approximately 4.8%, with the supply and composition of housing changing very little in this 10-year period. The number of housing units in Rancho Cordova is anticipated to increase with the approval of large-scale development plans and the construction of new and proposed residential projects. Median home prices within the city increased by 23.2% in a 1-year period (December 2003 to December 2004), from \$233,088 to \$303,500 (Sacramento Bee, 2005). Based on existing, planned, and approved projects, the number of housing units is estimated to increase to approximately 126,241 by 2030 at full buildout of Rancho Cordova (City of Rancho Cordova, 2006).

According to the California Department of Housing and Community Development (HCD) (2000), a housing vacancy rate of 5% is considered normal. Vacancy rates below 5% indicate a housing shortage in a community. The U.S. Census Bureau reports that Rancho Cordova had a vacancy rate of 2.2% for owner-occupied units and 3.8% for rental units in 2000. Similarly, Sacramento County had a vacancy rate of 1.4% for owner-occupied units and 4.8% for rental units in 2000. These vacancy rates indicate that both the city and county currently experience a tight housing market and a housing shortage.

## REGIONAL HOUSING NEEDS ALLOCATION

A Regional Housing Needs Plan (RHNP) is mandated by the State of California for regions to address housing issues and needs based on future growth projections for the area (Government Code Section 65584). The RHNP is developed by SACOG and allocates to cities and counties their “fair share” of the region’s projected housing needs based on household income groupings over the 5-year planning period for each specific jurisdiction’s Housing Element. The RHNP also identified and quantified the existing housing needs for each jurisdiction.

The SACOG anticipates that a total of 23,353 housing units (including existing units) would be required for Rancho Cordova during the current planning period (2000-2007) to meet regional housing needs. In January 2000, SACOG’s estimated number of existing housing units was 20,542, with an additional 2,811 new housing units required by 2007 (see Table 3.6-4).

<b>Table 3.6-4 City of Rancho Cordova Regional Housing Needs Allocation for 2000-2007</b>			
<b>Income Grouping</b>	<b>Existing Housing Units</b>	<b>Total Projected Housing Units Required</b>	<b>New Housing Units Required</b>
Very low	5,366	5,925	559
Low	4,090	4,497	407
Moderate	4,349	4,855	506
Above moderate	6,737	8,076	1,339
<b>Total</b>	<b>20,542</b>	<b>23,353</b>	<b>2,811</b>
Source: SACOG 2001			

In the 2008 RHNA, SACOG determined the regional housing allocation for Rancho Cordova to be 10,395 new units to support population growth until 2013. Of the 59,093 units, 20.3% should be very low income, 15.3% should be low income, 19.2% should be moderate income, and 45.2% should be above moderate income (SACOG, 2008).



### **3.6.3 REGULATORY FRAMEWORK**

#### **3.6.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS**

There are no federal plans, policies, regulations, or laws related to population, employment, and housing that are applicable to the proposed project or alternatives under consideration.

#### **3.6.3.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS**

There are no state plans, policies, regulations, or laws related to population, employment, and housing that are applicable to the proposed project or alternatives under consideration.

#### **3.6.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS**

##### **RANCHO CORDOVA GENERAL PLAN ECONOMIC DEVELOPMENT ELEMENT**

This Economic Development Element of the Rancho Cordova General Plan provides a guide for Rancho Cordova to provide a full range of employment, housing, retail/service, and entertainment options to residents. It establishes goals, policies, and actions to improve the city's prosperity, maintain regional competitiveness, ensure accessibility to assets, market the city, and set equitable rules for development.

##### **REGIONAL HOUSING NEEDS PLAN**

California's Housing Element Law mandates that councils of government develop an RHNP for their service area (Government Code §65584). SACOG is the lead agency in developing the RHNP for the 22 cities and 6 counties that it serves, including Sacramento County and Rancho Cordova.

Each city and county in the RHNP receives a Regional Housing Needs Allocation (RHNA) of the total number of housing units that it must plan for within a 7.5 year time period. Within the total number of units, allocations are also made for the number of units within four economic categories: very low, low, moderate, and above moderate incomes. The allocations are intended to be used by jurisdictions when updating their housing elements as the basis for assuring that adequate sites and zoning are available to accommodate at least the number of units allocated under the RHNP.

##### **RANCHO CORDOVA GENERAL PLAN**

The Housing Element of the Rancho Cordova General Plan identified housing solutions to solve regional housing needs problems and meet or exceed the regional housing needs allocation. The City of Rancho Cordova incorporated in 2003 as a jobs-rich community with homes and apartments that could not meet the housing demands of the workforce. In the Housing Element, the goals, policies, and actions are outlined to ensure a suitable mix of housing to match the community's needs.

### **3.6.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES**

This section describes the potential population, employment, and housing impacts resulting from the alternatives.

#### **3.6.4.1 THRESHOLDS OF SIGNIFICANCE**

The thresholds for determining the significance of impacts for this analysis encompass the factors taken into account under National Environmental Policy Act (NEPA) to determine the significance of an action in terms of its context and the intensity of its impacts. A population, employment, and housing impact is

considered significant if implementation of the proposed project or alternatives under consideration would do any of the following:

- Induce substantial unplanned population growth in an area, either directly (by proposed new homes and businesses) or indirectly (through the extension of roads or other infrastructure);
- Generate a substantial demand for new housing, the construction of which could cause significant environmental impacts; or
- Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

### 3.6.4.2 ANALYSIS METHODOLOGY

The examination of population, employment, and housing conditions in this section is based on information obtained from review of the plans for the proposed project and alternatives under consideration and review of available population, employment, and housing projections from the Rancho Cordova General Plan, SACOG, the U.S. Census, and other sources. Specific indirect impacts associated with increased population, housing, and employment, such as traffic congestion, air quality degradation, and noise generation, are addressed in each technical section of this Draft EIS as appropriate. These technical sections provide a detailed analysis of other relevant environmental effects as a result of development of the project; therefore, indirect impacts are not discussed further in this section.

### 3.6.4.3 IMPACT ANALYSIS

The six parcels are proposed for residential development under the Sunridge Specific Plan. The City of Rancho Cordova is characterized as a jobs-rich community with homes and apartments that could not meet housing demands of the workforce as identified in the Housing Element of the Rancho Cordova General Plan. For some residential development, skilled workers are not available locally and are drawn from outside the area surrounding the development. These workers could cause a temporary impact on available housing in the communities in which they work. Given current economic conditions for the region, skilled workers would be expected to be available for the project development anticipated for the next several years.

Implementation of the Sunridge Specific Plan, including the six projects discussed in this EIS, would have a beneficial effect on the local economy. Therefore, discussion of effects to employment is not warranted. The three alternatives were analyzed in regards to population and housing below:

**IMPACT3.6-1 – Reduction in available housing.** *Project implementation would increase demand for housing reducing the amount of available housing.*

**Proposed Project Alternative -** Under the Proposed Project Alternative, each of the six parcels would be developed as follows:

- **Anatolia IV** – A total of 134 single family homes would be built.
- **Sunridge Village J** – A total of 369 single family homes would be built.
- **Grantline 208** – A total of 855 single family homes would be built.
- **Douglas Road 98** – A total of 693 single family homes would be built.

- **Douglas Road 103** – A total of 301 single family homes would be built.
- **Arista del Sol** – A total of 906 single family homes would be built.

The proposed fill activity would occur in conjunction with construction of this residential development. Under this alternative, there would be **no direct or indirect adverse impact** on housing and population as temporary housing for workers would not be necessary and the new housing would be developed to address local housing shortage needs. No mitigation is required.

**Reduced Footprint Alternative** - Under the Reduced Footprint Alternative, each of the six parcels would be developed as follows:

- **Anatolia IV** – A total of 134 single family homes would be built.
- **Sunridge Village J** – A total of 369 single family homes would be built.
- **Grantline 208** – A total of 556 single family homes would be built.
- **Douglas Road 98** – A total of 619 single family homes would be built.
- **Douglas Road 103** – A total of 301 single family homes would be built.
- **Arista del Sol** – A total of 532 single family homes would be built.

The proposed fill activity would occur in conjunction with construction of this residential development. Under this alternative, there would be **no direct or indirect adverse impact** on housing and population as temporary housing for workers would not be necessary and some new housing would be developed to address local housing shortage needs.

**No Action Alternative** - Under this alternative, a DA permit would not be issued and, therefore, no wetlands would be filled, and development would also not occur within 25 feet of the wetlands. Without a permit, each of the parcels would be developable as follows:

- **Anatolia IV** – A total of 109 single family homes would be built.
- **Sunridge Village J** – A total of 339 single family homes would be built.
- **Grantline 208** – A total of 470 single family homes would be built.
- **Douglas Road 98** – A total of 568 single family homes would be built.
- **Douglas Road 103** – A total of 120 single family homes would be built.
- **Arista del Sol** - A total of 453 single family homes would be built.

Under this alternative, there would be **no direct or indirect impact** on housing and population as temporary housing for workers would not be necessary and some new housing would be developed to address local housing shortage needs.

Mitigation Measure: No mitigation measures are required.

**Impact 3.6-2 – Demand for new housing.** *Project implementation would generate demand for new housing that cause significant environmental impacts.*

**Proposed Project Alternative** - The proposed project alternative is intended to meet existing housing demand and would not create a substantial demand for new housing. Therefore, this alternative would have **no direct or indirect impacts** on demand for new housing.

**Reduced Footprint Alternative** - The Reduced Footprint Alternative would address a portion of the existing housing demand, and would not create a substantial demand for new housing. Therefore, this alternative would have **no direct or indirect impacts** on demand for new housing.

**No Action Alternative** - The No Action Alternative would address a portion of the existing housing demand, and would not create a substantial demand for new housing. Therefore, this alternative would have **no direct or indirect impacts** on demand for new housing.

Mitigation Measure: No mitigation measures are required.

**Impact 3.6-3 – Displace substantial numbers of existing people or housing.** *Project implementation would displace people or housing, by causing removal of existing housing, forcing existing residents to move elsewhere.*

**Proposed Project Alternative** - There is no existing housing within the six project sites. Therefore this alternative would have **no direct or indirect impacts**.

**Reduced Footprint Alternative** There is no existing housing within the six project sites. Therefore this alternative would have **no direct or indirect impacts**.

**No Action Alternative** - There is no existing housing within the six project sites. Therefore this alternative would have **no direct or indirect impacts**.

Mitigation Measure: No mitigation measures are required.

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## 3.7 TRAFFIC AND TRANSPORTATION

This section describes the transportation conditions in the vicinity of the analysis area, applicable policies and programs, environmental consequences of the proposed action and alternatives, and associated mitigation measures.

### 3.7.1 AREA OF ANALYSIS

The area of analysis for transportation includes the road network within and immediately adjacent to the City of Rancho Cordova. The area of analysis is generally bordered by Douglas Boulevard and Grant Line Road.

### 3.7.2 AFFECTED ENVIRONMENT

This section describes the affected environment as it relates to traffic and transportation, including the, roadways, level of service, the bus system, the rail system, and bicycle systems.

#### 3.7.2.1 ROADWAYS

The City's roadway network is urban within developed areas of the City (north of Douglas Road, west of Sunrise Boulevard) and rural within undeveloped areas of the City (east of Sunrise Boulevard, south of U.S. Highway 50 (U.S. 50)). The following are major roadways within the City.

*U.S. 50*, a state highway, is an east-west multi-lane freeway beginning just west of the City of Sacramento and continuing east through Sacramento County to Lake Tahoe and beyond. It varies from eight lanes in the urban areas of metropolitan Sacramento to two to four lanes in rural areas in El Dorado County. In the Rancho Cordova area, U.S. 50 varies from an eight-lane facility a six-lane facility with the addition of two high occupancy vehicle (HOV) lanes east of Sunrise Boulevard.

*State Route (SR)-16* (Jackson Highway) is an east-west rural highway that runs along the south edge of the city to Sacramento to the west and Rancho Murieta and Amador County to the east. SR-16 is a two-lane facility.

*Sunrise Boulevard* is a north-south major road connecting Grant Line Road to the City of Roseville. It has two lanes between Grant Line Road and Douglas Road, four lanes between Douglas Road and White Rock Road, and six lanes north of White Rock Road. The U.S. 50/Sunrise Boulevard interchange is an L-9 configuration with loop on-ramps in the northeast and southwest quadrants and diagonal ramps in all four quadrants.

*White Rock Road* extends from International Drive to El Dorado County. It is a two-lane local road between International Drive and Zinfandel Drive, a six-lane secondary road between Zinfandel Drive and Sunrise Boulevard, and a two-lane rural road east of Sunrise Boulevard.

*Mather Field Road* extends from the Mather Reuse Area to Folsom Boulevard. It is a six-lane major road between International Drive and U.S. 50, and a four-lane major road between U.S. 50 and Folsom Boulevard. The U.S. 50/Mather Field Road interchange is an L-9 configuration with loop on-ramps in the northeast and southwest quadrants and diagonal ramps in all four quadrants.

*Douglas Road* is a two-lane secondary road that extends from Mather Boulevard in the Mather Reuse Area to Grant Line Road.

*Grant Line Road* is a two-lane secondary road that extends from State Route 99 to White Rock Road through the southeastern portion of the city.

*Zinfandel Drive* is a four-lane major road from International Drive to Folsom Boulevard. North and east of Folsom Boulevard it is a two-lane residential collector. The U.S. 50/Zinfandel Drive interchange is an L-9 configuration with loop on-ramps in the northeast and southwest quadrants and diagonal ramps in all four quadrants.

*Hazel Avenue* is four-lane north-south major road through Sacramento County that becomes Sierra College Boulevard in Placer County. The U.S. 50/Hazel Avenue interchange is an L-9 configuration with loop on-ramps in the northeast and southwest quadrants and diagonal ramps in all four quadrants.

*International Drive* is a four-lane east-west major road, beginning at the Mather Field Road/White Rock Road intersection and extending east to Kilgore Road.

*Folsom Boulevard* parallels U.S. 50 from Business 80 in Downtown Sacramento to Folsom, where it becomes Folsom-Auburn Road and continues north to Auburn. Folsom Boulevard is generally a four-lane major road within the City. The County of Sacramento recently completed widening of Folsom Boulevard between Hazel Avenue and Sunrise Boulevard from two- to four-lanes. Paralleling the south side of Folsom Boulevard is the Regional Transit (RT) light rail transit (LRT).

*Gold Country Drive* is a two-lane local road, beginning at Sunrise Boulevard and extending east to Hazel Avenue through the unincorporated community of Gold River.

*Bradshaw Road* is a two- to six-lane major road beginning at Folsom Boulevard and extending south to Grant Line Road. North of Goethe Road, Bradshaw Road is six-lanes. South of U.S. 50, Bradshaw Road narrows from six- to two-lanes as it extends south.

### **3.7.2.2 LEVEL OF SERVICE**

Level of service (LOS) is a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. An LOS definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

There are generally six levels of service categories that are assigned letter designations from A to F, with LOS A representing the best operating conditions and LOS F the worst. The following describes operating conditions under each level of service:

- **LOS A** describes conditions with little to no delay to motorists.
- **LOS B** represents a desirable level with relatively low delay to motorists.
- **LOS C** describes conditions with average delay to motorists.
- **LOS D** describes operations where the influence of congestion becomes more noticeable. This level is considered by many agencies to be the limit of acceptable delay.

- **LOS E** represents operating conditions with high delay values. This level is considered by many agencies to be the limit of acceptable delay.
- **LOS F** is considered to be unacceptable to most drivers with high delay values that often occur when arrival flow rates exceed the capacity of the intersection.

The segment of Douglas Road east of Sunrise Boulevard to Grant Line Road, adjacent to the project sites, operates at an LOS A. Grant Line Road also operates at an LOS A (Rancho Cordova, 2006). The following roadway segments in the City operate unacceptably at LOS E or LOS F:

- Folsom Boulevard – Mather Field Road to Coloma Road
- Sunrise Boulevard – Gold Country Drive to Coloma Road
- Sunrise Boulevard – Coloma Road to U.S. 50 Westbound Ramps
- Sunrise Boulevard – U.S. 50 Eastbound Ramps to Folsom Boulevard
- Sunrise Boulevard – Douglas Road to SR-16
- Hazel Avenue – Winding Way to U.S. 50 Westbound Ramps
- Bradshaw Road – U.S. 50 to Old Placerville Road
- Bradshaw Road – Old Placerville Road to Kiefer Boulevard (Rancho Cordova, 2006)

### **3.7.2.3 BUS SYSTEM**

Sacramento Regional Transit operates the bus system within Sacramento County, including Rancho Cordova. Fixed-route bus service within the City includes Routes 21, 28, 72, 73, 74, 75, and 91. Routes 72, 73, 74, and 75 generally operate in the areas northeast of the project sites, south of U.S. 50. Most routes start or end at the light rail stations along Folsom Boulevard.

- Route 72 begins at the Watt/Manlove LRT station and extends eastward using Watt Avenue, Kiefer Boulevard, Branch Center Drive, Bradshaw Road, Lincoln Village Drive, Routier Road, Rockingham Drive, and Mather Field Road to the Mather/Mills LRT station.
- Route 73 provides service within the City between the Mather/Mills LRT station and the Sunrise LRT station. It operates on Mather Field Road, Rockingham Drive, White Rock Road, Sunrise Boulevard, Trade Center Drive, and Citrus Road.
- Route 74 operates within the City between the Mather/Mills LRT station and the Sunrise LRT station and on Mather Field Road, International Drive, Data Drive, Research Drive, Zinfandel Drive, White Rock Road, Prospect Drive, Sun Center Drive, Trade Center Drive, and Citrus Road.
- Route 75 operates in the Mather Field Area of the City, beginning at the Mather/Mills LRT station and extending south and operating on Mather Field Road, Peter A. McCuen Way, Femoyer Street, Mather Boulevard, Macready Avenue, Old Placerville Road, and Rockingham Drive.



### **3.7.2.4 RAIL SYSTEM**

LRT service is provided from Downtown Sacramento along the U.S. 50 corridor to the Sunrise Boulevard Station eastward to the City of Folsom. The following LRT stations provide service within the City:

- Mather/Mills station located at the Mather Field Road/Folsom Boulevard intersection. The station has 298 total parking spaces.
- Zinfandel station located at the Zinfandel Drive/Folsom Boulevard intersection.
- Cordova Town Center station located at the Cordova Lane/Folsom Boulevard intersection.
- Sunrise station located at the Sunrise Boulevard/Folsom Boulevard intersection. The station has 487 parking spaces.
- Hazel station located at the Hazel Avenue/Folsom Boulevard intersection. The station has 432 parking spaces.

### **3.7.2.5 BICYCLE SYSTEM**

Bicycle facilities include Class I (off-street facilities), Class II (on-street bicycle lanes identified with signage and markings), and Class III (on-street bicycle routes identified by signage). Pedestrian facilities are comprised of paths, sidewalks, and pedestrian crossings. Class I off-street bike paths exist along the Folsom South Canal, American River, and along a portion of Sunrise Boulevard south of the American River. There is a bike/pedestrian only crossing of U.S. 50 between Mather Field Road and White Rock Road. Sidewalks exist on most streets within the developed portions of the City.

## **3.7.3 REGULATORY FRAMEWORK**

### **3.7.3.1 FEDERAL PLANS, POLICIES, REGULATIONS AND LAWS**

There are no federal plans, policies, regulations, or laws related to traffic and transportation that are significantly applicable to the alternatives under consideration.

### **3.7.3.2 STATE PLANS, POLICIES, REGULATIONS AND LAWS**

State plans, policies, regulations and laws related to traffic and transportation that are significantly applicable to the proposed project or alternatives under consideration are the California Department of Transportation (Caltrans) Guidelines.

#### **CALIFORNIA DEPARTMENT OF TRANSPORTATION**

According to the Caltrans Guidelines for the preparation of Traffic Impact Studies (December 2002), the following criteria are a starting point in determining when a Traffic Impact Study (TIS) is needed for a project:

- Generates over 100 peak hour trips assigned to a state highway facility.
- Generates 50 to 100 peak hour trips assigned to a state highway facility and, affected state highway facilities are experiencing noticeable delay approaching unstable traffic flow conditions (LOS “C” or “D”).

- Generates 1 to 49 peak hour trips assigned to a state highway facility, and:
  - Affected state highway facilities are experiencing significant delay including unstable or forced traffic flow conditions (LOS “E” or “F”);
  - The potential risk for a traffic incident is significantly increased (i.e., congestion related collisions, non-standard sight distance considerations, increase in traffic, conflict points, etc.); or
  - The change in local circulation networks impacts a state highway facility (i.e., direct access to state highway facility, a non-standard highway geometric design, etc.).

In addition, Caltrans prepares a Transportation Concept Report (TCR) for each of the state highway facilities. The TCR is an internal planning document which expresses Caltrans’ judgment on what the characteristics of each state highway should be in response to proposed land uses and projected travel demand over a 20-year planning period. Within the area of analysis, there are two state highway facilities: SR 16 and U.S. 50. The U.S. 50 TCR was last prepared in April 1998; at that time, the concept for the segments of U.S. 50 within the area of analysis was LOS E. The 1998 TCR identified that the concept at LOS E would be difficult to maintain, especially in metropolitan Sacramento County. In the recent draft U.S. 50 TCR (December 2009), the concept for the existing 20-year no build planning period is LOS F for the segments of U.S. 50 within the area of analysis.

According to the SR16 TCR (2004), the Concept for SR16 is LOS E.

### **3.7.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS AND ORDINANCES**

Regional plans, policies, regulations and laws related to traffic and transportation that are significantly applicable to the alternatives under consideration include the Sacramento County Traffic Impact Study Guidelines, Sacramento County General Plan, Rancho Cordova General Plan, and the Rancho Cordova Transit Master Plan.

#### **SACRAMENTO COUNTY TRAFFIC IMPACT STUDY GUIDELINES**

According to the Sacramento County Traffic Impact Study Guidelines dated 2004, a traffic study is required if:

- The project will generate 100 or more new a.m. or p.m. peak hour vehicle trip-ends.
- The project will generate 1,000 or more daily vehicle trip ends.
- New project traffic will substantially affect an intersection or a roadway segment already identified as operating at unacceptable level of service.
- The project may create a hazard to public safety.
- The project will substantially change the off-site transportation system or connections to it.

Sacramento County and the City of Rancho Cordova have adopted certain LOS thresholds for existing and proposed roadway segments as illustrated in their respective General Plans.

## **SACRAMENTO COUNTY GENERAL PLAN CIRCULATION ELEMENT**

The Sacramento County General Plan Circulation Element provides a Transportation Plan for the County that is intended to stress the importance of a balanced planning philosophy with more emphasis on alternative modes of transportation. The Element provides for walking, biking and transit facilities to link destinations, and a land use plan which promotes mixed used development which situates workers near jobs and shoppers near stores. The Sacramento County General Plan was adopted in 1993; an update to the General Plan is currently underway.

## **CITY OF RANCHO CORDOVA GENERAL PLAN CIRCULATION ELEMENT**

The City's Circulation Element describes existing and future transportation systems in the city and establishes goals, policies, and actions to improve the City's road network, transit facilities and services, and bicycle and pedestrian facilities. The Element outlines an approach to develop a road network operating at an acceptable level of service, offer multiple transportation options, improve local and regional connectivity, and support pedestrian and bicycle transit.

## **CITY OF RANCHO CORDOVA TRANSIT MASTER PLAN**

The Transit Master Plan provides an approach to support transportation objectives detailed in the City's General Plan. The plan proposes a system of city, neighborhood and regional services to connect residents to businesses, shopping, recreation and regional destinations. Regional services focus on bus rapid transit routes and additional stations along the Light Rail Gold Line. Local plans include shuttle services in the short term and an initial three-mile streetcar route in the long term.

### **3.7.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES**

This section describes the potential traffic and transportation impacts.

#### **3.7.4.1 THRESHOLDS OF SIGNIFICANCE**

The threshold for determining the significance of impacts for this analysis encompasses the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. The alternatives under consideration were determined to result in a significant impact related to traffic if they would:

- Result in a reduction of level of service at existing roadways.

#### **3.7.4.2 ANALYSIS METHODOLOGY**

##### **LEVEL OF SERVICE**

The evaluation of transportation impacts associated with the Sunrise Douglas Community Plan/Sunridge Specific Plan EIR focuses on capacity analysis for roadway segments and intersections. A primary result of capacity analysis is the assignment of levels of service to traffic facilities under various traffic flow conditions. The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual* (HCM) (Transportation Research Board, 2001). The concept of level of service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of

traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility (See Section 3.7.2.2). They are assigned letter designations from A to F, with LOS A representing the best operating conditions and LOS F the worst. Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year.

## UNSIGNALIZED INTERSECTIONS

Levels of service for unsignalized intersections are calculated using the operational analysis methodology of the HCM. The procedure accounts for lane configuration on both the minor and major street approaches, conflicting traffic stream volumes, and the type of intersection control (STOP, YIELD, or all-way STOP control). The definition of level of service for unsignalized intersections is a function of average *control* delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The level-of-service criteria for unsignalized intersections are shown in Table 3.7-1.

## SIGNALIZED INTERSECTIONS

Levels of service for signalized intersections are also calculated using the operational analysis methodology of the HCM. The methodology for signalized intersections assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on average *control* delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Table 3.7-1 summarizes the relationship between level of service and average control delay.

<b>Table 3.7-1</b> <b>Local Access Route Existing Traffic Volumes and Arterial LOS</b>		
<b>Level of Service</b>	<b>Unsignalized Intersection Criteria</b>	<b>Signalized Intersection Criteria</b>
	Average Control Delay (Seconds per Vehicle)	Average Control Delay (Seconds per Vehicle)
A	≤10	≤10
B	>10 and ≤15	>10 and ≤20
C	>15 and ≤25	>20 and ≤35
D	>25 and ≤35	>35 and ≤55
E	>35 and ≤50	>55 and ≤80
F	>50	>80
Source: <i>Highway Capacity Manual 2000</i> , Transportation Research Board, 2001, pages 16-2 and 17-2.		

For signalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups, to individual intersection approaches, or to the entire intersection. For unsignalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups or to individual intersection approaches.

As illustrated in Table 3.7-1, a good LOS consists of minimal delays, while a poor LOS consists of extended delays. Delays can be correlated to the ratio between traffic volume and capacity. For example if the volume of traffic approaching an intersection is greater than the capacity for that volume of traffic,

the end result is a poor LOS. Conversely, if the volume of traffic approaching an intersection is significantly less than the capacity, the end result is a good LOS.

## **ROADWAY SEGMENTS**

LOS thresholds were developed for the Rio del Oro Specific Plan Project DEIR/EIS, for roadway segments based on daily volumes, number of lanes and facility type based on the capacities in the Rancho Cordova's General Plan EIR as well as the 2004 Sacramento County Traffic Impact Analysis Guidelines (Rancho Cordova and USACE, 2006).

## **ASSESSMENT PERIODS**

According to Caltrans' Guidelines for Preparation of Traffic Impact Studies, the following scenarios are typically evaluated:

- Existing Conditions - Current year traffic volumes and peak hour LOS analysis of affected state highway facilities.
- Existing Conditions plus Proposed Project - Trip generation, distribution, and assignment in the year the project is anticipated to complete construction.
- Cumulative Conditions (Existing Conditions Plus Other Approved and Pending Projects without Proposed Project) - Trip assignment and peak hour LOS analysis in the year the project is anticipated to complete construction but without the proposed project impacts.
- Cumulative Conditions Plus Proposed Project (Existing Conditions Plus Other Approved and Pending Projects Plus the Project) - Trip assignment and peak hour LOS analysis in the year the project is anticipated to complete construction with the proposed project impacts.

## **PREVIOUS STUDIES**

Previous studies have addressed traffic in the vicinity. Traffic data used to establish the environmental conditions in the study area were modeled and compiled in the Sunrise Douglas Community Plan/Sunridge Specific Plan EIR (County of Sacramento, 2001), and the Rio del Oro Specific Plan Project DEIR/DEIS (Rancho Cordova and USACE, 2006). The capacity analysis methodology used in the 2001 SDCP/SRSP EIR and the 2006 Rio del Oro Specific Plan Project was based on (1) the concepts and procedures in the Highway Capacity Manual (Transportation Research Board, 2001), (2) the LOS thresholds for roadway segments (Rancho Cordova and USACE, 2006), and (3) trip generation rates in the Institute of Transportation Engineers (ITE) Trip Generation Manual (ITE 2008). Each of these methodologies continues to be relevant and appropriate for this assessment. The 2001 SDCP/SRSP EIR and 2006 Rio del Oro Specific Plan Project are incorporated by reference and brief summaries are provided below. The development of adjacent residential communities has occurred since these earlier studies, and traffic generated from these developments is taken into consideration in the impact analysis.

For the purposes of this EIS it is assumed that planned roadway improvements occurring as part of regional development would occur regardless of the alternatives evaluated in this EIS. According to the Sacramento County General Plan Transportation Plan, roadway improvements planned to accommodate an increase in traffic in the area of the alternatives are as follows:

- Sunrise Boulevard - widened to six lanes from Folsom Boulevard to Jackson Highway.

- Douglas Road - widened to six lanes from Sunrise Boulevard to Zinfandel Drive (west of the area of analysis) and extended from Zinfandel Drive to Excelsior Road (west of the area of analysis) as a four lane road.
- Jackson Highway (State Route [SR] 16) - Widened to four lanes east of Bradshaw Road.
- Kiefer Road – Extended from the project site to Jackson Highway as a four-lane collector.
- Grant Line Road - Widened to four lanes from White Rock Road to SR 99.

The Sunridge Specific Plan also proposed the following internal roadways within the area of the Sunrise Douglas Community Plan area to connect to the existing roadways:

- Pyramid Road: a primary four-lane arterial that will bisect the northern area of the Sunridge Specific Plan project from Sunrise Boulevard east to Grant Line Road.
- Jaeger Road: a north-south four-lane arterial extending from Douglas Road south to Kiefer Boulevard.
- Americanos Road: a north-south four-lane arterial extending from Douglas Road south to Kiefer Boulevard and east of Jaeger Road.
- Minor Residential Roads: constructed to provide internal circulation to residential areas within the potential project sites.

### 3.7.4.3 IMPACT ANALYSIS

**Impact 3.7-1 – Reduced level of service.** *Activities associated with project build-out in the project area would result in a reduction of level of service at roadways in the vicinity.*

**Proposed Project Alternative.** Expected traffic volume increases associated with a development project are typically determined using the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (ITE 2008) land use trip generation rates. According to the Sunrise Douglas Community Plan/Sunridge Specific Plan EIR, the Specific Plan was expected to generate 114,783 daily trips, 7,960 AM peak hour trips and 11,999 PM peak hour trips. These trips are considered external trips outside of the Sunridge Specific Plan area.

The alternatives are anticipated to generate significantly less daily and peak hour trips than that modeled for the Sunridge Specific Plan, due to the smaller number of housing units proposed. Utilizing trip generation calculations associated with the development alternatives are based on trip-generation rates for Land Use Code (LUC) 210 Single Family Detached Housing as published in the ITE *Trip Generation Manual*. Table 3.7-2 illustrates the trip generation calculations associated with the Proposed Project Alternative.

<b>Table 3.7-2 Trip Generation Summary</b>							
	<b>Anatolia IV</b>	<b>Sunridge Village J</b>	<b>Grantline 208</b>	<b>Douglas Road 98</b>	<b>Douglas Road 103</b>	<b>Arista Del Sol</b>	<b>Total</b>
<b>Time Period/Direction</b>							
Number of Units	134	369	855	693	301	906	3,258
<b>Weekday Daily</b>	1,361	3,456	7,488	6,172	2,866	7,898	29,241
<b>Weekday AM Peak Hour:</b>							
Enter	26	67	152	124	55	161	585
Exit	78	201	456	371	165	483	1754
<b>Total</b>	<b>104</b>	<b>268</b>	<b>608</b>	<b>495</b>	<b>220</b>	<b>644</b>	<b>2,339</b>
<b>Weekday PM Peak Hour:</b>							
Enter	86	214	457	378	178	481	1794
Exit	51	126	268	222	105	283	1055
<b>Total</b>	<b>137</b>	<b>340</b>	<b>725</b>	<b>600</b>	<b>283</b>	<b>764</b>	<b>2,849</b>
<sup>a</sup> Land Use Code 210 (Single Family Detached Housing); ITE <i>Trip Generation</i> ; 8 <sup>th</sup> Edition; Washington, D.C.; 2008; rates based on number of units, Morning/Evening Peak Hour of Adjacent Street Traffic							

The Proposed Project Alternative is expected to generate 29,241 new daily trips; 2,339 new trips during the morning peak hour and 2,849 new trips during the evening peak hour. This volume constitutes only 27 percent of the daily external traffic volumes expected to be generated by the entire Sunridge Specific Plan. This volume constitutes between 25 and 32 percent of the traffic expected to be generated by the entire Specific Plan during the peak hours.

The Proposed Project Alternative would increase peak-hour and daily traffic volumes, resulting in level of service decreases at various roadway segments, intersections, and freeway ramps, including roadways that are already at LOS E and F. The LOS decreases are a **significant and unavoidable** impact.

**Reduced Footprint Alternative.** The Reduced Footprint Alternative would increase peak-hour and daily traffic volumes, resulting in level of service decreases at various roadway segments, intersections, and freeway ramps, including roadways that are already at LOS E and F. The LOS decreases are a **significant and unavoidable** impact.

Traffic impacts resulting from the Reduced Footprint Alternative would be less than those under the Proposed Project Alternative but remain significant and unavoidable.

**No Action Alternative.** The No Action Alternative would increase peak-hour and daily traffic volumes, resulting in level of service decreases at various roadway segments, intersections, and freeway ramps, including roadways that are already at LOS E and F. The LOS decreases are a **significant and unavoidable** impact.

Traffic impacts resulting from the Reduced Footprint Alternative would be less than those under the Proposed Project Alternative but remain significant and unavoidable.

## **Mitigation Measures for Impact 3.7-1 – Reduction of Level of Service**

### **Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative**

- Sunrise Boulevard north of White Rock Road is currently constructed to its ultimate width. As such, no feasible mitigation measures are available to increase daily capacity on this facility. All three alternatives shall participate on a fair share basis on any program implemented by the County, Caltrans, or other local agencies to reduce vehicle travel on Sunrise Boulevard.
- Widen Sunrise Boulevard from White Rock Road to Douglas Road from 4 lanes to 6 lanes, and from Douglas Road to Jackson Highway, from 2 lanes to 4 lanes. This improvement would increase capacity on Sunrise Boulevard to accommodate existing and project-alternative-generated traffic. This widening should occur when traffic volumes reach 90 percent of capacity of a four lane facility, or 32,400 daily vehicles, and 90 percent of capacity of a two-lane facility or 16,200.
- Widen Douglas Road 2 lanes to 4 lanes from Americanos Boulevard to access roads approximately 1,500 feet west of Sunrise Boulevard. This improvement would increase capacity on Douglas Road to accommodate primarily project alternative traffic. This widening should occur when traffic volumes reach 90 percent capacity for a two-lane facility, or 16,200 vehicles.
- Widen Folsom Boulevard to 6 lanes between Mather Field Road and Coloma Road to accommodate existing and project-alternative generated traffic.
- Widen sections of Hazel Avenue from Folsom Boulevard to Winding Way from its current four lanes to its ultimate width of six lanes to accommodate existing and project-alternative-generated traffic.



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## 3.8 NOISE

This section describes the affected environment, environmental consequences, and mitigation measures with respect to noise. The mechanics of sound and the regulatory framework for noise are also described.

### 3.8.1 AREA OF ANALYSIS

The area of analysis for noise is defined as the areas near the project sites that could be affected by sounds from the Proposed Project Alternative. To determine noise impacts, a study of noise levels in the existing project sites, and sound-creating activities from nearby aircraft and industrial operations facilities, and traffic, was reviewed.

### 3.8.2 MECHANICS OF SOUND

Noise is often defined as unwanted sound. Sound is a mechanical form of radiant energy transmitted by pressure waves in the air. It is characterized by two parameters: amplitude (loudness) and frequency (tone).

Amplitude is the difference between ambient air pressure and the peak pressure of the sound wave. It is measured in decibels (dB) on a logarithmic scale. For example, a 10 dB sound is 10 times the pressure difference of a 1 dB sound. Sound amplitudes from multiple sources add together in the following way: a 65 dB source of sound, when joined by another identical 65 dB source, results in sound with amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). A 10 dB increase in amplitude is perceived as a doubling of loudness and a 3 dB change in amplitude is the minimum audible difference is only perceptible to the average person.

Frequency is the number of fluctuations of the pressure wave per second. The unit of frequency is the Hertz (Hz). One Hz equals one cycle per second. The human ear is not equally sensitive to sounds of different frequencies. Sound waves below 16 Hz or above 20,000 Hz cannot be heard by the human ear. To approximate human sensitivity to audible frequencies, environmental sound is usually measured in A-weighted decibels (dBA). On this scale, the normal range of human hearing extends from approximately 10 dBA to approximately 140 dBA. Listed in Figure 3.8-1 are several examples of the noise levels associated with common noise sources.

The intensity of environmental noise fluctuates over time, and several descriptors of time-averaged noise levels are used. The three most commonly used descriptors are energy-equivalent noise level ( $L_{eq}$ ), day-night average noise level ( $L_{dn}$ ), and the community equivalent noise level (CNEL). The  $L_{eq}$  is a measure of the average energy content (intensity) of noise over a given period. Many communities use 24-hour descriptors of noise levels to regulate noise. The  $L_{dn}$  is the 24-hour average of the noise intensity, with a 10-dBA “penalty” added for nighttime noise (10 p.m.–7 a.m.) to account for the greater sensitivity to noise during this period. The CNEL is similar to  $L_{dn}$  but adds an additional 5-dBA “penalty” for evening noise (7–10 p.m.). Another descriptor that is commonly discussed is the single-event noise exposure level (SENEL), also referred to as the sound exposure level (SEL). The SENEL/SEL describes a receiver’s cumulative noise exposure from a single noise event, which is defined as an acoustical event of short duration (such as a backup beeper, the sound of an airplane traveling overhead, or a train whistle) and involves a change in sound pressure above a defined reference value (usually approximately 40 dBA). Noise analyses may also depend on measurements of the maximum instantaneous noise level during a specific period of time ( $L_{max}$ ) and the minimum instantaneous noise level during a specific period ( $L_{min}$ ).

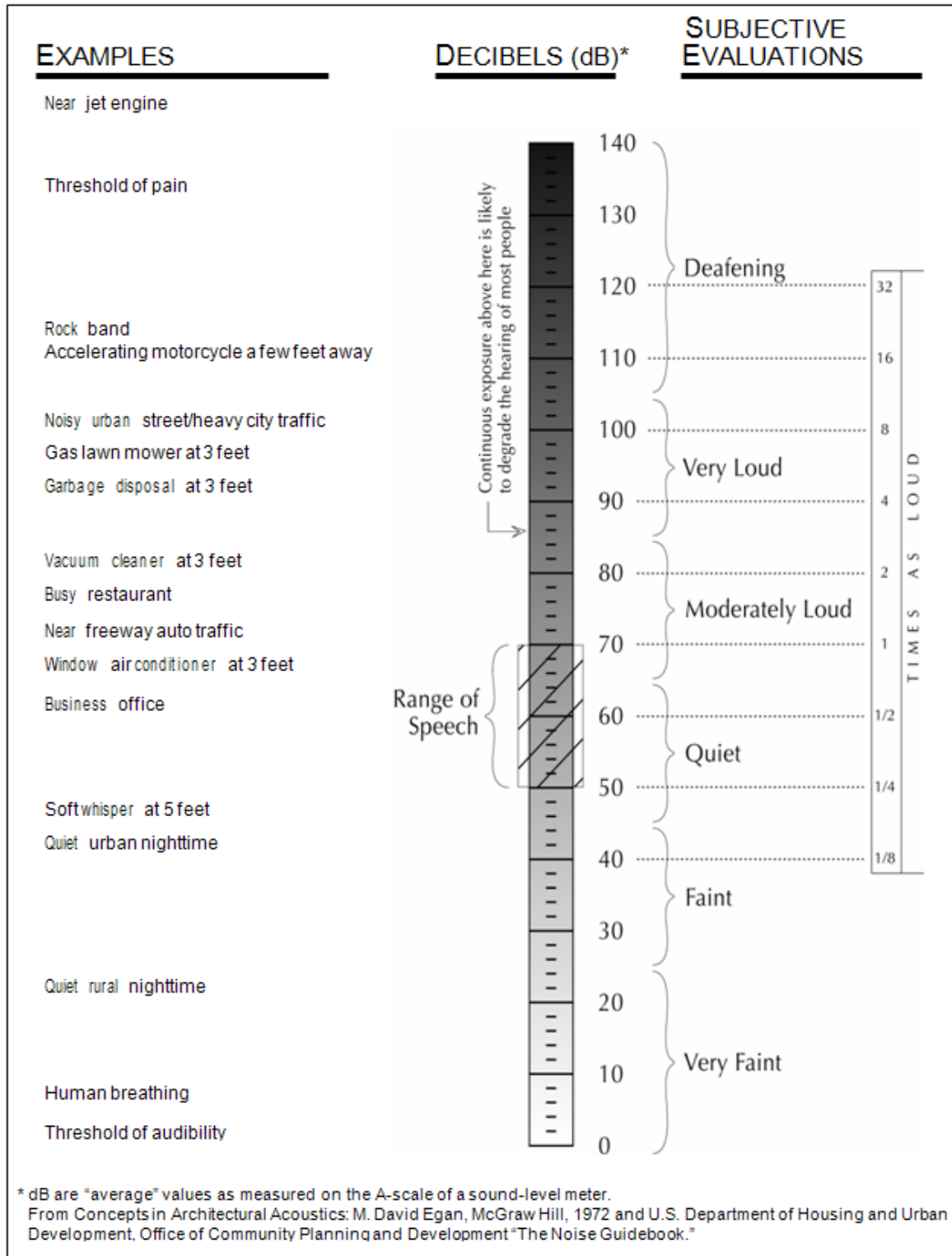


Figure 3.8-1 Example Noise Levels

Noise can be generated by a wide variety of sources-both mobile sources, such as automobiles, trucks, and airplanes, and stationary sources, such as machinery and industrial operations. Noise generated by mobile sources typically attenuates (is muffled or reduced) at a rate of 3.0 to 4.5 dBA per doubling of distance, depending on the ground surface and the number or type of objects between the noise source and the receiver. Hard and flat surfaces such as concrete or asphalt have an attenuation rate of 3.0 dBA per doubling of distance. Soft surfaces such as uneven or vegetated terrain have an attenuation rate of approximately 4.5 dBA per doubling of distance. Noise generated by stationary sources typically attenuates at a rate of 6.0 dBA per doubling of distance from the source.

Sound levels can be reduced by placing barriers between the noise source and the receiver. In general, barriers contribute to decreasing noise levels only when the structure breaks the “line of sight” between the source and the receiver. Buildings, concrete walls, and berms can all act as effective noise barriers. Wooden fences or broad areas of dense foliage also can reduce noise but are less effective than solid barriers.

The human response to noise is subjective. Community noise has often been cited in terms of inhibiting general well-being and contributing to undue stress and annoyance. The public health effects of noise arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels. The acceptability of noise levels is the basis for land use planning policies that prohibit exposure to excessive community noise levels.

Because construction activities typically are short term, the associated effects of construction-generated noise typically are limited to annoyance and interference with speech. In an exterior noise environment, noise levels in excess of 60 dBA are generally considered to have an appreciable degree of speech interference. The level at which speech interference occurs is based on an average sentence comprehension rate of approximately 98% at 5 meters. Greater speaker-listener distances would be possible indoors at the same level of vocal effort and speech intelligibility because sound pressure levels diminish more slowly than predicted by the inverse-square law, which is typically used in the exterior environment (USEPA, 1971).

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over differing individual experiences with noise. Thus, an important way to determine a person’s subjective reaction to a new noise is to compare the new noise to the existing environment to which one has adapted: the so-called “ambient” environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by the hearers. Regarding increases in A-weighted noise levels, knowledge of the following relationships will be helpful in understanding this analysis (USEPA, 1971):

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived by humans.
- Outside of the laboratory, a 3 dB change is considered a just-perceivable difference.
- A change in level of at least 5 dB is required before any noticeable change in community response would be expected.
- A 10 dB change is subjectively heard as approximately a doubling in loudness and would almost certainly cause an adverse change in community response.

### 3.8.3 AFFECTED ENVIRONMENT

The existing noise environment in and surrounding the Sunridge Specific Plan Properties is influenced primarily by noise from: vehicular traffic, aircraft noise from Mather Field, gunfire from the Cordova Shooting Center, American River Aggregates Plant, Kiefer Road Landfill, Sacramento Rendering Company, and activity at the Douglas Security Park. Traffic noise modeling and noise monitoring were conducted and presented in the Sunrise-Douglas Community Plan/Sunridge Specific Plan Environmental Impact Report and the Rio del Oro Specific Plan Project EIR/EIS (County of Sacramento, 2001; Rancho Cordova and USACE, 2006). The traffic modeling and noise monitoring assessments are relevant and appropriate for the Sunridge Specific Plan Properties and are incorporated by reference. A brief summary of the assessment is provided below.

#### 3.8.3.1 VEHICULAR TRAFFIC NOISE

The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used during preparation of the Sunrise-Douglas Community Plan/Sunridge Specific Plan Environmental Impact Report for the prediction of existing traffic noise levels in the vicinity (County of Sacramento, 2001). The FHWA Model was the analytical method currently favored for traffic noise prediction by most state and local agencies. The model was based upon the California Vehicle Noise (CALVENO) emission factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

Existing traffic data for area roadways were obtained from the County of Sacramento. Other assumptions regarding day/night traffic distributions, speed and truck mix are based upon file data and assumptions used in the Sacramento County Noise Element, which were also adopted in the Rancho Cordova Noise Element. The FHWA Model utilized data and assumptions used in the Sacramento County Noise Element. The FHWA Model input data for all major plan area roadways for existing conditions are provided in Table 3.8-1. Output from the model is presented in Table 3.8-2, which shows the calculated existing noise levels at a reference distance of 75 feet from the roadway centerlines, intended to represent the location of typical outdoor activity areas for residential developments. Table 3.8-2 also shows the calculated distances to the existing 60 and 65 dB  $L_{dn}$  contours for each of the area roadways (County of Sacramento, 2001).

An additional traffic noise study was conducted for the property north of the analysis area and presented in the Rio del Oro Specific Plan Project EIR/EIS (City of Rancho Cordova and USACE, 2006). Work performed for Rio del Oro predicted roadway traffic noise levels by performing calculations using the FHWA Traffic Noise Prediction Model, based on traffic data obtained from the traffic analysis prepared for project. Additional input data included day/night percentages of automobiles, medium-duty trucks, and heavy-duty trucks; vehicle speeds; ground attenuation factors; and roadway widths. Existing traffic noise levels for area roadway segments most affected by implementation of the alternatives are summarized in Table 3.8-3. The Rio del Oro Specific Plan Project EIR/EIS states that “actual noise levels will vary from day to day, dependent on various factors, including local traffic volumes, shielding from existing structures, variations in attenuation rates attributable to changes in surface parameters, and meteorological conditions.”

The studies performed for both the Sunrise-Douglas Community Plan/Sunridge Specific Plan GIR and Rio del Oro Specific Plan Project EIR/EIS indicate that noise levels near existing roadways in and around the area of analysis are in the range of speech, and would be considered to be moderately loud by

residents. These studies have been reviewed and the methodologies verified, such that the conclusions have been determined to be applicable to this EIS.

**Table 3.8-1  
FHWA Traffic Noise Prediction Model Inputs Existing Conditions**

Roadway Name	Segment Description	ADT	Day %	Night %	MT %	HT %	Speed, mph	Distance, feet	Offset, dB
Douglas Road	Eagles Nest Road to Sunrise Boulevard	2,000	87	13	2.5	2.5	55	75	0
Douglas Road	Sunrise Boulevard to Grantline Road	1,800	87	13	5	23	55	75	0
Grant Line Road	White Rock Road to Douglas Road	2,700	87	13	5	23	55	75	-1
Grant Line Road	Douglas Road to Kiefer Boulevard	3,500	87	13	5	23	55	75	0
Grant Line Road	Kiefer Boulevard to Jackson Road	4,500	87	13	5	23	55	75	0
Jackson Road	Grant Line Road to Sunrise Boulevard	11,100	87	13	2.8	6.2	55	75	-3
Sunrise Boulevard	Jackson Road to Kiefer Boulevard	14,300	87	13	2.5	2.5	55	75	2
Sunrise Boulevard	Kiefer Boulevard to Douglas Road	15,000	87	13	2.5	2.5	55	75	2
Kiefer Boulevard	Eagles Nest Road to Sunrise Boulevard	500	87	13	2.5	2.5	55	75	0
Kiefer Boulevard	Sunrise Boulevard to Grant Line Road	500	87	13	2.5	2.5	55	75	0
Kiefer Boulevard	Grant Line Road to Jackson Road	500	87	13	2.5	2.5	55	75	0

**Table 3.8-2  
Existing Traffic Noise Levels**

Roadway Name	Segment Description	L <sub>dn</sub> dB @ 75 feet	Distances to L <sub>dn</sub> Contours, feet	
			65 dB	60 dB
Douglas Road	Eagles Nest Road to Sunrise Boulevard	60.1	35	76
Douglas Road	Sunrise Boulevard to Grant Line Road	64.1	65	141
Grant Line Road	White Rock Road to Douglas Road	64.9	74	158
Grant Line Road	Douglas Road to Kiefer Boulevard	67.0	102	220
Grant Line Road	Kiefer Boulevard to Jackson Road	68.1	121	260

<b>Table 3.8-2</b> <b>Existing Traffic Noise Levels (continued)</b>				
Roadway Name	Segment Description	L <sub>dn</sub> dB @ 75 feet	Distances to L <sub>dn</sub> Contours, feet	
			65 dB	60 dB
Jackson Road	Grant Line Road to Sunrise Boulevard	65.8	84	181
Sunrise Boulevard	Jackson Road to Kiefer Boulevard	70.7	179	385
Sunrise Boulevard	Kiefer Boulevard to Douglas Road	70.9	184	397
Kiefer Boulevard	Eagles Nest Road to Sunrise Boulevard	54.1	14	30
Kiefer Boulevard	Sunrise Boulevard to Grant Line Road	54.1	14	30
Kiefer Boulevard	Grant Line Road to Jackson Road	55.3	17	36
Notes: dB = decibel; L <sub>dn</sub> = day-night average Source: County of Sacramento 2001				

### 3.8.3.2 AIRCRAFT NOISE FROM MATHER FIELD

Mather Field (formerly Mather Air Force Base [AFB]) has been open as a public-use air cargo and general aviation airport since May 5, 1995. Managed by the County of Sacramento Department of Airports, the airport, which operates 24 hours per day, consists of two primary runways, one 11,300 feet long and the other 6,100 feet long, generally aligned in a northeast-to-southwest direction. Mather Field is a joint-use facility that supports both military and commercial operations, and it is rapidly developing as an air cargo depot. The airport includes approximately 40 acres of exclusive air cargo ramp space.

Following the closure of Mather AFB in 1988, Sacramento County adopted a reuse plan for Mather Airport in fall 1991. The Airport Land Use Compatibility Plan (ALUCP) for Mather Airport was subsequently adopted in May 1997. As depicted in Figure 3.8-2, the project site is not located within the currently adopted 60 dBA CNEL noise contours of the ALUCP for Mather Airport. The noise contours were revised to account for existing and projected changes in aircraft operations that have occurred since development of the ALUCP for Mather Airport.

### 3.8.3.3 CORDOVA SHOOTING CENTER

The shooting center is described as a full-service shooting facility supporting the use of rifles, pistols, skeet, trap, and sporting clays. Hours of operation vary by season, but are generally limited to the daytime hours of 10 a.m. to 8 p.m. on weekdays and 9 a.m. to 6 p.m. on weekends. Shooting events such as skeet tournaments and club gatherings occasionally occur during the evening hours.

Noise levels generated by weapons fire depend on the weapons used, local shielding, and atmospheric conditions. Based on past noise measurements conducted for the Rio del Oro Specific Plan Project EIR/EIS (City of Rancho Cordova, USACE, EDAW 2006), at the Cordova Shooting Center, noise levels from weapons fire ranged from approximately 97 to 112 dBA per round at approximately 50 feet. Based on these noise levels, predicted maximum noise levels of 70 dBA could occur at a distance of one-half to 1 mile from this facility, depending on local shielding and atmospheric conditions (County of Sacramento 1993). During the periods for which daytime ambient-noise monitoring was being conducted, intermittent noise generated by weapons fire at the firing range, though discernible at times, was largely masked by noise emanating from vehicle traffic on nearby roadways (e.g., Sunrise Boulevard and Douglas Road). The center is over 1.3 miles from the nearest edge of the project site.

**Table 3.8-3  
Summary of Modeled Existing Traffic Noise Levels**

Roadway Segment			Between	CNEL/Ldn (dBA)	Distance (ft) from Roadway				
				50 Feet from	Centerline to CNEL/Ldn (dBA)				
					Centerline of	70	65	60	55
SR 16	Excelsior Road	Eagles Nest Road	72.42	81.0	174.0	374.7	807.0		
SR 16	Sunrise Boulevard	Grant Line Road	73.73	98.9	212.6	457.9	986.2		
Kiefer Boulevard	Grant Line Road	North of SR 16	62.42	0.0	0.0	80.9	174.0		
Mather Boulevard	Femoyer Street	Douglas Road	67.65	0.0	83.8	180.2	174.0		
Douglas Road	Mather Boulevard	Sunrise Boulevard	68.84	0.0	100.6	216.4	466.0		
Douglas Road	Sunrise Boulevard	Grant Line Road	65.47	0	60.1	129	277.7		
International Drive	South White Rock Road	Zinfandel Drive	69.59	64.1	133.7	286.0	615.1		
International Drive	Zinfandel Drive	Sunrise Boulevard	67.12	0.0	92.5	196.3	421.5		
White Rock Road	Zinfandel Drive	Sunrise Boulevard	70.51	85.6	175.4	373.4	802.3		
White Rock Road	Sunrise Boulevard	Grant Line Road	68.29	0.0	92.4	198.7	427.9		
Folsom Boulevard	Zinfandel Drive	Sunrise Boulevard	71.87	89.2	189.0	405.7	873.1		
Folsom Boulevard	Sunrise Boulevard	Hazel Avenue	73.09	89.7	192.9	415.2	894.4		
Mather Field Road	Folsom Boulevard	U.S. 50 WB ramps	73.01	105.6	224.9	483.2	1,040.2		
Mather Field Road	U.S. 50 EB ramps	International Drive	73.26	125.9	265.2	568.3	1,222.8		
Zinfandel Drive	Folsom Boulevard	U.S. 50 WB ramps	72.35	95.8	203.5	437.0	940.6		
Zinfandel Drive	U.S. 50 EB ramps	White Rock Road	74.21	144.6	306.1	656.9	1,413.8		
Zinfandel Drive	White Rock Road	International Drive	70.93	90.6	186.6	397.9	855.2		
Sunrise Boulevard	Gold Country Boulevard	Coloma Road	76.78	212.1	453.3	974.7	2,098.8		
Sunrise Boulevard	Coloma Road	U.S. 50 WB ramps	77.14	224.0	479.1	1030.5	2,218.9		
Sunrise Boulevard	U.S. 50 EB ramps	Folsom Boulevard	75.15	166.3	353.5	759.4	1,634.7		
Sunrise Boulevard	Folsom Boulevard	White Rock Road	73.69	134.0	283.0	606.9	1,306.0		
Sunrise Boulevard	White Rock Road	Douglas Road	74.69	135.9	290.6	625.1	1,346.0		
Sunrise Boulevard	Douglas Road	SR 16	74.86	117.6	253.1	545.0	1,173.9		
Sunrise Boulevard	SR 16	Grant Line Road	71.20	67.2	114.4	310.7	669.2		
Hazel Avenue	Winding Way	U.S. 50 WB ramps	76.04	166.6	357.2	768.6	1,655.2		
Grant Line Road	White Rock Road	Douglas Road	69.64	53.0	113.5	244.3	526.1		
Grant Line Road	Douglas Road	SR 16	70.12	57.0	122.2	262.9	566.3		
Grant Line Road	SR 16	Sunrise Boulevard	69.34	50.6	108.5	233.3	502.5		
U.S. 50	Mather Field Road	Zinfandel Drive	82.10	593.7	1,273.7	2741.2	5,903.4		
U.S. 50	Zinfandel Drive	Sunrise Boulevard	81.46	539.0	4,455.4	2486.1	5,353.8		
U.S. 50	Sunrise Boulevard	Hazel Avenue	81.02	466.2	1,000.1	2152.3	4,635.2		
U.S. 50	Hazel Avenue	Folsom Boulevard	81.00	424.3	911.4	1,961.9	4,225.5		

**Notes:**

CNEL = community equivalent noise level; dBA = A-weighted decibels; EB = eastbound; ft = feet; Ldn = day-night average noise level;

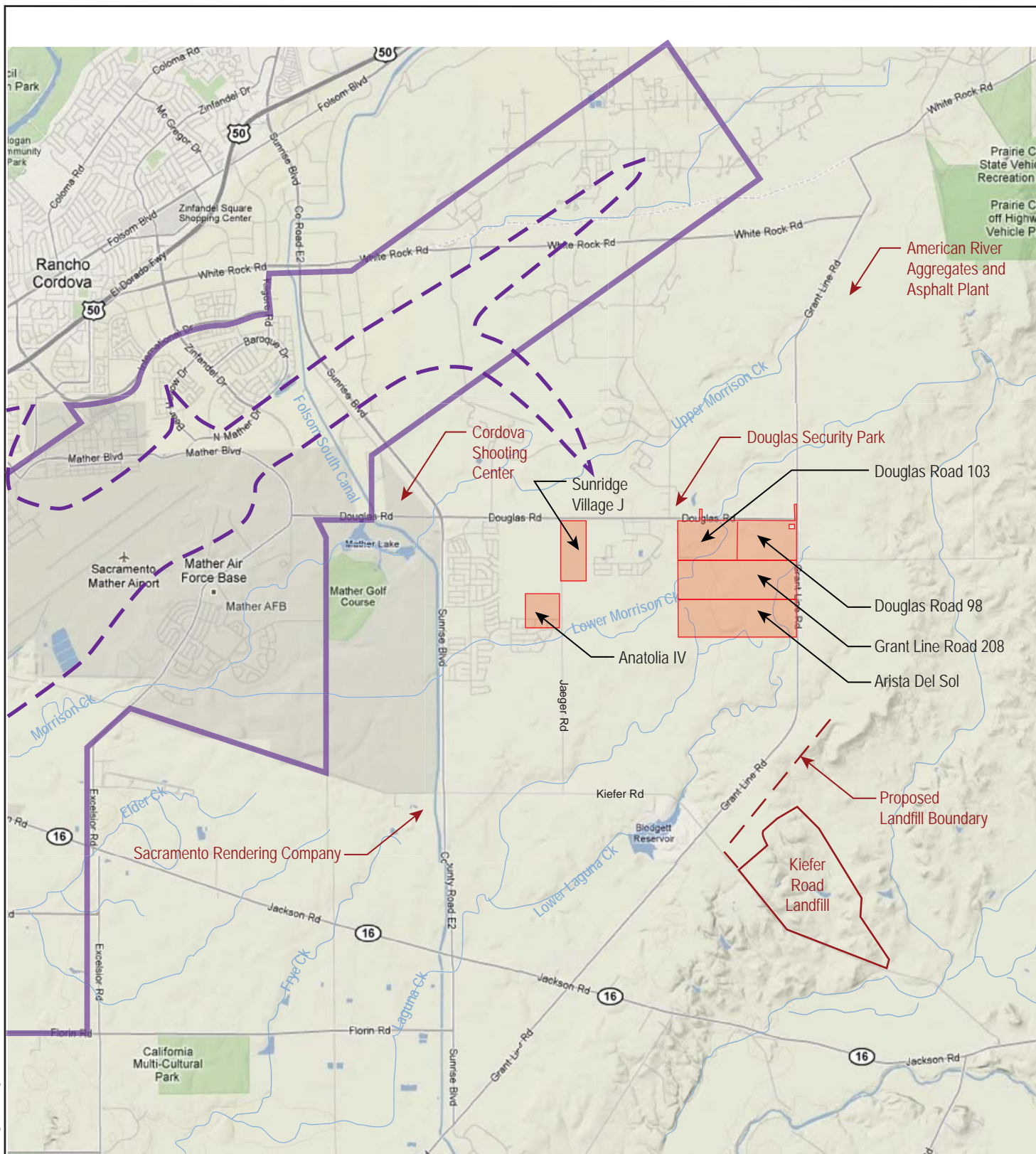
SR = State Route; U.S. 50 = U.S. Highway 50; WB = westbound

Traffic noise levels were modeled using the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) based on traffic data obtained from the traffic analysis prepared for the Rio del Oro EIS.

Source: Data provided by EDAW in 2005



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Source: Google Maps, terrain

#### **3.8.3.4 AMERICAN RIVER AGGREGATES AND ASPHALT PLANT**

The American River Aggregates and Asphalt Plant is located northeast of the analysis area, east of Grant Line Road. Operations at the plant include rock crushing, sorting, and movement by loaders, bulldozers, and dump trucks. Noise from the plant operations can be heard at the project site. Heavy trucks also cross Grant Line Road from the plant site to the parcel west of Grant Line Road. Noise from these truck movements is also audible at the project site.

Plant operations may occur 24 hours a day, especially during warmer months. Plant operations are reported to occur from midnight to 1:30 p.m. Noise due to dump truck movements on the plant site was measured at 72 to 79 dBA on the west side of Grant Line Road. This condition could occur at the project site boundary if heavy equipment were to be operated at the western or southern ends of the plant property. Noise from generalized sources at the plant was measured at 56 dBA at the west property boundary of the plant (County of Sacramento, 2001).

#### **3.8.3.5 KIEFER ROAD LANDFILL**

Sacramento County operates the Kiefer Road Landfill, which is located east of Grant Line Road at Kiefer Boulevard. Operations at the landfill include movement of heavy equipment and the arrival of approximately 500 garbage trucks each workday, and 275 on the weekend. The landfill operates seven days a week, daytime hours only. Current landfill operations are over 1.7 miles away from the nearest edge of the project site, but future plans involve moving landfill activity closer to Grant Line Road (County of Sacramento, 2001).

Noise is produced by the vehicles and heavy equipment using or operating the landfill. No other significant noise sources are present. At present, during usual operating hours, the noise environment is dominated by trucks on area roadways. As landfill equipment approaches the site boundaries, it can become a significant factor in the noise exposure. The current noise exposure in the vicinity of the landfill is best described by the traffic noise on local roads.

#### **3.8.3.6 SACRAMENTO RENDERING COMPANY**

The Sacramento Rendering Company plant is located on Kiefer Boulevard between Eagles Nest Road and Sunrise Boulevard. Noise sources at the plant include grinders, boilers, and scrubbers. The plant operates 24-hours a day on weekdays, and midnight to mid-afternoon on Saturdays. The sound level at the plant boundary is approximately 50 dBA at night at the plant entrance near Kiefer Boulevard (County of Sacramento, 2001).

#### **3.8.3.7 DOUGLAS SECURITY PARK**

The Douglas Security Park is located on the north side of Douglas Road. This industrial park currently includes fifteen uses; the two closest to the project site are AIM, Inc., and Precision West.

The AIM facility remanufactures automotive alternators and starters, and operates during the daytime on weekdays. Noise producing machinery is kept inside the shop building and includes drills, lathes, grinders, and a milling machine. The Precision West facility is a metal stamping operation which uses punch presses for tool and die stamping.

Noise levels associated with industrial land uses can vary greatly depending on the activities conducted. Activities involving the use of heavy-duty equipment such as front-end loaders, forklifts, and diesel-

powered trucks are common noise sources typically associated with these land uses. Noise typically associated with industrial operations, including the use of heavy-duty equipment, can reach maximum levels of approximately 85 dBA at 50 feet (USEPA, 1971).

### **3.8.4 REGULATORY FRAMEWORK**

Noise levels are regulated by Federal and state guidelines, as well as the Mather Airport Land Use Compatibility Plan, and the City of Rancho Cordova's noise ordinance. These regulations protect residents from unnecessary noise levels in the area of analysis.

#### **3.8.4.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS**

##### **U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT**

The guidelines of the U.S. Department of Housing and Urban Development (HUD) for the acceptability of residential land uses are established in "Environmental Criteria and Standards" (24 Code of Federal Regulations (CFR) Part 51). These guidelines identify an exterior noise exposure threshold of 65 dBA  $L_{dn}$ . Noise levels of 65 to 75 dBA  $L_{dn}$  are considered normally acceptable, provided that appropriate sound attenuation is provided to reduce interior noise levels to within acceptable levels. Noise levels above 75 dBA  $L_{dn}$  are considered unacceptable. The goal of the interior noise levels is 45 dBA  $L_{dn}$ . These guidelines apply only to new construction supported by HUD grants and are not binding upon local communities.

#### **3.8.4.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS**

##### **CALIFORNIA BUILDING CODE**

Title 24 of the California Code of Regulations establishes standards governing interior noise levels that apply to all new multi-family residential units in California. These standards require that acoustical studies be performed before construction begins at building locations where the existing exterior noise levels exceed 60 dBA  $L_{dn}$ . Such acoustical studies are required to establish mitigation measures that will limit maximum  $L_{dn}$  to 45 dBA in any inhabitable room. Although there are no generally applicable interior noise standards pertinent to all uses, many communities in California have adopted a 45 dBA  $L_{dn}$  as an upper limit on interior noise in all residential units.

##### **STATE OF CALIFORNIA GENERAL PLAN GUIDELINES**

The State of California General Plan Guidelines, published by the Governor's Office of Planning and Research (2003), provides guidance for the acceptability of projects within specific CNEL/ $L_{dn}$  contours. Table 3.8-4 summarizes acceptable and unacceptable community noise exposure limits for various land use categories. Generally, residential uses are considered to be acceptable in areas where exterior noise levels do not exceed 60 dBA CNEL/ $L_{dn}$ . Residential uses are normally unacceptable in areas exceeding 70 dBA  $L_{dn}$  and conditionally acceptable within 55 to 70 dBA  $L_{dn}$ . Schools are normally acceptable in areas up to 70 dBA CNEL and normally unacceptable in areas exceeding 70 dBA CNEL. Commercial uses are normally acceptable in areas up to 70 dBA CNEL. Between 67.5 and 77.5 dBA CNEL, commercial uses are conditionally acceptable, depending on the noise insulation features and the noise reduction requirements. The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

<b>Table 3.8-4</b> <b>State of California Noise Compatibility Guidelines by Land Use Category</b>				
Land Use Category	Community Noise Exposure (L <sub>dn</sub> or CNEL, dBA)			
	Normally Acceptable <sup>1</sup>	Conditionally Acceptable <sup>2</sup>	Normally Unacceptable <sup>3</sup>	Clearly Unacceptable <sup>4</sup>
Residential—Low-Density Single-Family, Duplex, Mobile Home	<60	55–70	70–75	75+
Residential—Multiple-Family	<65	60–70	70–75	75+
Transient Lodging, Motel, Hotel	<65	60–70	70–80	80+
School, Library, Church, Hospital, Nursing Home	<70	60–70	70–80	80+
Auditorium, Concert Hall, Amphitheater		<70	65+	
Sports Arenas, Outdoor Spectator Sports		<75	70+	
Playground, Neighborhood Park	<70		67.5–75	72.5+
Golf Courses, Stable, Water Recreation, Cemetery	<75		70–80	80+
Office Building, Business Commercial, and Professional	<70	67.5–77.5	75+	
Industrial, Manufacturing, Utilities, Agriculture	<75	70–80	75+	
Notes: CNEL = community equivalent noise level; dBA = A-weighted decibels; L <sub>dn</sub> = day-night average noise level <sup>1</sup> Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements. <sup>2</sup> New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice. <sup>3</sup> New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded. <sup>4</sup> New construction or development should generally not be undertaken. Source: Governor's Office of Planning and Research 2003				

### 3.8.4.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

#### MATHER AIRPORT LAND USE COMPATIBILITY PLAN

The State of California has adopted airport noise and safety standards that are implemented through Comprehensive Land Use Plans (CLUPs) prepared for public-use airports. The CLUPs are prepared and maintained by the Airport Land Use Commissions (ALUCs). In Sacramento County, the Sacramento Area Council of Governments (SACOG) serves as the ALUC. The noise and safety standards identified in the CLUPs for local airports are implemented through the control of land use around airports with regard to the noise, safety, and height restrictions. The SACOG also works with cities and counties to ensure consistency between local land use plans and CLUPs developed for local airports.

The ALUCP for Mather Airport, formerly called the Mather Airport CLUP, was adopted in May 1997 and includes regional policies for land use compatibility with respect to aircraft noise. The ALUCP for Mather Airport requires that as development occurs in the area near the airport, affected cities and counties should

evaluate the impact of aircraft noise on proposed development. The ALUCP prohibits new residential development within the 65 dBA CNEL noise contours.

The County is currently in the process of developing the Mather Airport Master Plan. The Master Plan will be used to guide airport development over the next 20 years, while attempting to resolve related aviation, environmental, and socioeconomic issues existing in the community. One of the primary issues to be addressed in the plan relates to the exposure of citizens in nearby communities to noise generated by aircraft on approach and departure routes from Mather Airport.

## **RANCHO CORDOVA GENERAL PLAN**

The City of Rancho Cordova was incorporated in July 2003, and the City adopted the Rancho Cordova General Plan in June 2006. The Rancho Cordova General Plan Noise Element identifies noise criteria for various stationary and transportation noise sources. The Noise Element of the Rancho Cordova General Plan supersedes the Noise Element of the County of Sacramento General Plan except where the Rancho Cordova General Plan is silent on an issue (e.g., the Mather Airport Policy Area [MAPA], as described below).

Goals and policies of the Rancho Cordova General Plan relating to noise that Rancho Cordova has found to be applicable to the alternatives. Performance standards for stationary noise sources and maximum allowable noise exposure from transportation noise sources, as specified in the Noise Element of the Rancho Cordova General Plan, are included below as Tables 3.8-5, 3.8-6, and 3.8-7 because they are included in the thresholds for determining the significance of impacts for this analysis.

<b>Table 3.8-5 Performance Standards for Typical Stationary Noise Sources – Rancho Cordova General Plan Noise Element</b>		
<b>Noise Level Descriptor</b>	<b>Daytime (7 a.m. - 10 p.m.)</b>	<b>Nighttime (7 a.m. - 10 p.m.)</b>
Hourly $L_{eq}$ dBA	55	45
Notes: dBA = decibels; $L_{eq}$ = energy-equivalent noise level Source: City of Rancho Cordova 2005a		

<b>Table 3.8-6 Performance Standards for Stationary Noise Sources that are Tonal, Impulsive, Repetitive, or Consist Primarily of Speech or Music – Rancho Cordova General Plan Noise Element</b>		
<b>Noise Level Descriptor</b>	<b>Daytime (7 a.m. - 10 p.m.)</b>	<b>Nighttime (7 a.m. - 10 p.m.)</b>
Hourly $L_{eq}$ dBA	50	40
Notes: dBA = decibels; $L_{eq}$ = energy-equivalent noise level Source: City of Rancho Cordova 2005a		

<b>Table 3.8-7</b> <b>Maximum Allowable Noise Exposure, Transportation Noise Sources –</b> <b>Rancho Cordova General Plan Noise Element</b>			
Land Use	Outdoor Activity Areas <sup>1</sup>	Interior Space	
	L <sub>dn</sub> /CNEL, dBA	L <sub>dn</sub> /CNEL, dBA	L <sub>eq</sub> , dBA <sup>2</sup>
Residential	60 <sup>3</sup>	45	-
Residential subject to noise from railroad tracks, aircraft overflights, or similar noise sources that produce clearly identifiable, discrete noise events (the passing of a single train, as opposed to relatively steady noise sources such as roadway)	60 <sup>3</sup>	40 <sup>5</sup>	-
Transient Lodging	60 <sup>4</sup>	45	-
Hospitals, Nursing Homes	60 <sup>3</sup>	45	-
Theaters, Auditorium, Music Halls	-	-	35
Churches, Meeting Hall	60 <sup>3</sup>	-	40
Office Buildings	-	-	45
Schools, Libraries, Museums	-	-	45
Playground, Neighborhood Parks	70	-	-
Notes: CNEL = community equivalent noise level; dBA = A-weighted decibels; L <sub>dn</sub> = day-night average noise level; L <sub>eq</sub> = energy-equivalent noise level <sup>1</sup> Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use. Where it is not practical to mitigate exterior noise levels at patio or balconies of apartment complexes, a common area such as a pool or recreation area may be designated as the outdoor activity area. <sup>2</sup> As determined for a typical worst-case hour during periods of use. <sup>3</sup> Where it is not possible to reduce noise in outdoor activity areas to 60 dB L <sub>dn</sub> /CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L <sub>dn</sub> /CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table. <sup>4</sup> In the case of hotel/motel facilities or other transient lodging, outdoor activity areas such as pool areas may not be included in the project design. In these cases, only the interior noise level criterion will apply. <sup>5</sup> The intent of this noise standards is to provide increased protection against sleep disturbance for residences located near railroad tracks.			

The Noise Element of the Sacramento County General Plan identifies the MAPA for properties located in the vicinity of Mather Field. The MAPA was approved by the Sacramento County Board of Supervisors in 1998 and is intended to create additional protection beyond the restrictions described in the ALUCP for Mather Airport. In addition to prohibiting new residential development within the 65 dBA CNEL contour, per the ALUCP for Mather Airport, the MAPA prohibits new residential development within the 60 dBA CNEL contour. While Mather Field is not located within the City of Rancho Cordova current boundaries, the policies are incorporated into the Rancho Cordova General Plan for land within Rancho Cordova. As shown in Figure 3.8-2, the project site is located outside the 60 dBA CNEL contour. In addition, new residential development within the MAPA, but outside the 60 dBA CNEL contour, may be approved but will be subject to the following conditions:

- Provision of minimum noise insulation to achieve 45 dB within new residential dwellings, including detached single-family dwellings, with windows closed in any habitable room;
- Notification in the public report prepared by the California Department of Real Estate disclosing to prospective buyers that the parcel is located within the MAPA; and

- An aviation easement prepared by the County Counsel's Office, granted to the Sacramento County, recorded with the County Recorder, and filed with the County Department of Airports. Such an aviation easement shall acknowledge the property location within the MAPA and shall grant the right of flight and unobstructed passage of all aircraft into and out of Mather Airport.

## CITY OF RANCHO CORDOVA NOISE ORDINANCE

The Rancho Cordova Noise Ordinance establishes maximum allowable exterior and interior noise levels for affected land uses. The standards from the Rancho Cordova Noise Ordinance are summarized in Table 3.8-8. The ordinance generally limits exterior noise levels (measured at boundary of residential land and agricultural land uses) to a maximum of 55 dBA during any cumulative 30-minute period during the daytime hours (7 a.m. to 10 p.m.), and 50 dBA during any cumulative 30-minute period during the nighttime hours (10 p.m. to 7 a.m.). The ordinance sets somewhat higher noise limits for noise of shorter duration; however, noise shall not exceed 75 dBA during the day and 70 dBA at night. Activities generally considered to be exempt from the noise standards include construction activities (provided that they occur between the daytime hours of 7 a.m. to 6 p.m., Monday through Saturday, and 9 a.m. to 6 p.m. on Sunday), school athletic and entertainment events, activities conducted on public parks and playgrounds, and transportation noise.

<b>Table 3.8-8</b> <b>City of Rancho Cordova Noise Control Ordinance Standards</b>			
Land Use	Period of Measurement	Maximum Acceptable Noise Standards	
		Exterior Noise	Interior Noise
Residential, School, Church, Hospital, Agricultural Land Uses	7 a.m. to 10 p.m.	55 dBA <sup>2</sup>	-
	10 p.m. to 7 a.m.	50 dBA <sup>2</sup>	-
Apartment, Condominium, Townhouse, Duplex, or Multidwelling Unit	10 p.m. to 7 a.m. <sup>3</sup>		
	5 minutes/hour	-	45 dBA
	15 minutes/hour		50 dBA
	Any period of time		55 dBA
Notes: dBA = A-weighted decibels <sup>1</sup> The following noise standards, unless otherwise specifically indicated in the City of Rancho Cordova Municipal Code, shall apply to all properties within a designated noise area. <sup>2</sup> Cumulative duration of intrusive sound: It is unlawful for any person within the city to create any noise that causes the noise level on the affected property, when measured in the designated noise area, to exceed for the duration of time set forth following, the specified exterior noise standards in any one hour by (noise limits shall be reduced by 5 dBA for impulsive or simple tone noise, or noise consisting of speech or music): A. 30 minutes: +0 dBA B. 15 minutes: +5 dBA C. 5 minutes: +10 dBA D. 1 minute: +15 dBA E. Level not to be exceeded for any time: +20 dBA In addition to the above standards, interfering noise at schools, churches, or hospitals, while the same is in use, that is 10 dBA or more greater than the ambient noise level at the building, shall be deemed excessive and unlawful. Residential-use HVAC [heating, ventilation, and air conditioning] system equipment, such as pumps, fans, air conditioners, and cooling towers, shall not exceed 60 dBA at any point at least 1 foot inside the property line of the affected residential or agricultural property line, or 55 dBA when measured in the center of a neighboring patio or at the exterior window of the affected residential unit. <sup>3</sup> Based on cumulative periods of time during any one hour. Interior noise levels, when measured in the neighboring unit, shall not exceed the specified standards for the corresponding cumulative period of time during any hour. Source: City of Rancho Cordova Municipal Code, Noise Control Ordinance			



## **3.8.5 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES**

This section describes the potential environmental consequences related to noise from the alternatives. This section describes the impact's thresholds of significance, the methodology used for analysis, and the impact analyses.

### **3.8.5.1 THRESHOLDS OF SIGNIFICANCE**

The thresholds for determining the significance of impacts for this analysis are based on factors taken into account under the National Environmental Policy Act (NEPA) to determine the significance of an action in terms of its context and the intensity of its effects. A noise impact is considered significant if implementation of the alternatives under consideration would do any of the following:

- Result in short-term noise levels during construction that would exceed applicable Rancho Cordova noise standards (Tables 3.8-5, 3.8-6, and 3.8-7) or result in increased levels of annoyance or sleep disruption during noise-sensitive periods of the day (for purposes of this analysis, between 7 p.m. and 7 a.m.);
- Result in long-term stationary-source noise levels that would exceed applicable Rancho Cordova noise standards (Tables 3.8-5 and 3.8-6);
- Result in a noticeable increase in traffic noise levels (i.e., 3 dBA CNEL or greater) or contribute to existing or predicted traffic noise levels that exceed applicable noise standards (Table 3.8-7) at noise-sensitive receptors (persons and land uses);
- Result in predicted noise levels at on-site receptors exceeding applicable noise criteria for land use compatibility (Table 3.8-8); or
- Expose on-site receptors to single-event aircraft noise that would result in potential speech interference or sleep disruption. For purposes of this analysis, speech interference and sleep disruption would be anticipated to occur at noise levels of 60 dBA and 80 dBA SEL, respectively (Caltrans, 2002, FICON, 1992).

The land use compatibility noise criteria in the Rancho Cordova General Plan are listed in Table 3.8-8. Additional noise standards, including the State of California interior noise standards for multifamily residential dwellings (Title 24 of the California Code of Regulations) and the Rancho Cordova noise standards for non-transportation noise sources (Tables 3.8-4, 3.8-5, and 3.8-6), were also taken into consideration.

### **3.8.5.2 ANALYSIS METHODOLOGY**

Noise analyses were conducted in the Rio del Oro Specific Plan Project EIR/EIS (City of Rancho Cordova and USACE, 2006) and in the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR (County of Sacramento, 2001). The Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR utilized existing information to analyze impacts, while the Rio del Oro Specific Plan Project EIR/EIS utilized the following approach:

Construction-noise and stationary-source noise impacts were calculated based on the distance from source to receptor, assuming an average noise attenuation rate of 6 dBA per doubling of distance. The FHWA Roadway Noise Prediction Model (FHWA-RD-77-108) was used to

calculate traffic noise levels along affected roadways, based on estimates of average daily traffic volumes obtained from the traffic analysis prepared for this project. Increases in traffic noise levels attributable to the proposed project and alternatives under consideration were calculated by comparing the predicted noise levels at 50 feet from the centerline of the near travel lane with and without project-generated traffic, under baseline conditions.

### 3.8.5.3 IMPACT ANALYSIS

**IMPACT3.8-1 – Temporary exposure to construction generated noise.** *Construction activities could temporarily exceed applicable standards at nearby noise-sensitive receptors.*

**Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative-** Under all three alternatives, development occurs. The development under the alternatives includes primarily residential land uses, with some commercial, schools, and open space. Construction of on-site public services, utilities, and other infrastructure improvements, such as roadways and bicycle paths, would be needed to support development of the project. Off-site improvements for proposed roadway alignments and utility construction would also be necessary, including new buildings, parking lots, utility relocations and installations, and roadway construction.

Construction noise typically occurs intermittently and varies depending upon the nature or phase of construction (e.g., demolition/land clearing, grading and excavation, erection). Construction noise in any one particular area would be temporary and would include noise from activities such as site preparation, truck hauling of material, pouring of concrete, and use of power tools. Noise would also be generated by construction equipment, including earthmovers, material handlers, and portable generators, and could reach high levels for brief periods. Although noise ranges are generally similar for all construction phases, the grading phase tends to involve the most equipment. The U.S. Environmental Protection Agency (USEPA) has found that the noisiest equipment types operating at construction sites typically range from 88 dBA to 91 dBA  $L_{max}$  at 50 feet (Table 3.8-9). Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Average noise levels at construction sites typically range from approximately 65 to 89 dBA  $L_{eq}$  at 50 feet, depending on the activities performed (USEPA, 1971).

The Rancho Cordova Noise Ordinance restricts construction operations to the hours of 7 a.m. to 6 p.m. Monday through Saturday and 9 a.m. to 6 p.m. on Sundays. Construction activities outside this period would be required to comply with the standards in the noise ordinance and performance standards in the Rancho Cordova General Plan Noise Element. Activities occurring during the more noise-sensitive evening and nighttime hours of 6 p.m. to 7 a.m. Monday through Saturday or 6 p.m. to 9 a.m. on Sunday are of increased concern given the potential for increased levels of annoyance and disruption to residents living south of Douglas Road in the Sunridge Specific Plan area. In addition, implementation a phased development of the site would result in potential disruption of on-site sensitive receptors. It is important to note that currently the only noise-sensitive land uses are the newly developing residential areas south of Douglas Road in the Sunridge Specific Plan area. However, phased development of the Sunridge Specific Plan Properties would result in potential noise conflicts.

<b>Table 3.8-9 Construction Equipment Noise Levels</b>		
Type of Equipment	Typical Noise Level (dBA) at 50 feet	
	Without Feasible Noise Control	With Feasible Noise Control <sup>1</sup>
Dozer or Tractor	80	75
Excavator	88	80
Compactor	82	75
Front-end Loader	79	75
Backhoe	85	75
Grader	85	75
Crane	83	75
Generator	78	75
Truck	91	75
Notes: dBA = A-weighted decibels <sup>1</sup> Feasible noise control includes the use of intake mufflers, exhaust mufflers, and engine shrouds in accordance with manufacturer's specifications. Source: EPA 1971		

In addition, construction operations occurring during the daytime hours and in the vicinity of schools or other noise-sensitive daytime land uses such as childcare and convalescent care facilities, hospitals, residences, or places of worship may result in increased interior noise levels. Increases in interior daytime noise levels in excess of 45 dBA  $L_{eq}$ , particularly within school classrooms, are typically considered to result in a potentially significant noise impact (Caltrans, 2002). Assuming an average exterior-to-interior noise reduction of 20 dBA (with windows closed), exterior construction-generated noise levels in excess of 65 dBA at the façade of a building would be considered to result in potential increases in interior noise levels in excess of 45 dBA  $L_{eq}$ . Based on this same assumption, and assuming a maximum construction noise level of 89 dBA  $L_{eq}$  and an average attenuation rate of 6 dBA per doubling of distance from the source, construction activities located within approximately 800 feet of daytime noise-sensitive receptors could result in interior noise levels in excess of 45 dBA  $L_{eq}$ . Construction-generated noise would therefore be considered to result in a **direct, potentially significant** temporary noise impact on nearby noise-sensitive land uses. **No indirect** impacts would occur.

**Mitigation Measure 3.8-1: Implement measures to prevent exposure of sensitive receptors to temporary construction-generated noise.**

To reduce impacts associated with noise generated during construction activities, the project applicant(s) for all project phases shall conform to the following requirements imposed by City noise ordinances:

- Noise-generating construction operations shall be limited to the hours between 7 a.m. and 7 p.m. Monday through Friday, and between 8 a.m. and 6 p.m. on Saturday and Sunday.
- All construction equipment and equipment staging areas shall be located as far as possible from nearby noise-sensitive land uses.
- All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.

- All motorized construction equipment shall be shut down when not in use to prevent idling.

The following measures shall be required for exterior activities that involve the use of heavy-duty construction equipment (see Table 3.8-9) located within 800 feet of occupied noise-sensitive daytime land uses (e.g., school classrooms, childcare and convalescent care facilities, inpatient medical facilities, places of worship):

- Individual operations and techniques shall be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete off-site instead of on-site).
- Written notification of construction activities shall be provided to all noise-sensitive receptors located within 800 feet of construction activities. Notification shall include anticipated dates and hours during which construction activities are anticipated to occur and contact information, including a daytime telephone number, for the project representative to be contacted in the event that noise levels are deemed excessive. Recommendations to assist noise-sensitive land uses in reducing interior noise levels (e.g., closing windows and doors) shall also be included in the notification.
- To the extent feasible, acoustic barriers (e.g., lead curtains, sound barriers) shall be constructed to reduce construction-generated noise levels at affected noise-sensitive land uses. The barriers shall be designed to obstruct the line of sight between the noise-sensitive land use and on-site construction equipment. When installed properly, acoustic barriers can reduce construction noise levels by approximately 8-10 dBA (USEPA, 1971).

With implementation of Mitigation Measure 3.8-1, construction would be limited to daytime hours, for which associated noise levels are considered exempt from the provisions of the Rancho Cordova Noise Ordinance, and equipment would be properly maintained, sound barriers installed, and setbacks established, resulting in levels below the City's noise standards. Therefore, implementation of this mitigation measure would reduce potentially significant impacts from temporary construction noise under all three alternatives to a **less-than-significant** level.

**IMPACT 3.8-2 – Potential exposure to stationary source noise generated by on-site land uses.** *Implementation could result in potential exposure of sensitive receptors to noise levels from on-site stationary sources in excess of applicable standards.*

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative** - Under all three alternatives, development occurs. Development will feature primarily residential land uses, with some commercial, schools, and parks. The sources and levels of noise typically associated with these land uses are discussed separately below.

## RESIDENTIAL LAND USES

Occupation of the proposed residential dwellings would expose nearby residences to minor increases in ambient noise levels. Noise typically associated with such development includes amplified music, adults' and children's voices, and noise generated by various recreational activities and lawn maintenance equipment. Activities associated with these land uses would result in only minor and intermittent temporary increases in ambient noise levels, as perceived at the closest residential receptors, primarily during the day and evening hours, and less frequently at night. Stationary sources of noise associated with residential land uses are typically limited to the operation of exterior central air conditioning units. Residential-use central air conditioning units typically average approximately 60 dBA or less at 3 feet

from the source (USEPA, 1971). Depending on the distance between residential dwellings, noise levels associated with air conditioning units located within side-yard areas of residential land uses could potentially exceed the Rancho Cordova noise standards. As a result, increased noise levels associated with the proposed residential land uses are considered a **potentially significant, direct** impact. **No indirect** impacts would result.

## COMMERCIAL LAND USES

As discussed previously, the project includes plans for the development of a small amount of commercial land uses. Potential sources of noise associated with these types of land uses can vary substantially. Noise associated with office and public land uses might be limited to occasional parking lot-related noise (e.g., opening and closing of doors, and people talking); however, commercial land uses may include additional noise sources such as the use of forklifts for loading and unloading of materials, as well as the operation of hydraulic lifts, pneumatic tools, and air compressors at automotive repair facilities. Early-morning truck deliveries may also be a source of elevated noise levels at nearby sensitive receptors. Noise from such equipment and activities can reach intermittent levels of up to 90 dBA at 50 feet from the source (USEPA, 1971). In addition, mechanical equipment (e.g., heating, ventilation, and air conditioning [HVAC] equipment) housed on the exterior of buildings is also a potential stationary source of noise, especially if these pieces of equipment are not properly enclosed. Based on this noise level, and assuming an attenuation rate of 6 dBA per doubling of distance from the source, areas within approximately 2,500 feet could experience noise levels in excess of 55 dBA.

Operational noise levels associated with the proposed commercial and public land uses could potentially exceed the Rancho Cordova noise standards at nearby existing and future noise-sensitive receptors. In addition, increases in single-event noise levels, such as backup alarms from material delivery trucks, occurring during the more noise-sensitive evening and nighttime hours could result in increased levels of disturbance and sleep disruption to occupants of nearby residential dwellings. As a result, increased noise levels associated with the proposed commercial land uses are considered a **potentially significant, direct** impact. **No indirect impacts** would result.

## SCHOOLS AND NEIGHBORHOOD PARKS

The project includes development of school-related uses and neighborhood parks. Noise generating activities occurring at such facilities would be controlled by the school and the recreation and park districts, and would depend on facility type. Daytime noise typically associated with schools and neighborhood parks typically includes intermittent noise such as adults' and children's voices, opening and closing of vehicle doors in parking lots, and use of landscape maintenance equipment. School uses may also result in mechanical noise associated with building ventilation systems. Maximum intermittent noise levels commonly associated with parking lots can reach levels of 70 dBA at 500 feet from the occasional sounding of car alarms and amplification of music. Noise levels associated with landscape maintenance activities, including the use of large gasoline-powered mowers and leaf blowers, can range from approximately 66 to 72 dBA at 25 feet. Mechanical noise associated with operation of ventilation equipment required to service school facilities can result in average noise levels of 55 dBA at approximately 175 feet from the source.

Recreational facilities at neighborhood parks, middle schools, and high schools can generate additional noise extending into the evening and nighttime hours during competitive sporting events (e.g., soccer games, football games, and track and field events). Noise sources commonly associated with these types of events include elevated voices from crowds, exterior public-address systems, and musical instruments. Based on noise measurements conducted for similar projects, noise levels typically associated with recreational events (such as soccer games), including noise from spectators and players, can exceed 50

dBa  $L_{eq}$  within 800 feet of the event. If an amplified speaker system is used during sporting events, additional increases in ambient noise levels could occur. Activities occurring during the more noise-sensitive evening and nighttime hours may result in increased levels of annoyance and sleep disruption for occupants of nearby residential dwellings. As a result, increased noise levels associated with the proposed schools and neighborhood parks are considered a **potentially significant, direct** impact. **No indirect** impacts would result.

**Mitigation Measure 3.8-2: Implement measures to reduce potential exposure of sensitive receptors to stationary source-generated noise.**

To reduce potential long-term exposure of sensitive receptors to noise generated by project-related stationary noise sources from private activities, Rancho Cordova will evaluate individual facilities, subdivisions, and other project elements for compliance with the City Noise Ordinance and policies contained in the Rancho Cordova General Plan. All project elements shall comply with City noise standards. The project applicant(s) for all project phases will implement the following measures to assure maximum reduction of project interior and exterior noise levels from operational activities.

- The proposed land uses will be designed so that on-site mechanical equipment (e.g., HVAC units, compressors, and generators) and area-source operations (e.g., loading docks, parking lots, and recreational-use areas) are located as far as possible from or shielded from nearby noise-sensitive land uses.
- Residential air conditioning units will be located a minimum of 10 feet from adjacent residential dwellings, including outdoor entertainment and relaxation areas, or shall be shielded to reduce operational noise levels at adjacent dwellings or designed to meet City noise standards. Shielding may include the use of fences or partial equipment enclosures. To be effective, fences or barriers need to be continuous or solid, with very few gaps, and must block the line of sight to windows of neighboring dwellings. Achieved noise reductions from fences or barriers can vary, but typically range from approximately 5 to 10 dBA, depending on construction characteristics, height, and location.
- To the extent feasible, residential land uses located within 2,500 feet and within the direct line of sight of major noise-generating commercial land uses (e.g., loading docks, and equipment/vehicle storage and repair facilities) will be shielded from the line of sight of these facilities by construction of a sound barrier. To be effective, fences or sound barriers need to be continuous or solid, with very few gaps, and must block the line of sight to windows of neighboring dwellings. Achieved noise reductions from fences or barriers can vary, but typically range from approximately 5 to 10 dBA, depending on construction characteristics, height, and location. The developer will obtain the services of a professional acoustician to determine the design and location of noise barriers to be constructed.
- Dual-pane, noise-rated windows; mechanical air systems; exterior wall insulation; and other noise-reducing building materials will be used.

In addition, the City of Rancho Cordova will seek to reduce potential long-term exposure of sensitive receptors to noise generated by project-related stationary noise sources from public activities on school grounds, in neighborhood and community parks, and in open-space areas. Specifically, the City will encourage the controlling agencies (i.e., schools and park and recreation districts) to implement measures to reduce project interior and exterior noise levels to within acceptable levels, including but not limited to the following:

- On-site landscape maintenance equipment will be equipped with properly operating exhaust mufflers and engine shrouds, in accordance with manufacturers' specifications.
- For maintenance areas located within 500 feet of noise-sensitive land uses, the operation of on-site landscape maintenance equipment will be limited to the least noise-sensitive periods of the day, between the hours of 7 a.m. and 7 p.m.
- Outdoor use of amplified sound systems within 500 feet of noise-sensitive land uses will be permitted only between 7 a.m. and 10 p.m. Sunday through Thursday, and between 7 a.m. and 11 p.m. on Friday and Saturday.

**IMPACT 3.8-3 – Potential exposure to off-site stationary source noise.** *Implementation could result in exposure of proposed sensitive receptors to noise levels from off-site stationary sources in excess of applicable standards.*

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative** - Under all three alternatives, development occurs, and the developed areas would be affected by nearby stationary noise sources, including industrial and recreational land uses. Noise levels associated with these land uses and potential impacts on on-site receptors, are discussed separately below.

## INDUSTRIAL LAND USES

Nearby industrial land uses near the project include: Security Park, Kiefer Road Landfill, the Sacramento Rendering Company, and American River Aggregates. The nearest industrial use is the operations at Security Park, which is 500 feet away from the nearest portion of the project site. Hours of operation for these land uses vary, but are generally limited to daytime hours. Locations of these land uses are indicated in Figure 3.8-2.

Noise levels associated with industrial land uses can vary greatly depending on the activities conducted. Activities involving the use of heavy-duty equipment such as front-end loaders, forklifts, and diesel-powered trucks are common noise sources typically associated with these land uses. Noise from industrial activities, including the use of pneumatic tools and heavy-duty motorized equipment and vehicles, can range from approximately 65 to 85 dBA at 50 feet (USEPA, 1971). Assuming a maximum noise level of 85 dBA at 50 feet, areas located within approximately 1,500 feet of industrial land uses may be exposed to noise levels in excess of the Rancho Cordova daytime noise standard of 55 dBA, depending on the activities conducted.

The project proposes development of residential dwellings over 500 feet from existing industrial land uses located along the northern boundary of the project site. As a result, predicted noise levels from existing industrial activities could potentially exceed the local regulatory noise standards for these receptors. In addition, activities occurring during the more noise-sensitive evening and nighttime hours, such as loading-dock operations, may result in increased levels of annoyance and sleep disruption to occupants of nearby planned residential dwellings. Noise levels associated with existing industrial development adjacent to proposed residential housing are considered a **potentially significant, direct** impact. **No indirect** impacts would result.

## CORDOVA SHOOTING CENTER

The Cordova Shooting Center is located at 11551 Douglas Road, at the northwest corner of the Douglas Road/Sunrise Boulevard intersection, over one mile from the nearest portion of the project site. The shooting center includes outdoor rifle, pistol, skeet, trap, and sporting clay ranges. Hours of operation

vary by season, but are generally limited to the daytime hours of 10 a.m. to 8 p.m. on weekdays and 9 a.m. to 6 p.m. on weekends. Shooting events, such as skeet tournaments, occasionally occur during the evening hours.

Noise levels generated by weapon fire are dependent on the weapon used, local shielding, and atmospheric conditions. Based on measurements conducted at the Cordova Shooting Center, noise levels from weapon fire ranged from approximately 97 to 112 dBA per round at 50 feet. Based on these noise levels, predicted maximum noise levels of 70 dBA could occur at a distance of one-half mile from this facility, depending on local shielding and atmospheric conditions (County of Sacramento, 1993).

Intermittent noise generated by daytime weapon fire at the firing range, though discernible at times, would be largely masked by the higher vehicle traffic noise on nearby roadways (i.e., Sunrise Boulevard and Douglas Road), therefore, noise levels associated with the existing Cordova Shooting Center in the vicinity of proposed residential housing are considered to have **no significant, direct** impact. **No indirect** impacts would result.

In summary, noise levels generated by off-site stationary sources could result in noise levels at proposed receptors that would exceed the Rancho Cordova noise standards. This is considered a **potentially significant, direct** impact. **No indirect** impacts would occur.

#### **Mitigation Measure 3.8-3: Implement mitigation measure 3.8-2.**

Compliance with the Rancho Cordova Noise Ordinance and implementation of any additional mitigation measures for the control of stationary-source noise, such as those identified above in Mitigation Measure 3.8-2, would reduce stationary-source noise impacts and would reduce interior noise levels to a less-than-significant level. However, exterior noise levels could still exceed applicable land-use compatibility noise standards. No additional feasible mitigation measures are available to further reduce exterior noise levels; therefore, this impact remains **potentially significant and unavoidable**.

**IMPACT 3.8-4 – Project-generated increases in traffic noise levels on area roadways.** *Implementation would introduce new traffic to area roadways, resulting in an associated increase in traffic noise levels.*

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative** – Under all three alternatives, development occurs. Under the Proposed Project Alternative, 3,258 single family homes are built, under the Reduced Footprint Alternative, 2,511 single family homes are built, and under the No Action Alternative, 2,059 homes are built. The increase in housing results in a direct correlation of increased daily trips. The increase in daily traffic volumes resulting from implementation of any of the alternatives would generate increased noise levels along nearby roadways.

Analysis of traffic impacts was performed as part of the Rio del Oro Specific Plan Project EIR/EIS (City of Rancho Cordova, USACE, EDAW 2006), utilizing the Federal Highway Administration Traffic Noise Prediction Mode (FHWA-RD-77-108), based on existing traffic data. This model is in common use and is considered adequate for the purpose of this EIS. The model reported that noise levels would increase by 3 dBA only if traffic volumes doubled, and the 11,601 homes and their associated daily trips would not double traffic volumes; the traffic would not be sufficient to increase noise to perceptible noise levels. Housing built under the three alternatives would be less than one third of the housing developed as part of the Rio del Oro Specific Plan Project, and corresponding traffic noise would also be less than the noise generated by traffic from the homes developed by the Rio del Oro Specific Plan Project. Therefore, the **direct** impact is considered **less than significant**, and **no indirect** impacts would occur.

#### **Mitigation Measure 3.8-4: No mitigation measures are required.**



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## **3.9 UTILITIES AND PUBLIC SERVICES**

This section describes the affected environment, environmental consequences, and mitigation measures with respect to utilities and public services. Utilities and public services include: energy services, fire protection, law enforcement, schools, parks and recreation, telephone, television, public transit, library, solid waste services, and wastewater services.

Information presented for utilities and public services is based upon the Sunrise-Douglas Community Plan/Sunridge Specific Plan Final Environmental Impact Report (County of Sacramento, 2001). The information was updated as necessary, to reflect current conditions, both physical and regulatory.

### **3.9.1 AREA OF ANALYSIS**

The area of analysis is located in the Sunridge Specific Plan Area, within the Sunrise-Douglas Community Plan, in the incorporated City of Rancho Cordova. A framework for urban public facilities and services has been planned for the Sunrise-Douglas Community Plan area; however, not all facilities and services are currently in place.

### **3.9.2 AFFECTED ENVIRONMENT**

The following is a discussion of the basic public services needed and provided in the project area and the agencies responsible for those services.

#### **3.9.2.1 ENERGY SERVICES**

Electricity within the area is provided by the Sacramento Municipal Utility District (SMUD). SMUD owns and maintains the following:

- 69 kilovolt (kV) and 12kV along the east side of Sunrise Boulevard;
- 69kV along the Jackson Highway;
- 12kV along Douglas Road to Jaeger Road and south along Jaeger Road; and
- Overhead electric service lines along the existing roadways through the project site, providing electrical service to the existing residences and wells.

Two 230kV transmission lines traverse the area near the project sites, northeast to southwest, in a 350-foot wide corridor. One line is owned by SMUD, and the other is owned by Pacific Gas and Electric Company (PG&E). Land use is restricted within the easement beneath the tower line including a prohibition against buildings and structures, swimming pools, wells, or other bodies of water within the boundaries, and height limitations for lighting and landscaping. Clear and unrestricted access is required for maintenance along the entire easement. One substation with capacity for approximately 400 residential units was available in 2001 (County of Sacramento, 2001).

Throughout the year, SMUD buys and sells energy and capacity on a short-term basis to meet load requirements and reduce costs. SMUD is currently operating Phase I of the Cosumnes Power Plant, which is part of SMUD's long-range power supply plan to meet the service area energy needs. The Cosumnes Power Plant is a natural gas-fired electrical generating facility and would provide SMUD with

a total of 500 megawatt (MW) additional capacity. The Cosumnes Power Plant Phase I came on line in 2006 and provides enough power to meet the annual needs of 450,000 single-family homes.

### **3.9.2.2 NATURAL GAS**

Natural gas service within the area is provided by PG&E. PG&E is the natural gas service provider for the City of Rancho Cordova. Natural gas is delivered to Rancho Cordova through portions of PG&E's 43,000-mile natural-gas pipeline system. The existing facilities in the city consist of 4.5- to 16-inch conveyance pipelines. Existing conveyance lines at the project sites run underground from the Sunrise Boulevard/White Rock Road intersection and follow White Rock Road east for approximately 2.3 miles. All construction and maintenance activities for natural gas facilities are the responsibility of PG&E.

PG&E owns and operates an 8-inch feeder main along Sunrise Boulevard near the project sites. This feeder main is currently operating at 60 pounds per square inch (psi), but is intended to be a future high pressure main. In the vicinity, PG&E also owns and operates the following 6-inch diameter gas mains:

- North of the project sites on Sunrise Boulevard;
- Along Kiefer Boulevard west of Sunrise Boulevard; and
- Along White Rock Road north of the project sites.

PG&E has indicated that a new pressure regulation station would be required on the existing 8-inch diameter feeder main near the intersection of Sunrise Boulevard and Douglas Road. The existing 8-inch main would be upgraded from the current 60 psi pressure to a proposed operating pressure of 150 psi. Six-inch diameter transmission mains would extend from the new regulation station along Douglas Road and then along the major north/south roadways (Jaeger Road and Americanos Boulevard). Smaller diameter feeder mains would extend off the 6-inch transmission mains into individual development projects.

### **3.9.2.3 FIRE PROTECTION**

The Sacramento Metropolitan Fire District would provide fire protection and emergency medical response to development within the project sites. The fire district operates 42 stations in an area servicing 640,000 people in a 416 square mile service area. The nearest existing fire stations to the project sites are Station 68 located at 4381 Anatolia Drive and Station 66 located at 3180 Kilgore Road. Station 68 is approximately 2 miles from the eastern boundary of the analysis area and Station 66 is approximately 9 miles from the northern boundary (Sacramento Metropolitan Fire District, 2010).

The Insurance Services Office (ISO) assigns a fire insurance protection classification rating to fire districts based on water supply, communications, staffing, and equipment level. ISO ratings are intended to describe a district's ability to defend against a major fire. The most common usage of the ISO rating is for setting fire insurance premiums. The ratings are set on a scale of 1 to 10, with Class 1 indicating the highest protection level and Class 10 indicating no fire protection. Classes 2 through 9 reflect varying degrees of intermediate protection. The current ISO rating for the Sacramento Metropolitan Fire District are Class 3 and Class 8 for areas with and without fire hydrants, respectively (Sacramento Metropolitan Fire District, 2004).

### **3.9.2.4 LAW ENFORCEMENT**

The Rancho Cordova Police Department provides law enforcement services and police protection to the City, including the project site. These services include response to calls and incidents, investigations, surveillance, and routine patrolling.

Demand for services currently exceeds the supply of resources. Demand results from population growth, increased rate of crime, and services mandated by the state and the courts. Supply of resources is linked primarily to the City General Fund. Growing demand and a relatively slower growing resource base has led to an inability to maintain historic levels of service. While population and the number and severity of crimes have increased substantially over the past 10 years, the number of patrol officers has increased less than 1% (two officers).

Reallocating resources has led to a reduction in local services. The Department no longer provides patrol and investigative service in response to all citizen complaints. Case acceptance criteria are used to screen citizen calls, set priorities for response, and determine how staff would be assigned. Felonies take priority over misdemeanors, and crimes against persons take priority over property crimes. Visits on residential burglaries, noise disturbances, vandalism, vehicle thefts, vehicle burglaries, and preventive patrol are no longer provided.

The design of a development can influence the demand for services through the presence or absence of internal security measures. Project circulation design can also affect the Department's ability to provide timely emergency response. The Department has identified standard design recommendations for residential developments.

### **3.9.2.5 SCHOOLS**

The analysis area is located within the Elk Grove Unified School District, which provides public elementary through high school education (Figure 3.9-1). The Elk Grove Unified School District has more than 62,000 students that attend 64 schools. Although the school district boundaries are periodically adjusted as a new school is built or the population in a particular area changes, the analysis area is serviced by the Cosumnes River Elementary School, Katherine L. Albani Middle School, and Pleasant Grove High School. Proposed school sites must conform to school district standards for location and configuration. The district has adopted site location requirements relating to site configuration, power lines, noise, airports, access, environmental constraints, adjacent land use, and utilities.

### **3.9.2.6 PARKS AND RECREATION**

#### **FOLSOM LAKE**

The Folsom Lake State Recreation Area (SRA) is located approximately 10 miles north of the project sites. The SRA serves the greater Sacramento area for summer recreation in the form of boating, camping, hiking, biking, and other outdoor recreation activities. The California Department of Parks and Recreation manages the Folsom Lake SRA, which includes Folsom Lake and the surrounding facilities. The lake features approximately 75 miles of shoreline and 80 miles of trails that provide opportunities for hiking, horseback riding, nature studies, camping, and picnicking. There are seven major recreation areas with facilities located around the lake. The Folsom Lake SRA receives 2 to 3 million visitor days per year, mostly in the spring and summer. Most of these activities are water-related. The park also includes Lake Natoma, downstream from Folsom Lake, which is popular for crew races, sailing, kayaking and other aquatic sports.

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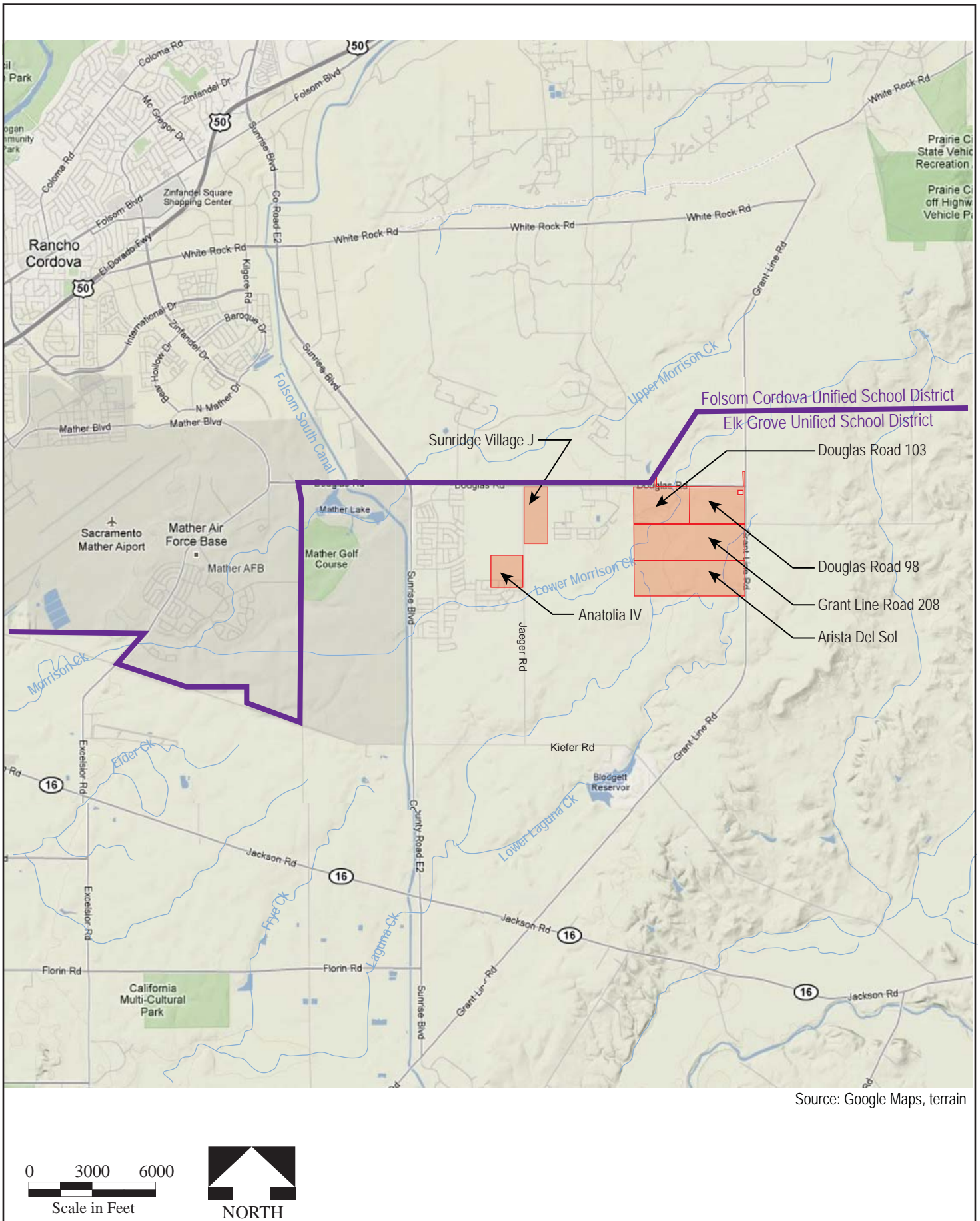


Figure 3.9-1. School District Boundaries Near the Project Site

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A 32-mile bicycle path connects Folsom Lake with several Sacramento County parks situated along the American River, ending at the Sacramento River to the west. Beginning at Beal's Point at Folsom Lake, the trail goes by the southwest corner of the lake, the west shore of Lake Natoma, parallels the American River, and ends in Discovery Park in Old Sacramento, where it meets the Sacramento River bike trail.

## **SACRAMENTO-SAN JOAQUIN DELTA**

The Sacramento–San Joaquin Delta (Delta) has nearly 1,000 miles of navigable channels. As such, recreation opportunities are generally water oriented, consisting primarily of boating and fishing. Other common activities include water skiing, wakeboarding, sailing, operating personal watercraft (e.g., jet skis), houseboating, kayaking, swimming, boat camping, and windsurfing. Land-based recreational activities in the Delta include hunting, camping, picnicking, walking, bicycling, viewing and photographing wildlife, sightseeing, and attending festivals and special events.

## **PRAIRIE CITY STATE VEHICULAR RECREATION AREA**

The Prairie City State Vehicular Recreation Area (SVRA), located on White Rock Road approximately 3 miles northeast of the project sites, is a year-round off-highway vehicle park. Along with 836 acres of varying terrain and trails for motorcycles, all-terrain vehicles, and four-wheel-drive vehicles, the Prairie City SVRA includes a motocross track, a quarter midget track, a 4x4 vehicle area, a motorcycle/all-terrain vehicle area, several practice tracks, a go-kart track, and several staging areas that include picnic facilities. The Prairie City SVRA is operated by the Off-Highway Vehicle Division of the California Department of Parks and Recreation.

## **AMERICAN RIVER PARKWAY**

The American River Parkway is an open space greenbelt which extends approximately 29 miles from Folsom Lake to the Sacramento River. The American River is the central focus of the Parkway. The Parkway's trail system, which has been designated a "National Recreation Trail," includes the 32-mile-long multiuse (pedestrian, equestrian, and bicycle) Jedediah Smith Memorial Trail, which parallels the American River from Folsom to downtown Sacramento. There are several points of entry to this recreation area from neighborhoods and county and city parks for pedestrians, cyclists, equestrians, automobiles, and boaters.

The Parkway abuts the City's northern boundary with miles of river frontage, where it is accessible at numerous locations in Rancho Cordova, including Hagan Park. Within the city, the Parkway also includes River Bend Park (formerly C.M. Goethe Park), consisting of 444 acres, providing hiking, bicycling, and horseback riding trails as well as picnic areas.

## **CORDOVA RECREATION AND PARK DISTRICT**

Rancho Cordova has a variety of open space, parks, and trails that are managed by an independent agency, the Cordova Recreation and Park District (CRPD). Providing parks is a cooperative effort, combining the City's land use authority and CRPD's efforts to build and operate park and recreation facilities. The City coordinates with CRPD in its land use authority to ensure that parkland dedication requirements are met and that parks are provided in accordance with the CRPD Master Plan and City policies on parks and open space.

The Cordova Recreation and Park District would own and operate any neighborhood and community-scale parks within the analysis area. The district acquires and improves parks through land dedication and/or in-lieu fees authorized under the Subdivision Map Act (the Quimby Act). The dedication of



land for parks may also be satisfied by payment of an “in-lieu” fee equal to the value of the land that would otherwise have been dedicated.

CRPD is located in the east-central portion of Sacramento County, south of the American River, and is bisected by U.S. Highway 50. The CRPD administers a total of 438 acres, which includes 27 neighborhood parks and six community parks that offer swimming pools, picnic areas, basketball courts, soccer fields, and playgrounds. Other amenities include four community swimming pools, the Cordova Senior Center, the Mather Sports Complex, the Cordova Public Shooting Center, and the Cordova Golf Course. The 75-acre Hagan Park near Cordova High School has several swimming pools, a community center, a petting barn, and a miniature steam railroad.

### **3.9.2.7 TELEPHONE AND CABLE TELEVISION**

The American Telephone and Telegraph Company (AT&T) would provide telephone service to the project sites. Pacific Bell owns an existing fiber optic cable on Sunrise Boulevard near the intersection with International Drive, north of the project sites.

AT&T is planning to extend the fiber optic cable south along Sunrise Boulevard to the intersection with Douglas Road. Fiber optic service lines would be extended to controlled environment vaults (CEVs) located in exclusive AT&T easements measuring 20 feet by 30 feet. From the CEV, smaller backbone cables would be extended along the major roadways to service cabinets that would accommodate up to 5,000 individual phone lines (County of Sacramento, 2001). The location of these service cabinets would be determined by AT&T at the time of tentative map approval. Under current practices, copper phone lines would then be extended from the service cabinets within new developments.

Sacramento Cable would provide cable television service within the project sites. Sacramento Cable owns and operated a hub facility, including fiber optic and microwave feeds, near the intersection of Sunrise Boulevard and Folsom Boulevard.

New fiber optic cables would be extended from the existing hub facility along Sunrise Boulevard and then along the major roads within the project sites. Coaxial cables would extend from the optic lines into new developments within the public utility easements at the back of walks.

### **3.9.2.8 PUBLIC TRANSIT**

There is no direct public transit service to the analysis area at this time. However, there is light rail transit and bus feeder service near the area. This service is provided by Regional Transit (RT) and includes standard and peak hour express service along Folsom Boulevard and US Highway 50.

Light rail transit currently extends from downtown Sacramento to two terminus points:

- Watt Avenue/I-80
- Folsom

The project sites are closest to the Sunrise station on the Folsom line. This station provides light rail service to the downtown area every 15 minutes during peak hours, and every 30 minutes during off-peak hours.

The closest bus transit routes to the project sites are located along Folsom Boulevard and Highway 50, and along White Rock Road west of Sunrise Boulevard. The RT 20-year Master Plan for transit facilities

(Figure 3.9-2) identifies planned feeder bus service for Sunrise Boulevard. This bus line is intended to support light rail along the Folsom Boulevard corridor.

### **3.9.2.9 LIBRARY SERVICE**

The analysis area is served by the Sacramento Public Library Authority. The Sacramento Public Library Authority is the fourth largest library system in California serving the public in the City and County of Sacramento and the cities of Citrus Heights, Elk Grove, Galt, Isleton and Rancho Cordova. The Sacramento Public Library operates 27 libraries, which includes a Central Library in downtown Sacramento, has over 300 staff members, a collection of 2 million volumes, and a budget of \$35,000,000. Residents in the analysis area currently have access to library services at the Rancho Cordova Branch Library located near Folsom Boulevard and Bradshaw Road, and at the Elk Grove Branch Library located at Elk Grove Boulevard and Elk Grove-Florin Road.

### **3.9.2.10 SOLID WASTE SERVICE**

Refuse collection and solid waste disposal service within the analysis area would be provided by the Waste Management and Recycling Division of the Sacramento County Public Works Agency. Solid waste would be transported to the Kiefer Landfill, a county-owned and operated facility located southeast of the intersection of Grant Line Road and Kiefer Boulevard. The Kiefer Boulevard facility is the primary landfill for all solid waste generated within the unincorporated areas of the County and the City of Rancho Cordova. The landfill is regulated by the Department of Resources Recycling and Recovery (CalRecycle) and the County of Sacramento Environmental Management Department. The landfill has a total capacity of 117 million cubic yards (58 million tons) and can accept a maximum of 10,815 tons per day of solid waste (CalRecycle, 2010).

The average per-capita solid-waste disposal rate for Sacramento County is 0.36 ton per resident per year. Business waste disposal rates calculated by the CalRecycle range from 0.3 ton per year for general-merchandise stores to 3.1 tons per year for restaurants (City of Rancho Cordova and USACE, 2006b). Currently, the landfill is operating below permitted capacity and is projected to cease operation in year 2064.

This 650 acre landfill is a Class II-2 facility, a classification that cannot accept waste that consists of chemically and biologically decomposable material that would significantly affect groundwater quality. No hazardous materials are allowed in this facility. Solid waste service would be funded through user fees.

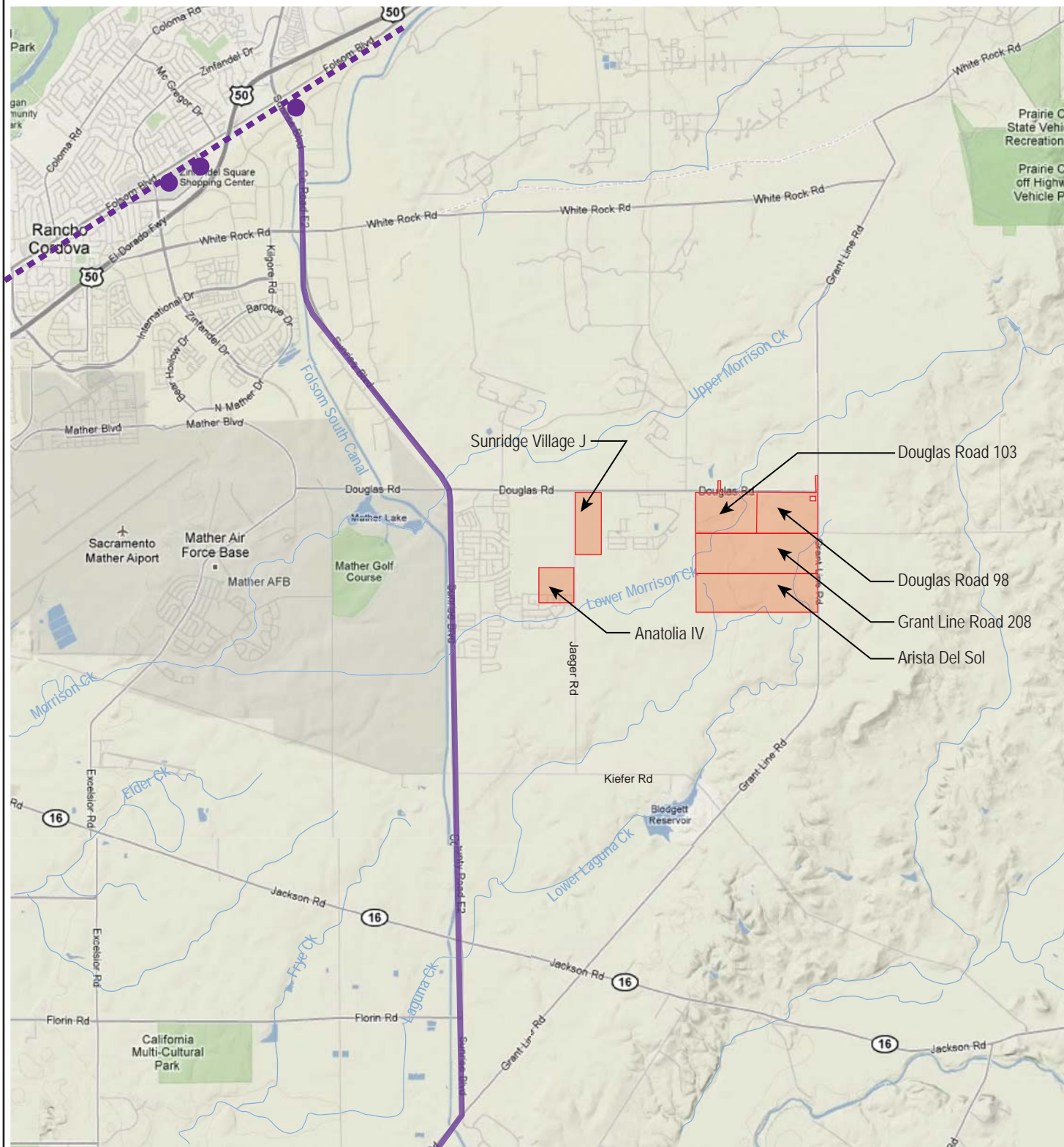
### **3.9.2.11 WASTEWATER**

The Sacramento Regional County Sanitation District (SRCSD) and County Sanitation District No. 1 (CSD-1) provide public sewer service to the urbanized portion of Sacramento County including the City of Rancho Cordova. All of the project sites are within the general plan urban service boundary and the general plan urban policy area, and therefore is included within the sanitation districts' spheres of influence. All of the project sites have also been annexed into the sanitation districts' service boundaries.

The SRCSD's facilities include the Sacramento Regional Wastewater Treatment Plant, and interceptors. CSD-1 provides the local sewage collection and transport from its facilities to the regional sewage transmission, treatment, and disposal facilities operated by SRCSD. Treated effluent is ultimately discharged to the Sacramento River at the SRCSD's treatment plant, located near Freeport.

SRCSD and CSD-1 classify sewer pipelines carrying 10 million gallons per day or more as "interceptors." Sewer pipes carrying between 1 and 10 million gallons per day are known as "trunks."

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Source: Google Maps, terrain

0 3000 6000  
Scale in Feet



—●— Sacramento Regional Transit Light Rail Line  
— Planned Feeder Bus Service

Figure 3.9-2. Transit Corridors Near the Project Site

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Sewer pipes carrying less than one million gallons per day are referred to as “collectors.” The cost of interceptor and trunk facilities are reimbursable or creditable against sewer fees. The construction of collectors is the responsibility of the developer of a specific project. The 84-inch interceptor 20-mile-long Bradshaw Interceptor provides sewer capacity for the cities of Folsom and Rancho Cordova, as well as for the eastern unincorporated areas of Sacramento County.

In November 1996, the SRCSD and CSD-1 Board of Directors approved the Sacramento Sewerage Expansion Master Plan, which identified future projects needed to accommodate growth. The plan includes two major conveyance facilities that would provide sewer service to the project sites, the Mather Interceptor Sewer and the Laguna Creek Interceptor Sewer. In 2008, both the South Interceptor and the Mather Interceptor projects were put on hold. Due to slower development in 2008, the pressure to construct interceptor facilities was reduced. After reevaluation of the sewer services, the SRCSD determined that both the South and Mather Interceptors could be delayed for several years (Sacramento Regional County Sanitation District, 2008).

### **3.9.3 REGULATORY FRAMEWORK**

The following section describes the federal, state, and local rules and regulations applicable to the alternatives.

#### **3.9.3.1 FEDERAL LAWS, REGULATIONS, POLICIES, AND PLANS**

There are no federal plans, policies, regulations, or laws related to utilities and public service that are applicable to the alternatives under consideration.

#### **3.9.3.2 STATE LAWS, REGULATIONS, POLICIES, AND PLANS**

##### **QUIMBY ACT**

Cities and counties have been authorized since the passage of the 1975 Quimby Act (California Government Code §66477) to pass ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. The Quimby Act requires developers to help mitigate the impacts of property improvements. The act gives authority for passage of land dedication ordinances to cities and counties. The fees must be paid and land conveyed directly to the local public agencies that provide park and recreation services community-wide.

The Quimby Act applies only to the acquisition of new parkland; it does not apply to the physical development of new park facilities or associated operations and maintenance costs. Therefore, the Quimby Act effectively preserves open space needed to develop park and recreation facilities, but it does not ensure the development of the land or the provision of park and recreation services to residents. In addition, the Quimby Act applies only to residential subdivisions. Nonresidential projects could contribute to the demand for park and recreation facilities without providing land or funding for such facilities. As described below, the CRPD collects Quimby Act fees.

#### **3.9.3.3 REGIONAL AND LOCAL LAWS, REGULATIONS, POLICIES, AND PLANS**

##### **CITY OF RANCHO CORDOVA GENERAL PLAN**

Public services and utilities are governed by a large number of policies described in the Rancho Cordova General Plan including the Land Use Element, Economic Element, Safety Element, and Natural

Resources Element. Goals, policies, or actions from the City of Rancho Cordova General Plan relating to utilities and recreation, which are applicable to the alternatives under consideration, are presented below.

#### GOAL LU.2 - ESTABLISH GROWTH PATTERNS BASED ON SMART GROWTH PRINCIPLES AND THE CITY BUILDING BLOCKS CONCEPT.

Policy LU.2.1 - Ensure future land use and growth within the Planning Area adheres to the City's nine smart growth principles, as described in this Element.

Action LU.2.1.1 - Amend the Zoning Code and Citywide Design Guidelines to include the City's smart growth principles as appropriate.

Policy LU.2.2 - Promote new development and redevelopment in accordance with the building blocks concepts of neighborhoods, villages, and districts.

Action LU.2.2.1 - Identify the building block components of neighborhoods, villages, and districts in the existing areas of the City and encourage redevelopment using the building blocks principles.

Policy LU.2.3 - Encourage the clustering of similar uses into areas or districts that have common needs and that are compatible with one another, in order to maximize their efficiency and identity for Rancho Cordova. Uses to consider clustering include the following:

- Entertainment area (Performing Arts Center, local theaters, and studios);
- Sports/recreation facilities (e.g. bowling alleys and major sports facilities);
- Hospitals and other care facilities;
- Youth activity centers;
- Amphitheatres; and
- Regional shopping opportunities

#### GOAL LU.3 - ESTABLISH RANCHO CORDOVA AS A DESTINATION PLACE IN THE REGION AND A LEADER IN THE COLLECTIVE RESOLUTION OF REGIONAL ISSUES.

Policy LU.3.4 - Consult with state and federal regulatory and resource agencies during initial review of development projects to identify potential environmental conflicts and establish, if appropriate, concurrent application processing schedules.

Policy LU.3.5 - Work with community service providers such as the Cordova Recreation and Park District and the Rancho Cordova Neighborhood Center to expand their services to new areas of the City as opportunities arise.

#### GOAL ISF.2 – ENSURE THE DEVELOPMENT OF QUALITY INFRASTRUCTURE TO MEET COMMUNITY NEEDS AT THE TIME THEY ARE NEEDED.

Policy ISF.2.1 – Ensure the development of public infrastructure that meets the long-term needs of residents and ensure infrastructure is available at the time such facilities are needed.

Action ISF.2.1.1 - Except when prohibited by state law, require sufficient capacity in all public facilities to maintain desired service levels and avoid capacity shortages, traffic congestion, or other negative effects on safety and quality of life.

Action ISF.2.1.2 – Adopt a phasing plan for the development of public facilities in a logical manner that encourages the orderly development of roadways, water and sewer, and other public facilities.

Action ISF.2.1.3 - Withhold public financing or assistance from projects that do not comply with the planned phasing of public facilities, and approve interim facilities only in special circumstances.

Action ISF.2.1.4 - Work with utility providers to coordinate the installation or upgrading or relocation of utilities to minimize multiple trenching of City streets.

Policy ISF.2.2 - Coordinate with independent public service providers, including schools, parks and recreation, utility, transit, and other service districts, in developing service and financial planning strategies.

Action ISF.2.2.1 – Establish a Technical Review Committee for continued coordination with outside service agencies, including water and sewer providers, the Cordova Recreation and Park District, and the school districts, during the review of plans and development projects.

Policy ISF.2.3 - Ensure that adequate funding is available for all infrastructure and public facilities, and make certain that the cost of improvements is equitably distributed.

Action ISF.2.3.1 - Require secure financing for all components of the transportation system through the use of special taxes, assessment districts, developer dedications, or other appropriate mechanisms. Financing should be sufficient to complete required major public facilities at their full planned capacities in a single phase. Major facilities include roadways of collector size or larger; all wells, water transmission lines, treatment facilities, and storage tanks needed to serve the project; and all sewer trunk and interceptor lines and treatment plants or treatment plant capacity.

Action ISF.2.3.2 - Require new development to fund its fair share portion of its impacts to all public infrastructure and facilities.

Action ISF.2.3.3 - Include sufficient funding in fee programs and/or other finance mechanisms to cover the costs of each of the following roadway items:

- Design, engineering, environmental compliance, and construction of roadway lanes, traffic signals, and bridges.
- Right of way acquisition, design, engineering, environmental compliance, and construction costs.
- Drainage and other facilities related to new roadway construction.
- Installation of landscaped medians, sidewalks, and streetscaping where appropriate.

Policy ISF.2.5 - Ensure that water flow and pressure are provided at sufficient levels to meet domestic, commercial, industrial, and firefighting needs.

Policy ISF.2.6 - Ensure that sewage conveyance and treatment capacity are available in time to meet the demand created by new development, or are guaranteed to be built by bonds or other sureties.



Action ISF.2.6.1 - Require all subdivision developments to adhere to the following provisions, to the extent permitted by State law:

- Sewage/wastewater treatment capacity shall be available at the time of tentative map approval.
- The agency providing sewer service to the subdivision shall demonstrate prior to the approval of the Final Map by the City that sufficient capacity shall be available to accommodate the subdivision plus existing development, and other proposed or approved projects which have received sewage treatment capacity commitment.
- On-site and off-site sewage conveyance systems required to serve the subdivision shall be in place prior to the approval of the Final Map, or their financing shall be assured to the satisfaction of the City, consistent with the requirements of the Subdivision Map Act.
- Sewage conveyance systems within the subdivision shall be in place and connected to the sewage disposal system prior to the issuance of any building permits. Model homes may be exempted from this policy as determined appropriate by the City and subject to approval by the City.

Policy ISF.2.7 – Minimize visual impacts and physical impediments of utility sites, infrastructure, and equipment.

Action ISF.2.7.1 – Coordinate with utility agencies to underground, strategically place, and screen equipment to the maximum extent feasible.

Action ISF.2.7.2 - Require complete visual screening of all utility sites, facilities, and equipment, with special emphasis on screening in proximity to residential property or in viewshed.

**GOAL ISF.3 – PROVIDE A FULL RANGE OF LOCAL SERVICES THAT MEET LOCAL NEEDS.**

Policy ISF.3.1 – Foster the provision of comprehensive services targeted to meet the needs of the City's growing population.

Action ISF.3.1.1 – City Staff shall actively work with other agencies and jurisdictions in the development/expansion and funding of a wide range of public services including, but not limited to neighborhood services, social and cultural services, special needs services, housing services, educational and community services, and recreational services.

Policy ISF.3.2 – Support enhanced library services for existing and future residents and employees that exceed regional and national standards.

Action ISF.3.2.2 - Encourage the County to locate new libraries within Rancho Cordova accessible to pedestrians, bicycles, and public transit riders, in a highly visible location that is accessible to unaccompanied children.

**GOAL ISF.4 – PROVIDE EDUCATIONAL OPTIONS THAT RESULT IN WELL EDUCATED CHILDREN AND ADULTS IN THE CITY OF RANCHO CORDOVA.**

Policy ISF.4.1 - Encourage school districts to locate and site facilities in an integrated manner with the rest of the community.

Action ISF.4.1.1 – Convene a focused design effort with the School Districts to establish design guidelines for schools. Key issues include:

- Proper sizing of school campuses and consideration of urban school design.
- Design solutions that enhance; rather than impact neighborhoods.
- Address shared use of school facilities, including continued park/school combined facilities and community use of school campus libraries.

Action ISF.4.1.2 - Support the School Districts in siting new school facilities according to the following criteria:

- Schools should be within walking distance of most residences, and should connect with trails, bikeways, and pedestrian paths.
- Schools should serve as a focal point of neighborhood activity and be interconnected with churches, parks, greenways, and off-street paths whenever possible.
- New schools should continue to be placed adjacent to neighborhood and community parks whenever possible and be designed to promote joint use of appropriate facilities.

Action ISF.4.1.3 – Conduct focused discussion with local school districts to discuss design of pedestrian and bicycle facilities adjacent to and within the school sites.

Policy ISF.4.2 – Support a single unified school district serving the children of Rancho Cordova.

Action ISF.4.2.1 – Continue to pursue a single unified school district for the City’s K-12 children.

GOAL NR.7 - REDUCE PER CAPITA ENERGY CONSUMPTION.

Policy NR.7.1 - Increase energy conservation Citywide.

Policy NR.7.2 - Promote the development and use of advanced energy technology and building materials in Rancho Cordova.

Policy NR.7.3 - Encourage the development of energy efficient buildings and subdivisions.

Action NR 7.3.1 - Offer incentives (e.g., reduced fees, expedited entitlement processing, density bonus) for plans/projects that exceed Title 24 energy efficiency requirements by 10%.

GOAL NR.8 - PROMOTE WASTE REDUCTION, REUSE, RECYCLING, AND COMPOSTING EFFORTS.

Policy NR.8.1 - Support recycling efforts by developing a set of programs to educate residents on recycling and provide recycling services.

Action NR.8.1.1 - Continue providing curbside recycling and green waste service to all single-family and duplex residences in Rancho Cordova.

Action NR.8.1.5 - Provide locations for household hazardous wastes to be recycled.

Policy NR.8.7 - Maintain contact with Sacramento County and Allied Waste (or its successor) regarding the capacity projections of Kiefer Landfill and Lockwood Landfill to ensure an adequate capacity in their disposal facilities for the long-term disposal needs of Rancho Cordova.

**GOAL OSPT.1: CREATE A PREMIER SYSTEM OF PUBLIC PARKS AND RECREATION PROGRAMS THAT MEET THE NEEDS OF ALL RESIDENTS.**

Policy OSPT.1.1 - Review all proposals for new residential development to ensure each project complies with the City's minimum standards for parkland dedication [five acres of land per 1,000 population], and is consistent with Cordova Recreation and Park District goals.

Action OSPT.1.1.3 – Establish a procedure for determining an appropriate in lieu fee amount that ensures CRPD will have adequate funds to purchase required parkland for which in lieu fees are paid.

Policy OSPT.1.2 - Coordinate with the Cordova Recreation and Park District to ensure that parks are provided, developed, and operated in a way that ensures that the City's parks goals are achieved throughout the community.

Policy OSPT.1.3 - Encourage park development adjacent to school sites and other compatible uses (public and private) for enhanced civic space and integration into the community.

Policy OSPT.1.4 – Ensure that adequate and reliable funding sources are established for the long- term maintenance of parks and trails.

Policy OSPT.1.5 - Support the Cordova Recreation and Park District in their construction and maintenance of recreational facilities.

**GOAL OSPT.2: ESTABLISH A SYSTEM OF OPEN SPACE AREAS THAT CONNECT ALL PARTS OF THE COMMUNITY AND PROVIDE OPPORTUNITIES FOR PASSIVE AND NEIGHBORHOOD-BASED RECREATION.**

Policy OSPT.2.1 - Review all proposals for new residential development to ensure compliance with the City's minimum open space standards [1.75 acres of land per 1,000 population, including Mandatory Open Space, and Performance Based Open Space].

Action OSPT.2.1.7 - Consider including encumbered land (such as a power line easement) that meets all other requirements for open space for inclusion in the open space system on a case-by-case basis.

Policy OSPT.2.2 - Create a [comprehensive Open Space Preservation Plan] for identifying and maintaining open space.

Action OSPT.2.2.1 - Consider locating public parks adjacent to mitigation lands to create a greater sense of open space and to take advantage of opportunities for vistas and trail connections.

Policy OSPT.2.3 - Maximize the potential benefits of natural resource mitigation lands within urban development.

Action OSPT.2.3.1: - Encourage projects to accomplish the following:

- Align roads and public spaces to take advantage of vistas over mitigation lands;

- Site publicly accessible trails adjacent to the boundaries of mitigation lands to take advantage of the open character and uninterrupted edge of the mitigation lands; and
- Consider locating public parks adjacent to mitigation lands to create a greater sense of open space and to take advantage of opportunities for vistas and trail connections.

**GOAL OSPT.3: CREATE A SYSTEM OF PEDESTRIAN AND BICYCLE TRAILS THAT MAXIMIZE USAGE WHILE PROVIDING PLACES FOR WALKING AND BICYCLING WITHOUT CONFLICTS WITH MOTOR VEHICLES.**

**Policy OSPT.3.1 - Develop a trails system that provides for maximum connectivity, so that all trails are linked for greater use as recreational and travel routes.**

**Action OSPT.3.1.3 - Provide appropriate pedestrian and bicycle linkages to existing facilities, particularly to those facilities within the American River Parkway and the Folsom South Canal.**

### **AMERICAN RIVER PARKWAY PLAN**

The American River Parkway Plan was adopted by Sacramento County in 1985 to manage the Parkway's natural resources, to allow recreation in a natural environment, and to coordinate Parkway planning and management efforts. The County recently updated the American River Parkway Plan and the City of Rancho Cordova is a partner in the planning efforts to preserve and enhance the area and recreational uses adjoining the City's northern boundary.

## **3.9.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES**

The alternatives were evaluated for impacts on existing utilities, public services and parks and recreation, and the adequate provision of these services to the planned developments. The primary issues at the project sites involve the provision of adequate utilities and public services to the planned developments, and not negatively impacting existing utilities and public services that may be affected by project activities.

Land use mitigation measures would be enforced by the City of Rancho Cordova; the project applicants would participate in their implementation.

### **3.9.4.1 THRESHOLDS OF SIGNIFICANCE**

Impacts to utilities and public services will be considered significant if any of the following criteria are met:

- Consistency with policies of the City of Rancho Cordova General Plan relating to energy, fire protection, law enforcement, schools, parks and recreation, telephone and cable television, public transit, libraries, solid waste handling and sewage.
- Provision of adequate services for energy, fire protection, law enforcement, schools, parks and recreation, telephone and cable television, public transit, libraries, solid waste handling and sewage.
- Not increasing the demand from existing agencies providing services for energy, fire protection, law enforcement, schools, parks and recreation, telephone and cable television, public transit,

libraries, solid waste handling and sewage without contributing to the cost of such services, or otherwise compensating for the additional services required.

The City of Rancho Cordova and CRPD's Quimby Act standard for dedication of parkland is 5 acres per 1,000 residents. A park and recreation impact is considered significant if implementation of the alternatives under consideration would do either of the following:

- Provide insufficient mini, neighborhood, and community parkland according to CRPD standards;
- Provide insufficient parkland according to the City and CRPD's Quimby standard of 5 acres per 1,000 residents.

### **3.9.4.2 ANALYSIS METHODOLOGY**

The following impact analysis of each utility and public service covers the entire plan area, whereas the six project areas represent only 14.4% of the Sunrise-Douglas Community Plan dwelling units. Therefore, the impacts can be expected to be proportionately less for the Proposed Project Alternative. The Reduced Footprint Alternative would have 77% of the development of the Proposed Project Alternative, and the No Action Alternative, 63%. Planned utilities and public services would be scaled back to serve these smaller developments.

The evaluation of recreational resources is based on a comparison between existing and planned future recreational facilities and City of Rancho Cordova and CRPD policies. The demand for recreational resources was estimated based on Draft Master Plan standards for parkland acreage relative to population size. The number of residents on the project site was estimated based on a per-dwelling-unit population generation factor of 2.6.

Because the City of Rancho Cordova would measure the park land standard for the Specific Plan area as a whole, and not for each individual lot, this analysis evaluates the park land acreage and population for the entire Specific Plan area, and not for the six properties. In addition, the Sunridge Specific Plan Area is organized into discrete neighborhoods, or "Villages." The boundaries of the Villages generally do not correspond with the property boundaries of the applicants. Neighborhood amenities, including parks, were planned to correspond to the Village boundaries and are not necessarily evenly distributed within each applicant's property. Therefore, for this impact analysis, the ratio of park acreage to expected population was compared for the entire Specific Plan area, as opposed to the ratio for each applicant's property, or for the six properties as a whole. The CRPD confirmed that their calculations would be performed for the Specific Plan as a whole (Pers. Comm., Mr. Dave Edmonds, CRPD, April 2010).

Parklands (community and neighborhood parks) proposed for the project are the focus of this analysis. Open Space, Open Space Preserve, Private Recreation, bike paths, and Public/Quasi-Public land uses (including multiuse stormwater detention basins) are not considered part of this analysis because CRPD does not consider these uses as meeting parkland dedication requirements; therefore, these uses were not included in the estimating total parkland acreage.

### **3.9.4.3 IMPACT ANALYSIS**

The Utilities and Public Services impact analysis is provided for the Sunridge Specific Plan Area. This section addresses the environmental consequences of the Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternatives.

**IMPACT3.9-1 - Increased demand for energy services.** *Implementation would increase the demand for electricity and infrastructure including electrical transmission lines and substations.*

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative.** Approximately 400 residential units may be able to be served initially by an existing electrical substation located near Sunrise Boulevard and Jackson Highway. Development of the entire community land area would require approximately six new electrical substations and overhead 69kV transmission lines along major roadways. Three of the new electrical substations would be needed to serve the area, plus construction of power lines along Douglas and Grant Line Roads.

In order to provide natural gas service, new gas distribution feeder mains, regulator station, odorizer stations, valve lots, and distribution and transmission lines would also be needed.

Land uses beneath the existing 230kV transmission lines that traverse the analysis area are restricted in the 350-foot corridor easement. No structures or water bodies are allowed in this area, and clear unrestricted access must be maintained.

Implementation of the mitigation measures would ensure consistency with the requirements identified herein and would fully mitigate the potential for impacts associated with the provision of electrical and gas services. The Proposed Project, Reduced Footprint, and No Action Alternatives impact would be **less than significant with mitigation**.

**Mitigation Measure 3.9-1: Coordination with electric utility service.**

The project applicants would address and resolve project-related electrical facility issues through close coordination with SMUD in project planning and development. The applicants would grant all necessary right-of-way for installation of electrical facilities. Coordination with SMUD would occur and any required agreements would be established prior to necessary permits or approvals for the project.

To promote the safe and reliable maintenance and operation of utility facilities, the California Public Utility Commission has mandated specific clearance requirements between utility facilities and surrounding objects or construction activities. To ensure compliance with these standards, future development project applicant(s) would coordinate with PG&E early in the development of their development plans and would provide for unrestricted utility access and prevent easement encroachments that might impair the safe and reliable maintenance and operations of PG&E's facilities.

Residential design in all subdivisions would adhere, to the greatest practical extent, to the SMUD energy Efficiency/Load Management Measures for Residential New Construction.

**IMPACT3.9-2 - Increased demand for fire protection services.** *Implementation would increase the demand for fire protection services and delay service response time.*

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative.** The Specific Plan would allow 10,020 dwelling units and 1.74 million square feet of commercial uses on 2,632 acres, within a portion of the proposed Sunrise-Douglas Community Plan. The Sacramento Metropolitan Fire District had indicated that one or more new staffed fire stations would be required to provide adequate fire protection within the Specific Plan at buildout. There is presently a station five miles to the south of the plan area and another existing station six miles to the north.

In March 2003, the Sacramento Metropolitan Fire District board of directors approved a \$50 million Fire Station Replacement Program to construct eight new fire stations in the district. The largest of the proposed new stations in the replacement program is Station 68, which was constructed at 4381 Anatolia Drive, 2 miles from the eastern boundary of the project area. This station has 16,000 square feet of space and house 13 firefighters. The District has reviewed the project and indicated their support for the proposed system of major streets (arterials and collectors). Specific design requirements of the District would be implemented which would fully mitigate potential project impacts on fire protection service. The Proposed Project, Reduced Footprint and No Action Alternative's impact would be **less than significant with mitigation**.

**Mitigation Measure 3.9-2: Optimizing fire protection service and water supply infrastructure.**

The Specific Plan land use map would be modified to reflect an appropriate fire station site, in consultation with the Sacramento Metropolitan Fire District.

Cul-de-sacs would not exceed 150-feet in length where possible, in order to facilitate emergency vehicle response throughout the development area. Off-street bikeways, pathways, and recreational areas would provide adequate access for firefighting apparatus.

All development would meet minimum water supply requirements for fire flow, type of land use.

Accessibility for fire control would meet the specifications of the Fire District and would be in place during all phases of the project.

**IMPACT 3.9-3 - Increased demand for law enforcement services.** *Implementation would increase the demand for police services may result in delay in service response time.*

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative.** Demand for services currently exceeds the supply of resources, which is linked primarily to the County General Fund. Growing demand and a relatively slower growing resource base has led to an inability to maintain historic levels of service. Reducing services has enabled the Sheriff's office to maintain essential services.

The design of a development can influence the demand for services through the presence or absence of internal security measures. Project circulation design can also affect the Sheriff Department's ability to provide timely emergency response. The Department has standard design recommendations for residential developments. The Sheriff's office has reviewed the proposed project and identified various design features which would minimize the demand for law enforcement services. The Proposed Project Alternative, Reduced Footprint and No Action Alternative's impact would be **less than significant with mitigation**.

**Mitigation Measure 3.9-3: Public safety and crime prevention planning.**

Future development projects would consult with the Sheriff's Department and implement recommended crime prevention/safety development design measures to the maximum extent feasible.

**IMPACT 3.9-4 - Increased demand for school services.** *Implementation would increase the demand for public school services beyond the school district capacity.*

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative.** Build-out of the Specific Plan would generate the following student population, by District:

- In the Folsom Cordova Unified School District 235K-6; 64 Middle; 121 High
- In the Elk Grove Unified School District: 3,560 K-6; 982 Middle; 1,590 High

In addition to these 6,552 (total) new students generated by build-out of the Specific Plan, development of the remaining Community Plan area would ultimately generate an additional 8,168 students, for a total student population of 14,720 within the Sunrise-Douglas planning area.

For the Specific Plan, four elementary schools, one middle school, and one high school would be needed in the Elk Grove District. The land use plan includes four elementary school sites within the Specific Plan area, and one combined middle school and high school site within the Community Plan area, which is expected to be adequate to serve Specific Plan development. Additional school sites would need to be designated within the Community Plan area at the time that specific land use plan(s) are developed for that area, in order to provide an adequate number of school sites to serve build-out development within the remaining Community Plan area. The location of future school sites within the Community Plan area would be determined in consultation with the relevant school district, and would meet the following minimum local criteria and any applicable state criteria for schools siting:

- School sites shall be basically level and square in shape, with no more than 3 to 5 width-to-length ratio.
- Schools shall be located away from major power lines, such as the 230kV corridor that traverses the Plan area.
- Schools shall not be located within an existing or proposed noise contour line of 65 CNEL/ $L_{dn}$  or greater and all portions of the site must be mitigable to 60  $L_{dn}$ .
- Schools shall not be located with any aircraft accident exposure or airport safety areas, nor conflict with any Airport Land Use Commission (ALUC), Federal Aeronautics Administration (FAA), Air Installation Compatible Use Zone (AICUZ), or California Division of Aeronautics policies or regulations. If a site is within 2 miles of the Mather Airport runways, or any other runway or heliport, it must receive California Division of Aeronautics review.
- The schools shall be located in residential neighborhoods along secondary collector streets, typically with two street frontages.
- Schools and adjacent lands affecting the use of the site must be free of any significant environmental constraints, including but not limited to protected habitats or species, water courses, wetlands or vernal pools, potentially toxic and hazardous substances, and geologic, seismic, topographic, or soil restrictions. Application of agricultural chemicals on farmlands adjacent to proposed school sites may be considered a constraint.
- School sites must be free of wetland constraints or within an area permitted to be filled.
- The site must not be significantly affected by any nuisance factors such as odors associated with farm operations, landfills, or sewage treatment plans. Proximity to the Sacramento Rendering Company and prevailing wind direction shall be disclosed.
- Schools must be adjacent to the compatible uses. Industrial and commercial uses are not typically considered compatible adjacent uses for elementary schools.
- Schools should not be on land under active Williamson Act contract.



- Schools must have timely access to all utilities and services, including sewer, water, gas, electric and drainage. Utility easements on school sites should be avoided. The site must not be traversed by or immediately adjacent to major fuel, natural gas, or hazardous materials/waste pipelines or storage tanks.

The Public Facilities Financing Plan for the Specific Plan area indicates that funding of needed school facilities would occur through the payment of Elk Grove and Folsom Cordova school impact fees, through participation in the Elk Grove School District's Mello Roos Community Facilities District (CFD), and through the State School Building Program. By contributing towards the costs of school facilities as outlined in the proposed Financing Plan, and by designating an adequate number of sites for new school construction, Sunrise-Douglas Plan area development would have a less than significant impact on school facilities. The Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative impact would be considered **less than significant**.

Mitigation Measure 3.9-4: No mitigation measures are required.

**IMPACT3.9-5 - Increased demand for telephone and cable television services.** *Implementation could increase demand on telephone and cable television services.*

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative.** Telephone and cable television service would be provided by AT&T and Sacramento Cable using lines placed within public utility easements along roadways. Service cabinets and other infrastructure would be placed as needed throughout proposed subdivisions, as directed by the service provider. Coordination between the service providers and developer(s) would preclude any adverse impacts associated with the provision of these services. The Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative impact would be considered **less than significant with mitigation**.

Mitigation Measure 3.9-5: Coordination with the applicable service provider.

Future development project applicants would address and resolve issues related to the provision of telephone and cable television services within the Specific Plan Area through close coordination with the applicable service provider during project planning and development.

**IMPACT3.9-6 - Increased demands for transit service.** *Implementation could increase demand for transit services.*

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative.** The RT does not currently provide service to the Sunrise-Douglas planning area. Although this planning area is within RT's district boundaries, the area south of Douglas Road and east of Sunrise Boulevard is not within RT's "activated" territory. For RT to serve this area in the future, the Board of Supervisors must adopt a resolution requesting activation of the area within the RT district.

The extension of bus service on Sunrise Boulevard to the project area is not within RT's short-range planning horizon, although it is within RT's long range (20+) year planning horizon. However, the RT Planning Manager has indicated that bus service would only be extended if land use densities/intensities in the corridor are sufficient to support public transit service, and adequate transit capital and operating funds are available (Anthony Palmere, RT Planning Manager, NOP Comment Letter, March 18, 1997). Policy CI-13 of the County General Plan, however, indicates that if the Specific Plan is approved, the Board of Supervisors would support a minimum level of transit to this development area, even if it does not have the densities to generate sufficient transit ridership for "high quality service."

In the Highway 50 corridor, light rail service was extended in 1998 from Butterfield Station to a new station at Mather Field Road, and to the City of Folsom from the Mather Field/Mills Station in 2005. This extension includes a station at Sunrise Boulevard.

RT staff has cited four “primary reasons” why RT believes it would not be cost effective to extend “high quality” (frequent) fixed-route bus service to the proposed new community:

- Low proposed densities overall
- Medium density areas that are limited in size and distributed rather than clustered
- A planning area that is isolated from other transit-supporting land uses
- No identified transit capital or operating funds

If RT were to extend bus service to the proposed community, the Planning Manager has indicated that the most likely service scenario would be the provision of one or two peak hour trips from the intersection of Sunrise Boulevard and Douglas Boulevard to the nearest light rail station, or hourly “lifeline” service to connect the new community with other adjacent communities and light rail station(s). The RT Planning Manager has indicated that “it is highly unlikely that” the proposed predominantly low density residential community “would generate sufficient ridership to achieve minimum transit productivity standards to justify a high level of transit service” (July 15, 1998).

The Specific Plan proposes a private shuttle system with 15 to 30 minute headway, which would loop through the Plan area and connect commuters with Regional Transit service. The Draft Specific Plan PFFP includes a fee component of \$195,000 to cover the capital costs of three shuttle vehicles. However, the PFFP does not identify how the private shuttle system’s operation and maintenance costs would be funded. Such a funding mechanism should be identified to ensure that the shuttle system can function properly. On-site bus stop construction costs would be included in the costs of frontage improvements to be paid for by adjacent development.

Development within the Plan area would also be subject to the payment of District 3 County Roadway and Transit Fees, to help fund public regional roadway and transit facilities.

Implementation of the Specific Plan would not disrupt or interfere with planned public transit facilities. However, the project’s overall low proposed densities would likely preclude the extension of high quality public transit service in to the planning area, which would exacerbate the traffic and air quality impact resulting from development of the planning area. Increasing the project’s residential densities and non-residential intensities in proximity to potential future transit routes to encourage the delivery of high quality public transit serviced, and successful operation of the private shuttle system, would reduce the impacts from the Proposed Project, Reduced Footprint Alternative and No Action Alternative on transit availability and usage to a **less than significant with mitigation**.

**Mitigation Measure 3.9-6: Establish funding for shuttle network system.**

The Specific Plan Public Facilities Financing Plan shall identify a funding mechanism for the private shuttle systems long-term operating and maintenance costs commensurate with the level of transit service proposed.

<b>IMPACT 3.9-7 - Increased demands for library service. <i>Implementation may increase demand for library services.</i></b>
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Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative. According to the proposed Specific Plan PFFP, space for a public library is planned to be provided in the combined middle school, high school, and community park complex within the Community Plan area. The Draft Specific Plan PFFP contains an initial fee component of \$2,718,000 for the Specific Plan area's contribution towards funding of library facilities. Therefore, Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative impacts upon library services are expected to be **less than significant**.

Mitigation Measure 3.9-7: No mitigation measures are required

**IMPACT3.9-8 - Increased demand for solid waste service.** *Project implementation increases demands for solid waste service.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative. Development of the Specific Plan area would generate the need for expanded solid waste collection and disposal services, which would be funded through the collection of user fees. Expansion of the Kiefer Landfill was recently approved, which would provide capacity to accommodate projected population growth through the year 2035. These planned solid waste facilities would therefore be sufficient to serve development of the Plan area. The Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative's impact on solid waste service is considered to be **less than significant**.

Mitigation Measure 3.9-8: No mitigation measures are required

**IMPACT3.9-9 - Lack of consistency with the General Plan.** *Implementation may be in conflict with the principles of the General Plan.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative. The Sunridge Specific Plan includes development standards and design guidelines. The Specific Plan appears to be substantially consistent with General Plan policies relating to the provision of public services.

The utility and public service impact analysis for the Reduced Footprint Alternative and No Action Alternative is essentially the same as that for the Proposed Project Alternative; it varies only in degree. The utility and public service impact analysis for the Proposed Project Alternative, described in Section 4.2.4, covers the entire Specific Plan area. The Reduced Footprint Alternative represents approximately 25% of the Specific Plan dwelling units, the No Action Alternative approximately 21%, and the Reduced Footprint and No Action Alternatives impacts can be expected to be proportionately less. The Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative's impact would be considered **less than significant**.

Mitigation Measure 3.9-9: No mitigation measures are required

**IMPACT3.9-10 - Sufficiency of project site parkland to meet project site demand/ increased demand on regional parks.** *City of Rancho Cordova standards require 5 acres of parkland per 1,000 residents. Implementation should not increase the demand on existing neighborhood, community and regional parks such that the physical deterioration of the existing facilities would occur or be accelerated.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative – The City of Rancho Cordova and CRPD requires 5 acres of parks for every 1,000 residents. Residential development under the Sunridge Specific Plan would involve construction of 10,020 dwelling units, generating a population of 26,052 persons at buildout, requiring 130 acres of parks to meet the standard. The

Proposed Project Alternative includes 78 acres of parks, 52 acres less than the minimum. This discrepancy results from several factors. A change in park land dedication requirements occurred when the City of Rancho Cordova incorporated. Based on information from Sacramento County, the applicants had anticipated the park land dedication requirements to decrease from 4.87 to 4.18 acres/1,000 residents. However, the park land dedication requirements increased from 4.87 to 5.0 acres/1,000 residents. In addition, the Draft Specific Plan Public Facilities Financing Plan included a dedication of 99.5 acres of park land and provided the equivalent of 12.2 acres of park land acquisition in-lieu fees (12.2 acres x \$65,000/acre of off site park land acquired = \$793,000) to satisfy Quimby Act park requirements. The total provided park land of 111.7 acres would have satisfied the anticipated 4.18 acres/1,000 residents dedication requirement. Because the park land dedication requirements increased, the SDCP/Sunridge Area Specific Plan falls short by 18.3 acres, providing only 85.9% of the minimum required park land.

As a subset of the Sunridge Specific Plan Area, the Proposed Project Alternative would be expected to also provide only approximately 86% of the minimum required park land required. This amount would not provide sufficient park facilities to meet the demand generated by the Proposed Project Alternative population at buildout, and there would be a **significant impact** related to parkland acreage.

Because implementation of the Proposed Project Alternative would result in a deficit of available parkland acreage, deterioration of existing neighborhood and community parks could occur or be accelerated from increased demand, and there would be a **significant indirect impact**.

Because the Reduced Footprint Alternative and No Action Alternative are expected to maintain the same ratio of residential units to parkland, the Reduced Footprint Alternative also would be expected to provide only approximately 86% of the minimum required park land required. This amount would not provide sufficient park facilities to meet the demand generated by the Reduced Footprint Alternative and No Action Alternative population at buildout, and there would be a **significant impact** related to parkland acreage.

Because implementation of the Reduced Footprint Alternative and No Action Alternative would result in a deficit of available parkland acreage, deterioration of existing neighborhood and community parks could occur or be accelerated from increased demand, and there would be a **significant indirect impact**.

#### Mitigation Measure 3.9-10: Revise the Specific Plan Land Use Plan.

The Specific Plan land use plan would be revised to show 130 acres of park land or equivalent (i.e., either acreage or park land acquisition in-lieu fees). The CRPD confirmed that they would accept in-lieu fees for any deficit, especially as the development is fully planned, and partially built (Pers. Comm., Mr. Dave Edmonds, CRPD, April 2010). Implementation of this mitigation measure would reduce the impact for all three alternatives to **less than significant**.

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## **3.10 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE**

This section describes the affected environment and environmental consequences with respect to Hazardous, Toxic, and Radioactive Waste (HTRW). The information presented for the affected environment for HTRW is based upon readily available environmental documents produced from 1997 to 2010.

This HTRW section evaluates the six project sites for evidence of potential soil and groundwater contamination resulting from current and former activities that could result in impacts to future residents. This section presents the Preliminary Phase I Environmental Site Assessment Sunrise-Douglas Specific and Community Plans (PSA) (Wallace-Kuhl, 1997). The Preliminary Phase I PSA was prepared for the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR (County of Sacramento, 2001) and remains relevant to this area of analysis. The assessment addressed the environmental conditions at this area of analysis and is incorporated by reference.

The Preliminary Phase I PSA also reviewed and referenced other project studies on the potential soil and groundwater impacts from regional contamination plumes. The other project studies referenced included Phase I Preliminary Site Assessment by Anderson Consulting Group (May 1997) and the Draft Evaluation of Groundwater Impacts Report by Bookman-Edmonston Engineering, Inc. (October 1996).

### **3.10.1 AREA OF ANALYSIS**

The HTRW project location is defined as the soils and groundwater directly under the Sunridge Properties geographic boundaries and sources nearby that may affect groundwater under the Sunridge Properties geographical boundaries.

### **3.10.2 AFFECTED ENVIRONMENT**

The Preliminary Phase I PSA evaluates HTRW at the six project sites through a review of environmental record sources and hazardous material databases (Wallace-Kuhl, 1997). Hazardous material means any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a hazard to human health if released into the workplace or the environment. Hazardous materials include hazardous substances and hazardous waste (California Health and Safety Code §25501). Hazardous waste means a waste that meets any of the criteria for the identification of a hazardous waste (e.g., toxic, corrosive, ignitable, explosive) adopted by the regulatory agency. The environmental review followed standard environmental practice that continues to remain an acceptable environmental assessment practice today (American Society of Testing Materials (ASTM), 2005).

The 1997 review of environmental record sources and hazardous materials databases was supplemented with current information gathered through the Geotracker database. In 2005, Geotracker was created as an internet based regulatory database and geographic information system to environmental data. The database was used to supplement the Preliminary Phase I PSA and provided regulatory data about hazardous waste permitted facilities, leaking underground fuel tanks, Department of Defense, Spills-Leaks-Investigations-Cleanups and Landfill sites (State Water Resources Control Board (SWRCB), 2010).

### **3.10.2.1 FIELD RECONNAISSANCE AND DATA REVIEWS**

The Preliminary Phase I PSA provided a review of topographic maps, historical aerial photographs, local, state, and federal databases, previous PSAs and other relevant project studies, and conducted on-site interviews. This section summarizes the findings and supplements to the Preliminary Phase I PSA.

#### **TOPOGRAPHIC MAPS AND AERIAL PHOTOGRAPHS REVIEW**

The evaluation of the topographic map did not indicate the presence of manufacturing facilities, industrial ponds, storage tanks, airfields, or other industrial facilities or related land uses in the project area. Review of aerial photographs did not indicate obvious evidence of potential hazardous materials, industrial facilities or related land use (Wallace-Kuhl, 1997).

The findings were reaffirmed with a recent review of the Rancho Cordova topographic map and satellite images. The U.S. Geological Service topographic map has not been updated since the Preliminary Phase I PSA evaluation. Consequently, the topographic map review is unchanged from the Preliminary Phase I PSA. The satellites and aerial photographs review were provided through the Google Earth imagery. The average age of Google imagery is three years (Google, 2010).

#### **FIELD OBSERVATIONS AND OTHER PROJECT STUDY REVIEWS**

The Phase I PSA observations noted that some of the rural homes in the area of analysis were constructed prior to the 1960s. Because asbestos was banned in 1979, this led to concerns of potential asbestos containing materials (ACMs) in the buildings. Regulated ACMs contains friable asbestos that can be reduced to powder by hand pressure when dry. Examples of common ACMs include spray acoustic ceilings, duct wrap, plaster, paper backing of linoleum, wallboard, and thermal insulation. Some sites were also observed to have small amounts of household garbage that had been illegally dumped. Based on the Preliminary Phase I PSA, no adverse findings were found with respect to potential hazardous materials for the vast majority of the area of analysis (Wallace-Kuhl, 1997).

On March 24, 2010, Brown and Caldwell conducted a cursory windshield survey of the area of analysis. The area of analysis remains uncultivated farmland covered with non-native grasses and vegetation. There was no visible evidence of hazardous material disposal at the area of analysis. There are no homes or buildings remaining at the Douglas Road 103, Douglas Road 98, and Grant Line Road 208 project sites. The only structures observed were several structures at Sunridge Village J, what appeared to be an unoccupied farmhouse on the southeast corner of Anatolia IV, and an occupied house and outbuildings at Arista del Sol.

An abandoned submersible domestic well, water pressure tank, and furnace remain on Sunridge Village J. Remnants of a former farming operation include a Fairbanks-Morse™ turbine pump on an abandoned irrigation well and 3 concrete stand pipes. A municipal sanitary sewer manhole is visible on the boundary of Sunridge Village J. No other building structures were observed. The windshield survey of the location observed no hazardous material storage containers or obvious evidence of hazardous materials disposal or stressed vegetation.

There is a farmhouse, detached garage, and outbuilding located on Anatolia IV. Several vehicles are located on this property. A pile of asphalt grindings, remnants of soil piles, and large diameter corrugated metal culverts were visibly stored on the property. There was no obvious evidence of hazardous material disposal or stressed vegetation at the location.

A farmhouse and outbuildings are located at Arista del Sol. The windshield survey of the location observed no obvious evidence of hazardous materials storage containers, hazardous material disposal, or stressed vegetation. The observations from the 2010 windshield survey are consistent with the information seen in the topographic map and satellite images (U.S. Geological Service, 1994; Google, 2010).

As previously stated, the Preliminary Phase I PSA provided a review of other project studies conducted in the area of analysis. These studies reported on laboratory analysis of soil and groundwater samples taken from the area of analysis. In 1991, surface soil samples from a site near an old olive orchard were laboratory analyzed. The soil samples only detected dichlorodiphenyldichloroethylene, polychlorinated biphenyls, and inorganic lead below the Department of Toxic Substance Control (DTSC) health risk guidelines. The investigation indicated that the olive orchard had been out of production for several years prior to environmental assessment and the use of potentially persistent pesticides had been uncommon. In 1997, groundwater samples were analyzed and contaminants were not detected (Wallace-Kuhl, 1997).

## **FEDERAL DATABASE SEARCHES**

Various search radii were used during the review of federal environmental lists. The former Mather Air Force Base (MAFB) (now known as Mather Field) and Aerojet General Corporation (Aerojet) have been identified as Federal Superfund sites located near the area of analysis during review of the U.S. Environmental Protection Agency (USEPA) Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), and National Priorities List. The CERCLIS database identifies sites or facilities that are candidates for Federal Superfund status. Within the area of analysis, the Federal databases did not identify any Resource Conservation and Recovery Act (RCRA) generators or sites listed on the USEPA Emergency Response Notification System database (Wallace-Kuhl, 1997).

To supplement the findings of the previous record search, a database search was conducted using Geotracker. Geotracker is a California legislatively-mandated database and geographic information system for online access to environmental data. The database tracks regulatory data about hazardous waste permitted facilities, leaking underground fuel tanks, Department of Defense, Spills-Leaks-Investigations-Cleanups and Landfill sites. On January 1, 2005, the State Water Resources Control Board (SWRCB) adopted regulations that require electronic submittal of information for soil and groundwater cleanup activities to Geotracker.

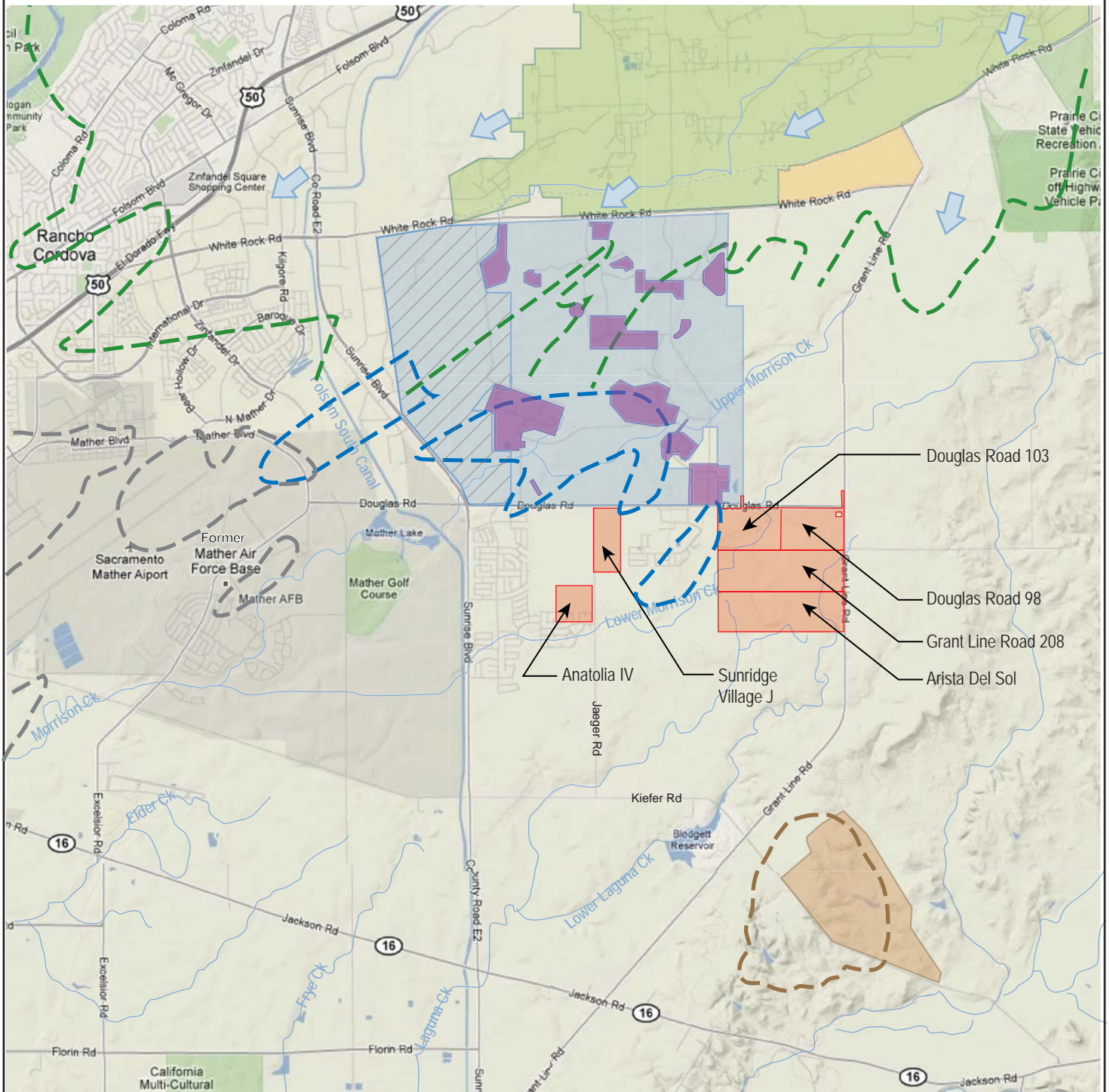
An updated search for information gathered through the Geotracker database did not provide any additional information not already provided through the Preliminary Phase I PSA. Using a 1-mile search distance beyond the area of analysis, the database search did not identify any additional records of RCRA hazardous waste permitted facilities or contaminated site cleanup activities (SWRCB, 2010). The search distance is consistent with the Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process and the Standards and the Practices for All Appropriate Inquiries Rule promulgated by USEPA (ASTM, 2005).

## **STATE AND COUNTY DATABASE SEARCHES**

The Preliminary Phase I PSA provided a review of various state databases but did not identify any known contaminated municipal groundwater wells, producing or abandoned California Department of Oil and Gas petroleum wells, or active landfills on or within one-half mile of the area of analysis. The Kiefer Boulevard Sacramento County Landfill was identified with its overall site boundary located over 1.5 miles from the area of analysis. The inactive White Rock Road North Dump was also identified with its location about 2 miles northeast of the area of analysis (Figure 3.10-1).



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Source: Google Maps, terrain



Figure 3.10-1. Site Locations and Contaminant Plumes

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The Inactive Rancho Cordova Test Site (IRCTS) (also known as McDonnell Douglas) and former MAFB appeared on the DTSC list of Active Annual Workplan Sites. The former MAFB is located west and down gradient from the area of analysis; the closest contaminant plume was approximately 2 miles west of the area of analysis and migrating away from the area of analysis (Figure 3.10-1). As previously identified, the former MAFB is a Federal Superfund site (Wallace-Kuhl, 1997).

In 1997, a review of the RWQCB's Central Valley Tank Tracking System database and the Office of Environmental Health Hazard Assessment's Hazardous Waste and Substances Sites list revealed that the only contaminated site within 0.5 mile of the area of analysis was Azteca Construction. An updated data search was conducted through the Geotracker database which indicated Azteca Construction has since been remediated and is no longer an environmental concern (Sacramento County, 2010b; SWRCB, 2010).

The RWQCB Spills-Leaks-Investigations-Cleanups database indicated contamination at the former MAFB and the IRCTS site.

The Sacramento County Environmental Management Department (SCEMD) Regulatory Compliance List revealed no underground storage tank sites listed within a mile of the area of analysis. The database search did not show any additional records of active leaking underground tanks, permitted underground storage tank facilities, or state contaminated site cleanup activities within a 1-mile radius of the area of analysis (SWRCB, 2010).

The Toxic Cleanup List (March 2010) is maintained by the SCEMD and contains an inventory of contaminated locations in Sacramento County. The Toxic Cleanup List was reviewed for locations that are currently contaminated with HTRW. The data search confirmed the information provided through Geotracker and did not reveal any additional records of active leaking underground tanks or contaminated site cleanup activities within a 1-mile radius of the area of analysis (Sacramento County, 2010b).

### **3.10.2.2 REGIONAL GROUNDWATER CONTAMINATION**

Due to groundwater contamination issues, the USEPA has designated two Federal Superfund sites in the area likely to affect local ecosystems or people. These sites include Aerojet (including the IRCTS) and the former MAFB. Regulated cleanup activities are underway on both sites (City of Rancho Cordova, 2006).

The Sacramento County Kiefer Landfill and the White Rock Road North Dump site are located southwest and northeast of the area of analysis, respectively. Both of these locations are located 1.5 to 2 miles from the area of analysis but are presented here because of their recognition in previous studies and proximity to the area of analysis. These facilities are described below.

#### **INACTIVE RANCHO CORDOVA TEST SITE**

The IRCTS is a 2,728-acre site north of the area of analysis and is owned by GenCorp Realty Investments, the parent company of Aerojet. West of the IRCTS is the 1,100-acre site (referred to as the Excluded Area) currently owned by Elliott Homes, Inc. Together the IRCTS and Excluded Area form the 3,828-acre future Rio del Oro development. The information regarding the IRCTS in the Rio del Oro Specific Plan Project Draft EIR/EIS is incorporated by reference and a brief summary is provided below (City of Rancho Cordova and USACE, 2006). The information regarding the IRCTS from the Rio del Oro EIR/EIS continues to be relevant and appropriate for this assessment. In 1961, Douglas Aircraft Company purchased the entire property from GenCorp Realty Investments and established a static rocket assembly and testing facility known as the Sacramento Test Center. In 1977, the Sacramento Test Center was deactivated and removed. The GenCorp Realty Investments reacquired the IRCTS from the Douglas

Aircraft Company (now known as the Boeing Company) in 1984 and used the site to discharge treated groundwater. In 1979, trichloroethylene (TCE) and other volatile organic compounds (VOCs) were detected in the groundwater on and surrounding the Aerojet site north of the IRCTS. Investigations indicated that part of the contaminant plume was migrating southwest toward the IRCTS. In addition, soil at the IRCTS has been shown to be contaminated with TCE, Freon, methylene chloride, kerosene, perchlorate, dioxins and furans, lead, and other metals.

The IRCTS was consequently organized into soil and groundwater operable units (OUs) to facilitate the remediation process. The 15 soil OUs within the IRCTS underwent remedial investigation and remediation. While some of the soil OUs received a clean closure for residential land use, other areas will require land use restrictions, and are continuing in the investigation and remediation process.

The IRCTS groundwater investigation revealed the groundwater contaminant source areas and the groundwater plume gradient toward the west-southwest (Figure 3.10-1). The TCE and perchlorate contaminants were detected in monitoring wells south of the IRCTS and on the former MAFB. A risk assessment identified TCE and perchlorate as the chemicals that would pose the principal threat to human health, if people are exposed to them. In 2002, groundwater treatment was initiated at the former MAFB, south of the former Administration Area, and the IRCTS. In 2005 and 2006, additional wells were placed along Douglas Road to address the southern IRCTS plume. The groundwater treatment program is continuing to expand to capture the groundwater contaminants (Department of Toxic Substances Control, 2007).

The Excluded Area acted as a buffer zone and was not used for aerospace testing or other industrial activities. Aerojet completed investigation of the Excluded Area and concluded the area was not a contaminant source. However, evidence of illegal dumping activities of trash and junk cars, empty drums, and oily/tarry soils were encountered at various locations around the perimeter of the readily accessible dredge tailings and a former ranch site. Following cleanup activities, the soil was remediated to residential land use. Groundwater beneath the area, which is between 100 and 150 feet below ground surface, remains contaminated with VOCs (primarily TCE) and perchlorate. To address DTSC concerns about the contaminated groundwater, Aerojet reserved all rights to water lying below the surface of the Excluded Area and granted easements to itself and DTSC for the installation of monitoring wells, extraction wells, and pipelines in order to address the remediation of the contaminated groundwater. These deed restrictions prohibit use of this groundwater for potable or irrigation water supply wells (City of Rancho Cordova and USACE, 2006).

## **AEROJET GENERAL CORPORATION**

The Aerojet site covers approximately 5,900 acres and is located about 2 miles north of the area of analysis (Figure 3.10-1). Underlying the site are extensive 40 to 100 foot-deep dredge tailings, a remnant of past gold mining operations.

Since 1953, Aerojet has manufactured liquid and solid propellant rocket engines for military and commercial applications and formulated chemicals including rocket propellant agents, agricultural, pharmaceutical, and other industrial chemicals. Unknown quantities of hazardous waste including TCE, chemicals associated with rocket propellants, and chemical processing wastes were disposed on the site. Some wastes were disposed in surface impoundments, landfills, deep injection wells, leachate fields, and by open burning (City of Rancho Cordova, 2006).

In 1979, environmental investigations began at the site. In 1983, VOCs were found off-site in private wells and in the American River. Subsequently, groundwater contamination has been defined in a number of discrete plumes that move out radially to the north, west, and south from the site. The major

contaminants found both on-site and off-site are solvents including TCE, chloroform, and rocket fuel by-products (N-nitrosodimethylamine and perchlorate). Perchlorate, a component of solid rocket fuel, was found in drinking water wells off-site above health risk levels.

Groundwater is used extensively throughout the Rancho Cordova area to supply municipal, domestic, industrial and some irrigation water. Public and private drinking water supply wells have been contaminated and wells contaminated above response levels have been closed (Wallace-Kuhl, 1997).

The cleanup approach is to control groundwater contamination moving across the facility boundary with two OUs, then remediate soil and groundwater at source areas. The first groundwater action is underway. In August 2009, groundwater actions for the OU covering the groundwater containment on the north and south sides of Aerojet were presented to the public (USEPA, 2009a). Upon completion, a cumulative risk review will be completed to determine if any further action is required for the site as a whole (USEPA, 2009b).

Aerojet is operating six groundwater extraction and treatment (GET) systems at the site boundaries to prevent further off-site migration. In addition, Aerojet has conducted a number of removal actions for on-site soils, liquids, and sludges. In 1989, Aerojet was required to complete a comprehensive remedial investigation/feasibility study, maintain the current GET systems, monitor public water supplies for perchlorate, replacing water supplies impacted by perchlorate, provide annual updates to the monitoring plan for public water supplies, and reducing the discharge limit for N-nitrosodimethylamine at currently operating groundwater extraction and treatment facilities (City of Rancho Cordova, 2006).

In 2009, the TCE and perchlorate groundwater plume extends to about ¾-mile northwest of the area of analysis (Aerojet General Corporation, 2008; USEPA 2009a).

## **FORMER WHITE ROCK ROAD NORTH DUMP**

Adjacent to Aerojet is the former White Rock Road North Dump bordered by White Rock Road to the south, Old White Rock Road to the north, and Grant Line Road to the east. The former dump is undergoing groundwater remediation. From 1958 to 1964, the former dump received miscellaneous refuse and included a solid waste area and a liquid waste pond. Soil and soil vapor samples from the dump contained VOCs, semi-VOCs, polychlorinated biphenyls, polycyclic aromatic hydrocarbons, and dioxin/furans. Groundwater samples contained VOCs and several metals (Wallace-Kuhl, 1997; County of Sacramento, 2008). The extent of the groundwater plume from Aerojet and the former dump extends to the west-southwest (Figure 3.10-1).

## **FORMER MATHER AIR FORCE BASE**

MAFB was established in 1918 and is comprised of approximately 5,845 acres (Figure 3.10-1). Starting in 1941, its primary mission was to train navigators to operate advanced navigation, bombing, missile and electronic warfare systems. The base's industrial activities included vehicle, aircraft, and weapons maintenance. In September 1993, MAFB was decommissioned and officially closed through Department of Defense Base Closure and Realignment Commission.

A total of 89 potentially contaminated sites have since been identified. These sites include landfills, fire training areas, fuel spill areas, fuel storage areas, sewage treatment areas, firing ranges, drainage areas, and an area associated with the Air Force Base dry cleaning facility. Soil and groundwater are contaminated with VOCs, including TCE and perchloroethylene, and petroleum products.

Since the base closure in 1993, approximately 1,300 acres have been transferred under state oversight. The U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry, concluded the soil exposure situations at the former MAFB pose no apparent public health hazards.

Similar to the IRCTS, the base was divided into OUs to facilitate the environmental investigation and remediation process. The U.S. Air Force and community water suppliers have closed contaminated wells, installed treatment systems, and routinely monitor active wells. Regular monitoring includes collecting quarterly samples from on-base supply systems, off-base community supply systems, and private wells to the west and south, and analyzing the samples for VOCs and perchlorate. The U.S. Air Force also connected homes and businesses with private wells on the west to the community water supply system. In order to prevent current and future exposures to contaminants at levels of health concern in surface waters and sediment, the U.S. Air Force is completing remedial actions with oversight by the USEPA and the California Environmental Protection Agency (CalEPA) (City of Rancho Cordova, 2006).

In addition, groundwater is contaminated beneath portions of the former MAFB with five groundwater plumes identified. One of the groundwater plumes is in the Aircraft Control and Warning (AC&W) Disposal Area, located on the east-central part of the base between family housing and the aircraft alert apron. The AC&W groundwater plume contains TCE. Another groundwater plume, the Site 7 plume, begins at the southern edge of former MAFB and extends off-base; it is associated with the Site 7 Disposal Area. Landfills in the northeastern area of the base are believed to be the source of the Northeast plume that has low concentrations of chlorinated solvents (USEPA, 2006).

The eastern edge of the former MAFB is about 1 mile west of the area of analysis. The gradient of the groundwater plume appears to be west-southwest (Figure 3.10-1).

### **SACRAMENTO COUNTY KIEFER ROAD LANDFILL**

Sacramento County Kiefer Boulevard Landfill is located over 2 miles from the nearest boundary of the area of analysis (Figure 3.10-1). The groundwater contaminants include VOCs including perchloroethylene, TCE, trichloroethane, 1, 2-Dichloroethene, benzene, and vinyl chloride (Wallace-Kuhl, 1997).

The VOC plume extends about 3/4 mile to the southwest from the Kiefer Landfill boundary and about 1.5 miles from the area of analysis (Figure 3.10-1). Groundwater remediation at this landfill is on-going (Regional Water Quality Control Board, 2010; Sacramento County, 2010a). An updated search for information gathered through the Geotracker database did not provide any additional information. There are no documents concerning this site available on Geotracker (SWRCB, 2010).

### **3.10.3 REGULATORY FRAMEWORK**

There are numerous federal, state, and local laws and regulations pertaining to hazardous waste management applicable to remedial activities at the project site. Conformance with these laws and regulations is addressed through separate environmental review and regulatory oversight specifically associated with the remedial activities. These remedial activities are separate actions that are not part of the proposed Sunridge Specific Project Plan.

Federal, state, and local laws, regulations, and ordinances that would apply to construction and operational activities as part of the project are listed below.

### **3.10.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS**

#### **RESOURCE CONSERVATION AND RECOVERY ACT**

On July 26, 1982, the federal RCRA regulations were promulgated. The law regulates ongoing operations involving the generation, transportation, treatment, storage, and disposal of federal classifications of hazardous waste. The law was amended in 1984 by the Hazardous and Solid Waste Amendments, which established restrictions requiring the treatment of hazardous waste before disposal in landfills. Hazardous materials meeting the federal RCRA hazardous waste classification criteria, and that are no longer wanted would be classified as a RCRA hazardous waste and requirement management and disposal as a RCRA hazardous waste. The DTSC implements the RCRA hazardous waste program that has been authorized by USEPA.

#### **COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT**

Authorized by Title III of the Superfund Amendments and Reauthorization Act, the Emergency Planning and Community Right-to-Know Act (EPCRA) was enacted by Congress as the national legislation on community safety. This law is designed to help local communities protect public health, safety, and the environment from chemical hazards. To implement EPCRA, Congress requires each state to appoint a State Emergency Response Commission (SERC). The SERCs are required to divide their states into Emergency Planning Districts and to name a Local Emergency Planning Committee for each district.

#### **NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS**

The National Emissions Standards for Hazardous Air Pollutants (NESHAPs) for asbestos is applicable for the cleanup of certain kinds of asbestos waste. The federal regulations establish standards for inactive waste disposal sites for asbestos mills and manufacturing and fabricating operations, for active waste disposal sites, and for disposal of asbestos-containing waste from demolition and renovation operations (40 CFR §61.152).

#### **WORKER SAFETY REQUIREMENTS**

The U.S. Department of Labor, Occupational Safety and Health Administration (OSHA), is responsible at the federal level for ensuring worker safety. OSHA sets federal standards for implementation of workplace training, exposure limits, and safety procedures for the handling of hazardous substances (as well as other hazards). OSHA also establishes the minimum standards which each state must meet to establish a state health and safety program.

### **3.10.3.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS**

#### **CALIFORNIA HAZARDOUS WASTE LAWS**

California received USEPA authorization to administer and implement the RCRA program. The DTSC implements the RCRA program in conjunction with the state non-RCRA (California classified hazardous waste) management program, which contains requirements more stringent than the federal RCRA program. The regulations address the minimum standards for the management of RCRA and non-RCRA generation, transportation, treatment, storage, and disposal. The regulatory responsibility for the hazardous waste program in Sacramento County is shared between the DTSC and the Sacramento County Environmental Management Department (SCEMD).



## **CALIFORNIA HAZARDOUS MATERIALS RELEASE RESPONSE PLANS AND INVENTORY**

The California Hazardous Materials Release Response Plans and Inventory Act established minimum statewide standards for Hazardous Materials Business Plans (HMBPs). Businesses must prepare an HMBP if the business uses, handles, or stores a hazardous material (including hazardous waste).

Business facilities must retain an updated copy of the HMBP. The HMBP assures that appropriate actions are taken in the event of a hazardous material release and the response by emergency workers to a hazardous materials release at the facility. The HMBP consists of an inventory of the hazardous materials stored at the facility, a site map, an emergency response plan, and an employee hazardous material training program. The right-to-know requirements in the law allow public access to hazardous materials information stored and spilled into the environment within the community.

Facilities storing acutely hazardous materials may be required to develop a Risk Management and Prevention Program. The Risk Management and Prevention Program is a comprehensive hazards evaluation including the review of safety design systems, evaluation of work practices, system reliability, risk assessment, and preventive maintenance procedures. Facilities handling acutely hazardous materials in amounts in excess of federal threshold planning quantities for extremely hazardous substances must submit an additional inventory for the storage of acutely hazardous materials to the local implementing agency (i.e., SCEMD for Sacramento County).

## **CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION**

The California Division of Occupational Safety and Health (Cal/OSHA), protects workers from safety hazards through its Occupational Safety and Health program. The Cal/OSHA standards for hazardous materials in the workplace require the implementation of workplace training, exposure limits, and safety procedures for the handling of hazardous substances. The hazard communication program requires that hazardous substance container labeling, Material Safety Data Sheets, be available to employees, as well as information on the hazards and safety training.

### **3.10.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES**

#### **HAZARDOUS WASTE GENERATORS**

Sacramento County promulgated an ordinance to incorporate, implement, and enforce the management of hazardous waste in Sacramento County and municipalities within the County (Sacramento County Code (SCC) Chap. 6.98). The provisions of the codes establish the authority for the regulation and permitting of facilities that generate, store or treat small quantities of hazardous wastes (both RCRA and non-RCRA hazardous waste).

#### **HAZARDOUS MATERIALS BUSINESS PLANS AND THE CALIFORNIA ACCIDENTAL RELEASE PREVENTION PROGRAM**

Sacramento County promulgated an ordinance to incorporate, implement, and enforce the state hazardous materials business plan standards and procedures regarding the reporting of the location, type, quantity, and health risks of hazardous materials handled, used, stored or disposed within the unincorporated area of Sacramento County, and within the incorporated territory of each municipality within the county (SCC Chap. 6.96). This ordinance also established the authority for the regulation and permitting of facilities.

## **WELLS AND PUMPS**

Sacramento County promulgated an ordinance to protect the health, safety, and general welfare of the people of the County of Sacramento by ensuring that the groundwater of this County will not be polluted or contaminated by improper well construction, modification, repair, inactivation, or destruction, or by improper pump installation (SCC Chap. 6.28). The local well abandonment standards are designed to prevent groundwater contamination but can also serve to prevent human exposure to existing contaminated water.

## **CITY OF RANCHO CORDOVA GENERAL PLAN**

The goals, policies, or actions from the Rancho Cordova General Plan relating to HTRW that are applicable to the Proposed Action and alternatives under consideration are provided below (City of Rancho Cordova, 2006):

GOAL NR.5 – Protect the quantity and quality of the City’s water resources.

Policy NR.5.3 - Protect surface and ground water from major sources of pollution, including hazardous materials contamination and urban runoff.

Action NR.5.3.4 - Future land uses that are anticipated to utilize hazardous materials or waste shall be required to provide adequate containment facilities to ensure that surface water and groundwater resources are protected from accidental releases. This shall include double containment, levees to contain spills, and monitoring wells for underground storage tanks, as required by local, state, and federal standards. Future land uses that include on-site storage of hazardous materials and waste comply with all applicable local, state and federal regulations, including those regulating the use, storage, handling and disposal of hazardous materials.

Policy NR.5.4 - Prevent contamination of the groundwater table and surface water, and remedy existing contamination to the extent practicable.

Action NR.5.4.2 - Require clean-up of contaminated ground and surface water by current and/or past owners or polluters.

Policy NR.5.8 - The City shall require groundwater impact evaluations be conducted for the Grant Line West, Westborough, Aerojet, Glenborough, Mather and Jackson Planning Areas to determine whether urbanization of these areas would adversely impact groundwater remediation activities associated with Mather and Aerojet prior to the approval of large-scale development. Should an adverse impact be determined, a mitigation program shall be developed in consultation with applicable local, state, and federal agencies to ensure remediation activities are not impacted. This may include the provision of land areas for groundwater remediation facilities, installation/extension of necessary infrastructure, or other appropriate measures.

## **3.10.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES**

The section provides a discussion devoted largely to analysis of the direct and indirect environmental impacts of the alternatives. Historic uses and surreptitious disposal practices in the area of analysis may have resulted in soil and possibly groundwater contamination. Additionally, hazardous materials will be used during implementation of the alternatives. The management of hazardous materials in construction practices may result in environmental releases if improperly managed. Implementation of any of the

alternatives could result in exposure to hazardous waste for both construction workers and future residents.

#### 3.10.4.1 THRESHOLDS OF SIGNIFICANCE

The alternatives are evaluated for impacts related to HTRW. The thresholds for determining the significance of impacts for this analysis are based on the potential worker and future residential exposure to HTRW. The thresholds encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. Under NEPA, significance may be adverse or beneficial (40 CFR §1508.27). The impacts from the alternatives under consideration were determined to be significant if either of the following criteria is met:

- Construction workers or residents are exposed to hazardous waste from existing soil and groundwater contamination; or,
- Construction workers or residents are exposed to hazardous waste during construction activities or normal uses of their properties.

#### 3.10.4.2 ANALYSIS METHODOLOGY

Effects associated with hazardous, toxic and radioactive waste that could expose people as a result of project construction and operational activities were evaluated qualitatively based on expected construction practices; materials, locations, nearby activities, and duration of project construction and related activities; and a review of published literature including maps, books, and journal articles.

#### 3.10.4.3 IMPACT ANALYSIS

**IMPACT3.10-1 - Potential for construction workers and residents exposure to hazardous materials in soil from historic uses of the project site.** *Project implementation may expose people to hazardous materials because the soil may have been contaminated with hazardous materials through historic agricultural usage.*

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative** – Since the 1950s, the predominant historical uses of the Sunridge Specific Plan Area have consisted of fallowing agricultural land, dry farming, and natural grass grazing land since the 1950s. These agricultural uses typically require little to no application of environmentally persistent pesticides. In 1991, soil samples were taken from the olive orchard for laboratory analysis and organic and metal contaminants were detected. The soil samples detected only dichlorodiphenyldichloroethylene, polychlorinated biphenyls, and inorganic lead below the regulatory health risk guidelines. According to the 1997 investigation, the use of potential persistent pesticides are uncommon for olive orchards. The orchard in question has been out of production for about 20 to 30 years. Since the time of the Preliminary Phase I PSA, there has been no change in the environmental conditions from agricultural usage. Because of the minimal levels of contaminants detected in the soil, and low probability of pesticides used on olive orchards, there is minimal potential for exposure to hazardous waste or persistent pesticides from soil at the area of analysis.

The potential for exposure to soil contaminants for both alternatives would therefore be minimal and is considered a **less than significant impact** to construction workers and future residents.

**Mitigation Measure 3.10-1: No Mitigation Required.**

**IMPACT3.10-2 - Potential for future resident exposure to groundwater contaminants from existing water wells in the area.** *Regional groundwater contamination exists that may expose future residents to contaminated groundwater through abandoned wells in the area of analysis.*

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative** – The IRCTS groundwater plume is in close proximity to the area of analysis. This plume may in the future result in groundwater contaminants beneath the area of analysis. The domestic water supply proposed for the area of analysis would not use groundwater from the area of analysis or from contaminant plumes and would not pose a threat to future residents. Consequently, direct contact via domestic water supplied to the area of analysis is not a concern. However, abandoned wells (permanently discontinued use of wells) were visually observed within the area of analysis and have not been destroyed. Unless the wells are destroyed properly, these abandoned wells expose future residents to groundwater contaminants. The potential for future residential exposure to groundwater contaminants for both action alternatives would therefore exist and be considered a **less than significant impact with mitigation** to future residents.

**Mitigation Measure 3.10-2: Well Destruction.**

The project applicants would destroy abandoned wells in accordance with the Sacramento County well destruction standards. These procedures are established to prevent a direct conduit for contaminants to enter the groundwater. As such, the well destruction process would also prevent future resident exposure to the contaminated groundwater.

**IMPACT3.10-3 - Potential construction worker and residential exposure to hazardous waste from illegal disposal practices.** *Hazardous materials may be within the area of analysis resulting from illegal waste disposal practices.*

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative** - Illegal disposal practices were observed during the Preliminary Phase I PSA. The household wastes and debris disposed of may have contained household hazardous wastes. Household hazardous wastes are unwanted household products commonly used in homes, and their illegal disposal would result in a short-term threat to the construction worker and a long-term threat to future residents. The potential for future residential exposure to household hazardous waste exists and would be considered a **less than significant impact with mitigation** to future residents.

**Mitigation Measure 3.10-3: Debris Removal.**

The project applicants would remove all debris, trash, rubble, refuse and abandoned, discarded and/or out-of-service items within the area of analysis from the affected properties and dispose of them in a permitted landfill, Sacramento County household hazardous waste center, or recycled off-site as appropriate.

**IMPACT3.10-4 - Potential construction worker and residential exposure to hazardous wastes from demolition and construction.** *Hazardous wastes may be encountered when existing buildings are demolished or if construction wastes are improperly disposed of.*

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative** - The Phase I PSA observations noted that some of the rural homes in the area of analysis were constructed prior to the 1960s. Regulated asbestos-containing material contains friable asbestos that can be reduced to powder by hand pressure when dry. Because asbestos was not banned until 1978, there is a potential that asbestos-

containing materials are in the existing buildings. Friable asbestos fibers released into the air may become inhaled and pose a threat to human health.

Additionally, construction projects commonly generate waste from the use of petroleum products, asphalt products, concrete curing compounds, pesticides, acids, paints, stains, solvents, wood preservatives, roofing tar, and other hazardous materials. Waste hazardous materials from demolition and development may be a short-term threat to the construction worker and a long-term threat to future residents if improperly contained and disposed on site. The potential for future residential exposure to existing demolition and construction contaminants would exist and be considered a **potentially significant impact** to future residents.

#### Mitigation Measure 3.10-4: Implement Hazardous Waste Best Management Practices.

The project applicants would take care to prevent creating friable asbestos during the demolition of existing buildings. Hazardous wastes generated during construction would be managed using best management practices. Hazardous wastes would be contained, labeled, and disposed at an off-site permitted facility in accordance with local, state, and Federal hazardous waste requirements to prevent exposure to construction workers and future residents. The potential for future residential exposure to household hazardous waste would exist but would be considered a **less than significant impact with mitigation** to future residents.

## **3.11 PUBLIC HEALTH AND SAFETY**

This section describes the affected environment and regulatory framework of public health and safety as it relates to the project. This section also analyzes environmental consequences and the effects of mitigation on those consequences.

### **3.11.1 AREA OF ANALYSIS**

The area of analysis for public health and safety is the Sunridge Properties.

### **3.11.2 AFFECTED ENVIRONMENT**

This section describes the conditions in the area of analysis vicinity related to issues of public safety including potential flooding, wildfires, proximity to Mather Field, handling and transport of hazardous materials, construction safety hazards, and mosquito-borne diseases.

#### **3.11.2.1 AFFECTED ENVIRONMENT**

##### **FLOOD ZONES**

The City of Rancho Cordova is bounded to the northwest by the American River and to the southeast by the 100-year floodplain of the Cosumnes River. Both rivers are considered potential flood hazards (City of Rancho Cordova, 2006). The area of analysis is outside of the 100-year floodplain. The nearest natural surface water drainage, Morrison Creek, consists mostly of natural channels or small ditches and swales that may be inundated during large storm events.

##### **WILDFIRES**

Much of the area of analysis is currently undeveloped with agricultural lands and grassland habitat. For the area of analysis, the wildfire hazard is considered moderate, according to the California Fire Alliance Fire Planning and Mapping website (California Fire Alliance, 2009). The risk of wildfires in the area of analysis would be higher during the dry season, and the hazard is of most concern where open space meets residential development. Wildfires occur regularly in grassland habitats.

##### **MATHER FIELD**

Mather Field, the former Mather Air Force Base, is a full-service airport with 24-hour air traffic control and an 11,300 foot runway. It is due west of the Sunridge Properties. The runway for Mather Field lies in a southwest to northeast direction. The project site is not within the direct landing and take-off patterns for the airport; therefore, they are not at risk from potential, but unlikely, aircraft crashes related to landing patterns for the airport.

##### **ON-SITE HAZARDOUS MATERIALS**

Currently there is no on-site storage of hazardous materials. However, implementation of the alternatives would involve the storage, use, and transport of hazardous materials at the project site during construction activities. Additional analysis of hazardous material and hazardous waste is presented in Section 3.4 HTRW.

## CONSTRUCTION SAFETY HAZARDS

Currently there is no construction within the project site. Project-related construction activities could result in potential safety hazards to construction workers.

## HUMAN HEALTH HAZARDS ASSOCIATED WITH MOSQUITO-BORNE DISEASES

Construction workers or future residents could be exposed to an increased risk of mosquito-borne diseases. The mosquito population in the Sacramento Valley is most active in the spring and early summer. The female mosquito needs blood in order to produce eggs. Hosts that can supply blood include reptiles, amphibians, mammals, birds, and humans. All mosquito species are potential vectors of organisms that can cause disease to pets, domestic animals, wildlife, or humans.

The project sites are located within the Sacramento-Yolo Mosquito and Vector Control District (SYMVCD). The District employs technicians certified in pesticide usage and mosquito identification by the Vector-Borne Disease Section of the California Department of Public Health (CDPH). The SYMVCD solves mosquito problems using Integrated Pest Management techniques, which include surveillance and monitoring of mosquito breeding sources, reduction of mosquito breeding sites, community outreach and public education, and the use of chemical, microbial, and biological methods to control both mosquito larvae and adult mosquitoes (SYMVCD, 2009). The SYMVCD's mosquito control program is contained in the SYMVCD Mosquito and Mosquito-Borne Disease Management Plan (adopted 2003, amended 2005) (SYMVCD, 2009).

The SYMVCD applies chemicals at extremely low rates, as recommended by the U.S. Environmental Protection Agency (USEPA). Pesticides in use include biological controls, such as *Bacillus* sp.; methoprene, an insect growth regulator; and pyrethrins and pyrethroids, all of which have been evaluated and are regulated by USEPA. Biological larvicides include *Bacillus thuringiensis israelensis* (*Bti*) and *Bacillus sphaericus* (*B. sphaericus*), which are naturally occurring bacteria. The USEPA affirms that the microbial pesticides *Bti* and *B. sphaericus* have undergone extensive testing before registration. They are essentially nontoxic to humans, so there are no concerns about human health effects with *Bti* or *B. sphaericus* when they are used according to label directions. The USEPA testing also indicates that there are no risks to wildlife, nontarget species, or the environment associated with these microbial pesticides, when used according to label directions (USEPA, 2006a). Only mosquitoes, black flies, and certain midges are susceptible to these bacteria. Other aquatic invertebrates and nontarget insects are unaffected. Larvicidal oils and monomolecular films are used to drown the mosquito larvae in their later aquatic stages, when they are not feeding, by forming a thin coating on the surface of the water. For example, methoprene is an insect growth regulator that is target-specific and is designed not to harm mammals, waterfowl, or beneficial predatory insects.

The USEPA also indicates that pyrethroids can be used for public health mosquito control programs without posing unreasonable risks to human health when applied according to the label. They also do not pose unreasonable risks to wildlife or the environment, although pyrethroids are toxic to fish and to bees. For that reason, USEPA has established specific precautions on the label to reduce such risks, including restrictions that prohibit the direct application of products to open water or within 100 feet of lakes, streams, rivers, or bays (USEPA, 2006b). The District uses pyrethrins and pyrethroids for its adult mosquito fogging program in and around populated areas. Pyrethrins are insecticides that are derived from an extract of chrysanthemum flowers, and pyrethroids are synthetic forms of pyrethrins. These are generally applied by truck-mounted or handheld foggers. These materials used to control both adult and larval mosquitoes are registered with USEPA, which evaluates safe use by assessing potential human health and environmental effects associated with use of each product (USEPA, 2006c).

### **3.11.3 REGULATORY FRAMEWORK**

#### **3.11.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS**

##### **HAZARDOUS MATERIALS HANDLING**

At the federal level, the principal agency regulating the generation, transport, and disposal of hazardous substances is USEPA, under the authority of the Resource Conservation and Recovery Act (RCRA). The RCRA established an all-encompassing federal regulatory program for hazardous substances that is administered by USEPA. Under the RCRA, USEPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances. The RCRA was amended in 1984 by the Hazardous and Solid Waste Amendments of 1984 (HSWA), which specifically prohibits the use of certain techniques for the disposal of various hazardous substances. The Federal Emergency Planning and Community Right-to-Know Act of 1986 imposed hazardous materials planning requirements to help protect local communities in the event of accidental release. USEPA has delegated much of the RCRA requirements to the California Department of Toxic Substances Control (DTSC).

##### **WORKER SAFETY REQUIREMENTS**

The U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) is responsible at the Federal level for ensuring worker safety. The OSHA sets Federal standards for implementation of workplace training, exposure limits, and safety procedures for the handling of hazardous substances (as well as other hazards). The agency also establishes criteria by which each state can implement its own health and safety program.

#### **3.11.3.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS**

##### **HAZARDOUS MATERIALS HANDLING**

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires preparation of Hazardous Materials Business Plans and disclosure of hazardous-materials inventories. A Business Plan includes an inventory of hazardous materials handled, facility floor plans showing where hazardous materials are stored, an emergency response plan, and provisions for employee training in safety and emergency response procedures (California Health and Safety Code, Division 20, Chapter 6.95, Article 1). Statewide, DTSC has primary regulatory responsibility for management of hazardous materials, with delegation of authority to local jurisdictions that enter into agreements with the state. Local agencies, including the County Department of Environmental Management and the City, administer these laws and regulations.

##### **WORKER SAFETY REQUIREMENTS**

The California Occupational Safety and Health Administration (Cal-OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations within California. The Cal-OSHA regulations pertaining to the use of hazardous materials in the workplace, as detailed in CCR Title 8, include requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and preparation of emergency action and fire prevention plans. The agency enforces hazard communication program regulations that contain training and information requirements, including procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees at hazardous-waste sites. The



hazard communication program requires that Material Safety Data Sheets be available to employees and that employee information and training programs be documented.

## **EMERGENCY RESPONSE TO HAZARDOUS MATERIALS INCIDENTS**

California has developed an Emergency Response Plan to coordinate emergency services provided by Federal, state, and local governments and private agencies. Response to hazardous-materials incidents is one part of this plan. The plan is managed by the Governor's Office of Emergency Services (OES), which coordinates the responses of other agencies including the California Environmental Protection Agency, California Highway Patrol, California Department of Fish and Game, Central Valley RWQCB, County Sheriff's Department, Rancho Cordova Police Department, and Sacramento Metropolitan Fire District (SMFD).

## **HAZARDOUS MATERIALS TRANSPORT**

The U.S. Department of Transportation regulates transportation of hazardous materials between states. State agencies with primary responsibility for enforcing Federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of Transportation. Together, these agencies determine container types used and license hazardous-materials haulers for transportation on public roads.

### **3.11.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES**

The County is responsible for enforcing the state regulations that govern hazardous-substance generators, hazardous-substance storage, and underground storage tanks (including inspections, enforcement, and removals).

## **RANCHO CORDOVA GENERAL PLAN SAFETY ELEMENT**

The Safety Element addresses present and anticipated concerns about the well being of City residents, employees, and visitors. The goals, policies, and actions identify methods to minimize the potential risk of death, injuries, property damage, and economic losses resulting from fires, floods, earthquakes, landslides, and other hazards. The Element also addresses safety and hazards related to airport land use.

## **FIRE CODES AND GUIDELINES**

The SMFD requires the availability of sufficient water flows and pressure for fire protection. The district requires fire sprinklers to be installed in all new commercial construction that exceeds 3,600 square feet and some residential properties exceeding 2,999 square feet. In addition, all signals installed on the project site must include traffic control devices that allow the district to activate the light, and control the flow of traffic, in order to maintain response times. Fire lanes must be installed and dedicated prior to project approval (Rancho Cordova, 2006).

### **3.11.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES**

#### **3.11.4.1 THRESHOLDS OF SIGNIFICANCE**

A public health hazard and safety impact is considered significant if implementation of the proposed project and alternatives under consideration would do any of the following:

- Create a public-health hazard through the use, production, generation, release, or disposal of materials that pose a hazard to human, animal, or plant populations;
- Expose construction workers to hazardous materials that would create health risks during construction; or create a health or potential health hazard;
- Be located on a hazardous materials site that is included on the list generated by Government Code §65962.5 (Cortese List);
- Create a safety hazard for people living or working in the project area as a result of a project located within an airport land use plan or within 2 miles of a public airport, or in the vicinity of a private airstrip; or
- Expose people to a significant risk of loss, injury, or death from exposure to wildland fires.

### 3.11.4.2 ANALYSIS METHODOLOGY

The impact assessment is based on a qualitative evaluation of the alternatives with the impact assessment criteria.

### 3.11.4.3 IMPACT ANALYSIS

IMPACT3.11-1 - Create a public health hazard through the use, production, generation, release, or disposal of materials that pose a hazard to human, animal, or plant populations. *Implementation of the alternatives would involve the storage, use, and transport of hazardous materials at the project site during construction activities.*

**Proposed Project Alternative and Reduced Footprint Alternative** - Development of the project site for residential uses would involve the storage, use, and transport of hazardous materials (e.g., asphalt, fuel, lubricants, and solvents) during construction activities. Direct impacts include those that could result from the use and transport of hazardous materials during construction activities. Transportation of hazardous materials on area roadways is regulated by the California Highway Patrol and the California Department of Transportation, and use of these materials is regulated by DTSC. The project applicant(s), builders, contractors, and others would be required to use, store, and transport hazardous materials in compliance with federal, state, and local regulations during project construction. Because the project would implement and comply with existing hazardous materials regulations, it is unlikely that impacts related to creation of significant hazards to the public through routine transport, use, and disposal of hazardous materials would occur with project implementation. This **direct** impact is considered **less than significant** and **no indirect** impacts would occur for both alternatives.

**No Action Alternative** – Fewer houses would be built under the No Action Alternative, but hazardous materials would be used in the same manner as under the Proposed Project Alternative and Reduced Footprint Alternative and thus this **direct** impact is also considered **less than significant**. **No indirect** impacts would occur.

Mitigation Measure 3.11-1: No mitigation is required.

**IMPACT3.11-2 - Potential safety hazards from construction activities.** *Ongoing project related construction activities could result in potential safety hazards to construction workers.*

**Proposed Project Alternative and Reduced Footprint Alternative** - Construction would require grading of the project sites and construction of new homes, utility relocations and installations, and roadway construction. Fenced construction staging areas would be established during each phase of project development and would be used for storage of vehicles, equipment, materials, fuels, lubricants, and solvents.

Even with the planned precautions listed above, construction activities could result in hazards to workers during construction. Temporary potential safety hazards associated with construction activities would be considered a **significant, direct impact** under both alternatives. **No indirect** impacts would occur.

**No Action Alternative** - Fewer houses would be built under the No Action Alternative, but construction activities could still result in hazards to workers during construction. Temporary potential safety hazards associated with construction activities would be considered a **significant, direct impact**. **No indirect** impacts would occur.

**Mitigation Measure 3.11-2:** The construction contractors would be required to follow all Cal-OSHA safety requirements related to work practices and handling of hazardous materials. Adherence to the OSHA regulations would reduce safety hazard incidents.

**IMPACT3.11-3 - Human health hazards associated with mosquito-borne diseases.** *Construction workers and/or future residents could be exposed to an increased risk of mosquito-borne diseases.*

**Proposed Project Alternative and Reduced Footprint Alternative** - While the project sites are located within the SYMVCD and subject to district regulations, the City also requires that wetland mosquito management guidelines be incorporated into the design of water retention structures, drainage ditches, and swales to reduce the potential for mosquito-borne disease transmission. Wetland features that would remain on the project sites currently do not have mosquito management guidelines. Although the mosquito controls applied by the SYMVCD are considered to be appropriate and safe for human exposure, the project could result in a new risk of adverse health effects associated with vector-borne diseases or hazards associated with vector control, because new water-related sources of mosquito breeding habitat would be created, and the project currently does not have wetland mosquito management guidelines. Therefore, implementation of the Proposed Alternative or the Reduced Footprint Alternative would have a **potentially significant, direct** impact on human health related to mosquito-borne diseases. **No indirect** impacts would occur.

**No Action Alternative** - Under the No Action Alternative, fewer houses would be built than under the Proposed Project Alternative and Reduced Footprint Alternative, however, construction workers and/or future residents could be exposed to a greater increased risk of mosquito-borne diseases since fewer wetlands would be filled within the vicinity of the houses under this alternative. Therefore, implementation of the No Action Alternative would also have a **potential significant, direct** impact on human health related to mosquito-borne diseases. **No indirect** impacts would occur.

**Mitigation Measure 3.11-3: Mosquito Control:** Adherence to SYMVCD rules for vector control would minimize any risks due to vector borne diseases.

IMPACT3.11-4 - Located on a hazardous materials site that is included on the list generated by Government Code §65962.5 (Cortese List).

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative - The project site is not located within a hazardous materials area as listed by this government code. Therefore, there is **no direct or indirect impact** based on this criterion.

Mitigation Measure 3.11-4: No mitigation is required.

IMPACT3.11-5 - Create a safety hazard for people living or working at the project sites as a result of a project located within an airport land use plan, located within 2 miles of a public airport, or located in the vicinity of a private airstrip.

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative -The project site is not located within the direct take-off or landing pattern of aircraft associated with Mather Field. Therefore, there is not an aircraft safety risk and **no direct or indirect impact** based on this criterion.

Mitigation Measure 3.11-5: No mitigation is required.

IMPACT3.11-6 - Expose people to a significance risk of loss, injury, or death from exposure to wildland fires.

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative - The conversion of the land from grassland to urban landscape coupled with the widening of roadways acting as firebreaks would significantly reduce any potential for wildland fires. Therefore, there would be **no direct or indirect impacts** based on this criterion.

Mitigation Measure 3.11-6: No mitigation is required.

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## **3.12 ENVIRONMENTAL JUSTICE**

This section addresses the potential for environmental justice concerns that could result from disproportionately high and adverse human health or environmental effects on minority or low-income populations from the project alternatives. According to the Federal Council on Environmental Quality (CEQ) guidelines for environmental justice analyses, minority populations should be identified where the minority population of the affected area exceeds 50%, or the minority population percentage of the affected area is meaningfully greater than the minority population percentage of the general population. Low income populations should be identified based on poverty thresholds defined by the U.S. Census Bureau (CEQ, 1997).

Environmental justice is defined by the USEPA Office of Environmental Justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.” Fair treatment means that “no group of people, including racial, ethnic, or socioeconomic group shall bear a disproportionate share of negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.” Analysis of effects of projects on environmental justice is required by the National Environmental Policy Act (NEPA).

### **3.12.1 AREA OF ANALYSIS**

The analysis area for environmental justice includes Sacramento County and the City of Rancho Cordova. For the purposes of an environmental justice screening, race, ethnic origin, and poverty status were obtained for all of the City; part of the County of Sacramento; and all or part of the unincorporated communities of Carmichael, Fair Oaks, Gold River, La Riviera, Rosemont, Arden-Arcade, and North Highlands. These cities and unincorporated community boundaries represent a 6-mile radius surrounding the project sites, which is the area that is appropriate for consideration pursuant to USEPA Guidelines.

### **3.12.2 AFFECTED ENVIRONMENT**

#### **3.12.2.1 SACRAMENTO COUNTY**

From 2005-2007, Sacramento County had a total population of 1.4 million. Approximately 19% of the County’s population was Hispanic or Latino, 14% was Asian, 11% was black or African-American, and 64% of the population was white (Census Bureau, 2008a). Table 3.12-1 presents these demographics.

<b>Table 3.12-1 Sacramento County Demographics, 2005-2007</b>		
<b>Demographics</b>	<b>Number</b>	<b>Percent</b>
Total Population	1,373,773	100.0%
Hispanic or Latino (of any race)	263,610	19.2%
Not Hispanic or Latino	1,110,163	80.8%
White	842,858	64.1%
Black or African American	138,501	10.5%
American Indian or Alaska Native	12,680	1.0%
Asian	184,209	14.0%
Native Hawaiian or other Pacific Islander	10,731	0.8%
Some other Race	126,769	9.6%
Two or more Races	58,025	4.2%
Source: U.S. Census Bureau American Community Survey, 2008a		

Approximately 30% of households earned less than \$35,000 from 2005-2007. Median household income was \$55,822 and per capita income was \$26,405. Approximately 9% of families and 13% of individuals were below the poverty level (U.S. Census Bureau, 2008a). The U.S. Census Bureau defines poverty thresholds (levels of income) for people of various family, individual, and age characteristics. In 2006, the average poverty threshold for an individual was an annual income of or below \$10,294 and \$16,079 for a family of three. Table 3.12-2 provides the income and poverty status data for Sacramento County.

<b>Table 3.12-2 Sacramento County Income and Poverty Status</b>		
<b>Income and Poverty Status (2007)</b>	<b>Number</b>	<b>Percent</b>
Households	500,777	100.0%
Less than \$10,000	25,682	5.1%
\$10,000 to \$14,999	26,754	5.3%
\$15,000 to \$24,999	49,756	9.9%
\$25,000 to \$34,999	49,914	10.0%
\$35,000 to \$49,999	72,862	14.5%
\$50,000 to \$74,999	97,351	19.4%
\$75,000 to \$99,999	70,702	14.1%
\$100,000 to \$149,000	69,619	13.9%
\$150,000 to \$199,999	22,741	4.5%
Greater than \$200,000	15,396	3.1%
Median Household Income (\$)	\$55,822	--
Median Family Income (\$)	\$64,461	--
Per Capita Income (\$)	\$26,405	--
Poverty Status – Families	--	9.3%
Poverty Status – Individuals	--	12.5%
Source: U.S. Census Bureau American Community Survey, 2008a		

### 3.12.2.2 CITY OF RANCHO CORDOVA

From 2005-2007, the City's population was 58,000. About 19% of the population was Hispanic, 11% was Asian, 10% was black or African-American, and 68% was white (U.S. Census Bureau, 2008b). Table 3.12-3 provides the demographics for the City.

<b>Table 3.12-3 Rancho Cordova Demographics, 2005-2007</b>		
<b>Demographics</b>	<b>Number</b>	<b>Percent</b>
Total Population	57,799	100%
Hispanic or Latino (of any race)	11,144	19.3%
Not Hispanic or Latino	46,655	80.7%
<b>Demographics</b>	<b>Number</b>	<b>Percent</b>
White	37,817	68.20%
Black or African American	5,659	10.20%
American Indian or Alaska Native	680	1.20%
Asian	6,027	10.90%
Native Hawaiian or other Pacific Islander	87	0.20%
Some other Race	5,204	9.40%
Two or more Races	2,325	4.00%
Source: U.S. Census Bureau American Community Survey, 2008b		

Approximately 38% of households earned less than \$35,000 in 2007. Median household income was \$45,472 and per capita income was \$22,707. Approximately 13% of families and 17% of individuals were below the poverty level (U.S. Census Bureau, 2008b). Table 3.12-4 provides the income and poverty status for the City.

<b>Table 3.12-4 Rancho Cordova Income and Poverty Status</b>		
<b>Income and Poverty Status (2007)</b>	<b>Number</b>	<b>Percent</b>
Households	21,801	100%
Less than \$10,000	1,152	5.3%
\$10,000 to \$14,999	1,237	5.7%
\$15,000 to \$24,999	2,941	13.5%
\$25,000 to \$34,999	3,030	13.9%
\$35,000 to \$49,999	3,370	15.5%
\$50,000 to \$74,999	3,969	18.2%
\$75,000 to \$99,999	2,553	11.7%
\$100,000 to \$149,000	2,639	12.1%
\$150,000 to \$199,999	673	3.1%
Greater than \$200,000	237	1.1%
Median Household Income (\$)	\$45,472	--
Median Family Income (\$)	\$53,776	--
Per Capita Income (\$)	\$22,707	--
Poverty Status – Families	--	13.4%
Poverty Status – Individuals	--	17.2%
Source: U.S. Census Bureau American Community Survey, 2008b		

### 3.12.3 REGULATORY FRAMEWORK

#### 3.12.3.1 FEDERAL LAWS, REGULATIONS, POLICIES, AND PLANS

The 1994 Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires all Federal agencies to conduct “programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including



populations) to discrimination under, such programs, policies, and activities, because of their race, color, or national origin.” Section 1-101 of the Order requires Federal agencies to identify and address “disproportionately high and adverse human health or environmental effects” of programs on minority and low-income populations (Executive Order, 1994).

The purpose of Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority and Low Income Populations” (1994), is to identify and address the disproportionate placement of adverse environmental, economic, social, or health impacts from federal actions and policies on minority and/or low-income communities. This order requires that planners take into account impacts on minority or low-income populations when they prepare environmental and socioeconomic analyses of projects or programs that are proposed, funded, or licensed by federal agencies.

Executive Order 12898, signed by President Clinton on February 11, 1994, requires the following:

*To the greatest extent practicable and permitted by law...each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. (Section 1-101)*

*Each Federal agency shall conduct its programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under, such programs, policies, and activities, because of their race, color, or national origin. (Section 2-2)*

*Each Federal agency shall work to ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and readily accessible to the public. (Section 5-5[c]).*

In addition, the presidential memorandum accompanying the Executive Order states that “each Federal Agency shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by the NEPA [National Environmental Policy Act] of 1969.”

Two documents provide some measure of guidance to agencies required to implement the Executive Order. The first is Environmental Justice Guidance under the National Environmental Policy Act, published by the CEQ. The second document, Final Guidance for Incorporating Environmental Justice Concerns (published in USEPA’s NEPA Compliance Analysis), serves as a guide for incorporating environmental justice goals into preparation of environmental impact statements under NEPA. These documents provide specific guidelines for determining whether there are any environmental justice issues associated with a proposed federal project.

### **3.12.3.2 STATE LAWS, REGULATIONS, POLICIES, AND PLANS**

California law defines environmental justice as the “fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies,” in Government Code §65040.12(e). Government Code §65040.12(a) designates the Governor’s Office of Planning and Research (OPR) as the coordinating agency in state government for environmental justice programs and requires OPR to develop guidelines for incorporating environmental justice into general plans.

There are no state plans, policies, regulations, or laws related to environmental justice that are applicable to the proposed project or alternatives under consideration. However, Senate Bill (SB) 115 (Solis, Chapter 690, Statutes of 1999) defined environmental justice in statute and established the OPR as the coordinating agency for state environmental justice programs (Government Code §65040.12). The senate bill further required the California Environmental Protection Agency (Cal-EPA) to develop a model environmental justice mission statement for boards, departments, and offices within the agency by January 1, 2001 (Public Resources Code Sections 72000–72001).

In 2000, SB 89 (Escutia, Chapter 728, Statutes of 2000) was signed, which complemented SB 115 by requiring the creation of an environmental justice working group and an advisory group to assist Cal-EPA in developing an intra-agency environmental justice strategy (Public Resources Code Sections 72002–72003). Senate Bill 828 (Alarcón, Chapter 765, Statutes of 2001) added and modified due dates for the development of Cal-EPA’s intra-agency environmental justice strategy and required each board, department, and office within Cal-EPA to identify and address, no later than January 1, 2004, any gaps in its existing programs, policies, and activities that may impede environmental justice (Public Resources Code Sections 71114–71115).

Assembly Bill (AB) 1553 (Keeley, Chapter 762, Statutes of 2001) required OPR to incorporate environmental justice considerations in the General Plan Guidelines. The bill specified that the guidelines should propose methods for local governments to address the following:

- Planning for the equitable distribution of new public facilities and services that increase and enhance community quality of life,
- Providing for the location of industrial facilities and uses that pose a significant hazard to human health and safety in a manner that seeks to avoid over-concentrating these uses in proximity to schools or residential dwellings,
- Providing for the location of new schools and residential dwellings in a manner that avoids proximity to industrial facilities and uses that pose a significant hazard to human health and safety, and
- Promoting more livable communities by expanding opportunities for transit-oriented development.

Although environmental justice is not a mandatory topic in the general plan, OPR is required to provide guidance to cities and counties for integrating environmental justice into their general plans (Government Code §65040.12(c)) (Governor’s Office of Planning and Research 2003). The 2003 edition of the General Plan Guidelines included the contents required by AB 1553 (see pp. 8, 12, 20–27, 40, 114, 142, 144, and 260 of the revised Guidelines).

### **3.12.3.3 REGIONAL AND LOCAL LAWS, REGULATIONS, POLICIES, AND PLANS**

There are no regional or local plans, policies, regulations, or laws related to environmental justice that are applicable to the proposed project or alternatives under consideration.

### **3.12.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES**

This section provides analysis on environmental consequences associated with the proposed project and project alternatives as well as the effects of mitigation on the identified consequences.

#### 3.12.4.1 THRESHOLDS OF SIGNIFICANCE

To prove a violation of federal environmental justice principles, the government must demonstrate that the proposed project or alternatives under consideration would cause impacts that are “disproportionately high and adverse,” either directly, indirectly, or cumulatively. To make a finding that disproportionately high and adverse effects would likely fall on a minority or low-income population, three conditions must be met simultaneously: (1) there must be a minority or low-income population in the impact zone; (2) a high and adverse impact must exist; and (3) the impact must be disproportionately high and adverse on the minority or low-income population.

#### 3.12.4.2 ANALYSIS METHODOLOGY

According to CEQ and USEPA guidelines established to assist federal and state agencies for developing strategies to examine this circumstance, the first step in conducting an environmental justice analysis is to define minority and low-income populations. Based on these guidelines, a minority population is present in a project analysis area if: (a) the minority population of the affected area exceeds 50%, or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. By the same rule, a low-income population exists if the project analysis area is composed of 50% or more people living below the poverty threshold, as defined by the U.S. Census Bureau, or is significantly greater than the poverty percentage of the general population or other appropriate unit of geographic analysis. The second step of an environmental justice analysis requires a finding of a high and adverse impact. The CEQ guidance indicates that when determining whether the effects are high and adverse, agencies are to consider whether the risks or rates of impact “are significant (as employed by NEPA) or above generally accepted norms.” The final step requires a finding that the impact on the minority or low-income population be disproportionately high and adverse. Although none of the published guidelines define the term “disproportionately high and adverse”, CEQ includes a qualitative definition stating that an effect is disproportionate if it appreciably exceeds the risk or rate to the general population.

As defined in EPA’s Final Guidance for Incorporating Environmental Justice Concerns, for the purposes of an environmental justice screening, the area of analysis is an approximately 6-mile radius surrounding the project site. To use a comparable distance in this analysis, data from the U.S. Census Bureau, 2000 Census, for race, ethnic origin, and poverty status were obtained. Census tract data for 2008 were unavailable, so Census 2000 data were used. All census tracts touching on the 6-mile radius were included in the analysis.

#### 3.12.4.3 IMPACT ANALYSIS

**IMPACT3.12-1 - Potential effects on low-income populations.** *Project implementation could adversely affect low-income populations.*

**Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative** - None of the three alternatives would result in environmental impacts that would disproportionately adversely effect low-income populations. According to the year 2000 census data (US Census Bureau 2000), there is one tract out of a total of 59 with a poverty population greater than 50% within 6 miles of the project site. Of the 59 census tracts, 21 have poverty populations greater than 10%. Seven have poverty populations between 20 and 30% of the tract population. Tract 8800 has the highest poverty rate, with 85.8% of the population below the poverty level in the year 2000. The boundary of Tract 8800 corresponds to Mather Field (formerly Mather AFB) and is located about 0.75 miles west of the project sites. Since the closure of the base in 1995, this area has undergone substantial redevelopment, including construction of 1,300 new

homes from 1999 to 2004, modernization and improvement of streets and infrastructure, commercial development, and the continued use of Mather Airport for general aviation and air cargo. Data from Mather Field indicate that by the year 2000, approximately 2,600 new jobs had been generated by redevelopment activities, and economic development is expected to continue in the future. Poverty rates for Tract 8800 are expected to improve substantially from redevelopment activities. In addition, implementation of the project would not result in a disproportionate effect or directly influence Tract 8800 because of its distance from this area. Therefore, project implementation would not cause a disproportionately high and adverse impact on low-income populations. This would be a **less-than-significant, direct** impact for all three alternatives. **No indirect** impacts would occur.

Mitigation Measure 3.12-1: No mitigation measures are required.

IMPACT3.12-2 - Potential effects on minority populations. <i>Project implementation could affect minority communities.</i>
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Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative - None of the project alternatives would create a disproportionate placement of adverse environmental impacts on minority communities. Analyzing the data across the census tracts in aggregate, the minority population present in the project analysis area is less than 50%. The Caucasian population is approximately 74%. Minority (non-Caucasian) populations comprise 26.3% of the combined populations of the 2000 census tract data (US Census Bureau, 2000). Therefore, project implementation would not cause a disproportionately high and adverse impact on minority populations. This would be a **less-than-significant, direct** impact for the three alternatives. **No indirect** impacts would occur.

Mitigation Measure 3.12-2: No mitigation measures are required.

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### **3.13 VISUAL RESOURCES**

This section describes the affected environment, environmental consequences, and mitigation measures with respect to visual resources.

#### **3.13.1 AREA OF ANALYSIS**

The area of analysis is defined as the ground surface and any structures, plants or animals on the ground surface within the six Sunridge Properties, and the properties that border the project site.

#### **3.13.2 AFFECTED ENVIRONMENT**

The area of analysis has historically been used for dry land farming and grazing. The land is characterized by gently rolling terrain covered by annual grassland with scattered willow and cottonwood trees. Lower Morrison Creek and Upper Laguna Creek cross the sites from northeast to southwest. Vernal pools are present throughout. Major roadways lie along the perimeter of two sides of the area of analysis.

Land adjacent to the area of analysis is generally similar in terrain and uses, with the exception of large developments that have occurred primarily west of the area of analysis, specifically, northeast of Sunrise Boulevard and Kiefer Boulevard. Other nearby land use includes Blodgett Reservoir, which offers recreational fishing and hunting. A few industrial facilities are located within a few miles of the area of analysis. Noise, air quality, and odor issues related to the industrial facilities are described in the Section 3.4 Air Quality and Section 3.8 Noise.

Visual resources are the natural and artificial features of the landscape that can be seen and that contribute to the public's appreciative enjoyment of the environment. The impacts are generally defined in terms of a project's physical characteristics and potential visibility, and the extent to which the project's presence would change the perceived visual character and quality of the environment in which it would be located. Viewpoint 1 through Viewpoint 40 illustrate the locations and photographs of representative views of the area of analysis and bordering properties taken during a windshield survey conducted March 24, 2010.



Viewpoint 1 – Looking west toward Sunridge Village J from Canyonlands Drive: foreground includes the uncultivated farmland covered with non-native grasses and vegetation; background includes a housing development.



Viewpoint 2 – Looking southwest toward Sunridge Village J from Canyonlands Drive: foreground includes the uncultivated farmland covered with non-native grasses and vegetation; background includes non-native trees and shrubs.





Viewpoint 3 – Looking east toward Sunridge Village J from Jaegar Road: foreground includes uncultivated farmland and sewer manhole; background includes non-native trees and a housing development.



Viewpoint 4 – Looking west from Sunridge Village J: foreground includes uncultivated farmland covered with non-native grasses and vegetation; background includes a housing development.





Viewpoint 5 – Existing water pressure tank and water well pump at Sunridge Village J.



Viewpoint 6 – Existing concrete irrigation stand pipes and Fairbanks-Morse™ unidrive motor at Sunridge Village J; background is Sunridge Park development.



Viewpoint 7 – Looking south within Sunridge Village J: foreground includes uncultivated farmland and existing vernal pools; background includes existing housing developments.



Viewpoint 8 – Looking west toward Sunridge Village J from Borderlands Drive: foreground includes existing gravel road; background includes a large mound covered in grasses.





Viewpoint 9 – Looking north toward Sunridge Village J; foreground includes grasses and vernal pool; background includes non native trees.



Viewpoint 10 – Looking east toward Douglas 103 from Preserve Way; foreground and background include dirt mound covered in grasses.



Viewpoint 11 – Looking southeast toward Grantline 208 from Preserve Way: foreground includes grasses; background includes power lines and uncultivated farmland of Grantline 208.



Viewpoint 12 – Looking southeast toward Grantline 208 from Preserve Way: foreground includes vernal pools; background includes uncultivated farmland of Grantline 208.



Viewpoint 13 – Looking south toward Grantline 208 from Preserve Way: foreground includes naturally occurring wetlands; background includes power lines and a power plant.



Viewpoint 14 – Looking southeast toward Grantline 208 from Preserve Way: foreground includes naturally occurring wetlands; background includes power lines and a power plant.





Viewpoint 15 – Looking east toward Douglas 103 from Kibbie Lake Way: foreground includes uncultivated farmland of Douglas 103; background includes power lines and uncultivated farmland.



Viewpoint 16 – Looking southwest toward Douglas 103 from Douglas Road: foreground includes uncultivated farmland of Douglas 103; background includes housing development and uncultivated farmland.



Viewpoint 17 – Looking south toward Douglas 103 from Douglas Road: foreground includes uncultivated farmland of Douglas 103; background includes housing and uncultivated farmland.



Viewpoint 18 – Looking southwest toward Douglas 103 from Douglas Road: foreground includes uncultivated farmland of Douglas 103; background includes several trees on Grantline 108 and uncultivated farmland.



Viewpoint 19 – Looking north from Douglas Road at property adjacent to Douglas 103: foreground includes uncultivated farmland and a vernal pool; background includes pastureland with grazing cows.



Viewpoint 20 – Looking south from Douglas Road toward Douglas 103: foreground includes Wakita Creek; background includes uncultivated farmland with trees.





Viewpoint 21 – Looking north from Douglas Road at property adjacent to Douglas 103; foreground includes uncultivated farmland and Wakita Creek; background includes uncultivated farmland and Security Park.



Viewpoint 22 – Looking south toward Douglas 98 from Douglas Road; foreground includes uncultivated farmland of Douglas 98; background includes uncultivated farmland with trees.



Viewpoint 23 – Looking north from Douglas Road at property adjacent to Douglas 98: foreground includes uncultivated farmland with wetlands; background includes uncultivated farmland.



Viewpoint 24 – Looking south from Douglas Road toward Douglas 98; foreground includes uncultivated farmland with vernal pools of Douglas 98; background includes uncultivated farmland with trees.



Viewpoint 25 – Looking northeast from Douglas Road to property adjacent to Douglas 98; foreground includes uncultivated farmland with wetlands; background includes uncultivated farmland with trees.



Viewpoint 26 – Looking east from Grant Line Road to property adjacent to Douglas 98: foreground includes uncultivated farmland with wetlands; background includes uncultivated farmland with trees.



Viewpoint 27 – Looking east from Grant Line Road to property adjacent to Douglas 98: foreground includes uncultivated farmland with wetlands; background includes uncultivated farmland.



Viewpoint 28 – Looking east from Grant Line Road to property adjacent to Douglas 98: foreground includes uncultivated farmland; background includes pastureland with grazing cows.





Viewpoint 29 – Looking west toward Douglas 98 from Grant Line Road: foreground includes uncultivated farmland of Douglas 98; background includes uncultivated farmland with trees.



Viewpoint 30 – Looking west toward Grantline 208 from Grant Line Road; foreground includes uncultivated farmland with wetlands of Grantline 208; background includes uncultivated farmland with trees.



Viewpoint 31 – Looking southwest toward Grantline 208 from Grant Line Road; foreground includes uncultivated farmland with wetlands of Grantline 208; background includes uncultivated farmland and existing farmhouse on Arista del Sol.



Viewpoint 32 – Looking southeast from Grant Line Road to property adjacent to Grantline 208; foreground includes uncultivated farmland with wetlands; background includes uncultivated farmland.



Viewpoint 33 – Looking west toward Arista del Sol from Grant Line Road; foreground includes uncultivated farmland of Arista del Sol; background includes existing farmhouse and barn of Arista del Sol.



Viewpoint 34 – Looking east from Grant Line Road to property adjacent to Arista del Sol: foreground includes uncultivated farmland; background includes uncultivated farmland with grazing cows.





Viewpoint 35 – Looking northwest toward Arista del Sol from Grant Line Road: foreground includes uncultivated farmland; background includes existing farmhouse and barn.



Viewpoint 36 – Looking southwest toward a wetland preserve from Rancho Cordova Parkway: foreground includes wetlands; background includes power lines and wetlands.





Viewpoint 37 – Looking northeast toward a wetland preserve from Rancho Cordova Parkway: foreground includes wetlands; background includes power lines and wetlands.



Viewpoint 38 – Looking at southwest corner of Anatolia IV: foreground includes uncultivated farmland, vacant house, garage, and shed.



Viewpoint 39 – Looking west toward Anatolia IV: foreground includes uncultivated farmland; background includes graded area with grasses and construction-induced ponding.



Viewpoint 40 – Looking north from/toward Anatolia IV: foreground includes soil stockpile with grasses; background includes graded land with grasses.

### 3.13.2.1 VISUAL CHARACTER OF THE SURROUNDING AREA

Land uses surrounding the area of analysis include limited amounts of residential and industrial development; most of the land is undeveloped. The general character of the surrounding area is described below and is presented through photographs contained above in Viewpoint 1 through Viewpoint 40.

- North-Douglas Road, industrial and residential land uses, and undeveloped rural lands are located north of the area of analysis. From the northern portion of the area of analysis, the Security Park with its 15-story concrete building is a prominent feature in the landscape, as are the metal transmission towers that form a line extending northwest of the area of analysis. Undeveloped, rural grassland makes up the largest part of the foreground views to the northeast, with scattered trees in the background. A few farmsteads and abandoned agricultural buildings (barns and sheds) along Jaeger Road contribute to the rural nature of this area. From roughly the midpoint of the area of analysis along Douglas Road, the most prominent feature of northern views is undeveloped grassland with mine dredging and a few former Aerojet structures. At full buildout, development associated with the Sunrise-Douglas Community Plan will fill the entire view from the northern part of the area of analysis.
- South-Undeveloped rural lands are located south of the area of analysis. From the southern portion of the area of analysis, Blodgett Reservoir is a prominent feature in the landscape. Undeveloped, rural grassland makes up the largest part of the foreground views to the south, with scattered trees in the background.
- East-Lands east of the area of analysis are undeveloped and are covered with annual grasses, shrubs, and scattered trees. The topography is gently rolling where dredge tailings have been deposited, but otherwise it is fairly level. Equipment and trucks associated with Teichert's aggregate mining operation on and to the east of the Rio del Oro property boundary are visible from a small area in the northeastern portion of the area of analysis. From the eastern part of the area of analysis looking east, where the land is flat and open, cars and trucks traveling on Grant Line Road and Douglas Road are clearly visible. On a clear day, the Sierra Nevada mountain range is visible in the background. Land immediately adjacent to the northeastern area of analysis boundary is scheduled to be developed as part of the Sunrise-Douglas Community Plan. When completed, these houses will be visible to motorists on Grant Line Road; they would block views of project-related development.
- West-Sunrise Boulevard and commercial and industrial development are located west of the area of analysis. Westward views from the northwestern portion of the area of analysis are composed entirely of several residential housing developments. Views from the southwestern portion of the area of analysis include uncultivated farmlands and the nearby Blodgett Reservoir.

### 3.13.3 REGULATORY FRAMEWORK

The following section describes the federal, state, and local rules and regulations applicable to the alternatives.

### **3.13.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS**

There are no federal plans, policies, regulations, or laws related to visual resources that are applicable to the alternatives under consideration.

### **3.13.3.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS**

The California Department of Transportation (Caltrans) manages the California Scenic Highway Program. The goal of the program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to the highways. There are no state-designated scenic highways in the vicinity of the area of analysis.

### **3.13.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES**

There are no regional or local plans, policies, regulations, or laws related to visual resources that are applicable to the alternatives under consideration.

## **3.13.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES**

The section provides a discussion devoted largely to analysis of the direct and indirect environmental impacts of the alternatives

### **3.13.4.1 THRESHOLDS OF SIGNIFICANCE**

A visual resources impact is considered significant if implementation of the alternatives under consideration would do any of the following:

- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

### **3.13.4.2 ANALYSIS METHODOLOGY**

This visual impact analysis is based on field observations on March 24, 2010 and a review of maps and aerial photographs. This analysis also incorporated research on design measures for incorporating new development into surrounding land uses. Analysis of the alternative's impacts was based on evaluation of the changes to the existing visual resources that would result from implementation. In making a determination of the extent and implications of the visual changes, consideration was given to:

- specific changes in the visual composition, character, and specifically valued qualities of the affected environment;

- the visual context of the affected environment;
- the extent to which the affected environment contained places or features that have been designated in plans and policies for protection or special consideration; and
- the numbers of viewers, their activities, and the extent to which these activities are related to the aesthetic qualities affected by the project-related changes.

It should be noted that an assessment of visual quality is a subjective matter, and reasonable people can disagree as to whether alteration in the visual character of the area of analysis would be adverse or beneficial. For this analysis, a conservative approach was taken, and the potential for substantial change to the visual character of the area of analysis is generally considered a significant impact.

### 3.13.4.3 IMPACT ANALYSIS

**IMPACT3.13-1 - Alteration of a scenic vista.** *Implementation would result in the potential for construction of new homes and businesses to degrade the visual quality of a scenic vista.*

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative** – A scenic vista is generally considered a view of an area that has remarkable scenery or a resource that is indigenous to the area. The area of analysis itself does not provide any aesthetic resources that would be considered a scenic vista. The agricultural grazing lands, dredge tailings, and industrial development that make up the area of analysis do not provide scenery of remarkable character. Although the current land uses provide views of an agricultural landscape that is representative of the undeveloped areas of the region, the area of analysis does not contain resources that are exemplary of the agricultural history of the area. Views of the area of analysis are not unique in the region, and they are obscured by elevated features such as the industrial park to the north, berms and trees on the Aerojet property north of White Rock Road.

Background views of the Sierra Nevada and the Coast Range are currently available only on clear days to motorists traveling on Douglas Road. Views of the Sierra Nevada for motorists traveling east on White Rock Road are obscured by berms and trees on the Aerojet property on the north side of the road, and westward views of the Coast Range are obscured by development in the industrial park. Views of the Sierra Nevada and the Coast Range from the area of analysis are currently afforded only in the eastern portion where the land is still undeveloped. Although the Sierra Nevada and the Coast Range are visible in the background from certain parts of the area of analysis and to motorists traveling on Douglas Road these views would not qualify as a significant scenic vista because of the distance between the area of analysis and the mountain ranges. Views would be substantially the same under all alternatives. Thus, **direct** impacts related to alteration of scenic vista are considered **less than significant**. **No indirect** impacts would occur.

Mitigation Measure 3.13-1: No mitigation measure is required.

**IMPACT3.13-2 – Damage to scenic resources within a state scenic highway.** *Implementation could result in the potential for adverse changes to an outstanding scenic resources visible from a state scenic highway.*

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative** – A scenic resource within a state scenic highway is a resource that is noted for its outstanding scenic qualities and is visible from a state-designated scenic highway. There are no state-designated scenic highway segments adjacent

to the area of analysis. The closest county-designated scenic roadway is Scott Road, located approximately 6 miles to the east. The area of analysis is not visible from any state or county-designated scenic highways or roadways. Therefore, project implementation would not have any direct or indirect impacts on scenic resources within a state scenic highway. **No direct or indirect** impacts would occur.

Mitigation Measure 3.13-2: No mitigation measure is required.

**IMPACT3.13-3 – Degradation of visual character.** *Implementation could substantially alter the visual character of the area of analysis through conversion of an expanse of primarily undeveloped land to developed urban uses.*

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative** – The area of analysis consists of a 742-acre expanse of open space supporting grazing activities. All three alternatives would convert large areas of undeveloped land to urban development, associated infrastructure, and supporting uses (e.g., parks, open space). The remaining 154 acres would be preserved under the Proposed Project Alternative as part of the proposed wetland preserve. Under the Reduced Footprint Alternative, 286 acres of wetlands would be preserved, and under the No Action Alternative, 372 acres of wetlands would be avoided. Considering the relatively undisturbed and rural nature of land to the north, east, and west of the area of analysis, the alternatives, conversion from grazing land to urban development would result in a substantial alteration of the visual character of the area of analysis. The altered visual condition would be readily visible to motorists on adjacent roadways (i.e., Douglas Road and a portion of Grant Line Road), as well as existing and future residents in the Sunrise-Douglas Community Plan area, and employees at the nearby industrial parks.

Views of the area of analysis from Douglas Road and the Sunrise-Douglas Community Plan area would be substantially altered as agricultural grazing land is replaced by urban development. Motorists on Douglas Road, as well as early residents in the first phase of homes developed in the Anatolia subdivision, may perceive this as a substantial degradation of the visual character or quality of the site because one common type of viewshed found in the area (pastureland) would be replaced by another common local viewshed (urban). The presence of urban development on the area of analysis would be consistent with, and appear as a continuation of, development on the developing Anatolia site and future development in the Sunrise-Douglas Community Plan area to the south and the existing commercial/industrial development to the west; however, the conversion of undeveloped land to urban development would be a substantial degradation of visual character as seen from Douglas Road and the first phase of the Anatolia housing development.

Reasonable people may consider the conversion of agricultural pastureland/undeveloped land to urban development on this scale (370 to 589 acres) as a loss of aesthetically pleasing and valuable viewshed. Agricultural pasturelands and rural areas can be considered a valuable aesthetic resource that is representative of the visual character of much of rural Sacramento County. In general, most people prefer to view vast expanses of undeveloped rural/pasturelands over urban development.

Reasonable people may differ as to the aesthetic value of the agricultural lands in the area of analysis, and whether development of urban uses in the area of analysis would constitute a substantial degradation of the existing visual character or quality of the site and its surroundings. However, given the large scale of this urban development and the rural nature of its setting, the impacts on visual resources from project implementation are considered to be **direct and significant**. **No indirect impacts** would occur.

Mitigation Measure 3.13-3: Require development to conform to City General Plan Design Guidelines.

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative** – The project applicant(s) for all project phases will include design, architectural, development, and maintenance standards specified in the Sunridge Specific Plan that will ensure minimization of impacts on the existing visual character of the site. Through this process the project applicant(s) will ensure that urban development at the area of analysis is substantially consistent with the Design Guidelines adopted as part of the City General Plan. Before the approval of building permits, all structures and facilities will adhere to the City’s design review process.

Implementation of Mitigation Measure 3.13-3 would partially reduce impacts related to the degradation of the local viewshed through conversion of undeveloped rural lands (i.e., rural setting) to a large-scale urban development project, but it would not reduce impacts to a less-than-significant level. Because of the scale and location of the area of analysis, there is no feasible mitigation available to address aesthetic impacts associated with the conversion of a large expanse of rural land to urban development. Although conformance of the specific plan with the City’s design, architectural, development, and maintenance standards is included as mitigation to require development in the area of analysis to conform to certain aesthetic guidelines, there is no mechanism to allow implementation of the project while avoiding the conversion of the local viewshed from rural lands to large-scale urban development. Therefore, impacts would **remain significant and unavoidable**.

**IMPACT3.13-4 – Temporary degradation of visual character for developed land uses caused by construction staging areas.** *Implementation would likely involve phases of construction over a long period, due to the state of the housing market, and the large number of property owners. Construction activity would involve the temporary use of staging areas for construction equipment and materials, which would be visible to adjacent land uses that have already been developed.*

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative** – Implementation would likely involve several phases of similar types of construction under all alternatives. During that time, adjacent properties, including sensitive land uses such as residential housing, schools, and parks, would be occupied while construction is occurring in a different phase. Construction would involve the temporary use of fenced staging areas for construction equipment and materials. Although these staging areas would be located in disturbed areas, construction equipment and materials would be visible to developed land uses and to motorists on local roadways. Thus, these activities would have a **temporary direct, significant** impact on visual resources. **No indirect** impact would occur.

#### Mitigation Measure 3.13-4: Screen Construction Staging Areas.

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative** – Staging and material storage areas will be located as far away from sensitive land uses (i.e., residential areas, schools, parks) and/or nearby roadways as possible. Staging and material storage areas will be approved by the City before the approval of grading plans and building permits, and will be screened from adjacent occupied land uses in earlier development phases to the maximum extent practicable. Screens may include berms or fences. The screen design will be approved by the City to further reduce visual effects to the extent possible.

Implementation of Mitigation Measure 3.13-4 would reduce significant impacts associated with temporary visual-quality degradation for developed land uses from concurrent construction staging areas (by providing visual screening). However, because screening may not always be feasible (i.e., projects covering a large area or tall buildings), this **temporary** impact is **significant and unavoidable**.



**IMPACT 3.13-5 – New light and glare effects.** *Implementation would require lighting of new development, which could inadvertently cause increased light and glare effects.*

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative** – Light associated with urban development can result in spillover lighting and glare effects. Spillover lighting is artificial lighting that spills over onto adjacent properties and could cause an annoyance to neighboring residents by disturbing sleep patterns. Glare is intense light that shines directly, or is reflected off of a surface, into a person's eyes. Use of building materials such as reflective glass and polished surfaces can cause glare. During daylight hours, the amount of glare depends on the intensity and direction of sunlight. Glare is particularly acute at sunrise and sunset because of the low angle of the sun in the sky.

Under current conditions, the area of analysis has only one occupied farm house and barn that generate no significant sources of light or glare. Project development would require lighting of roadways and parks. In addition, nighttime lighting in the office/commercial areas, or the presence of reflective surfaces on buildings in this area (e.g., reflective window glazing), may result in light and glare shining primarily onto motorists on Douglas Road and Grant Line Road, which is a **less than significant direct** impact **with mitigation**. **No indirect** impacts would occur.

**Mitigation Measure 3.13-5:** Establish and require conformance to lighting standards and prepare and implement a lighting plan.

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative** – To reduce impacts associated with light and glare, the project will conform to the following guidelines:

- Meet the minimum City lighting standards for all project-related lighting. All lighting fixtures will be designed to be consistent with the Design Guidelines contained in the City General Plan.
- Shield or screen lighting fixtures to direct the light downward and prevent light spill on adjacent properties.
- Place and direct flood or area lighting needed for construction activities or for nighttime sporting activities to not disturb adjacent residential areas and passing motorists.
- Prohibit the use of harsh mercury vapor, low-pressure sodium, or fluorescent bulbs for public lighting in residential neighborhoods.
- Use appropriate building materials, lighting, and signage in the office/commercial areas to prevent light and glare from adversely affecting motorists on nearby roadways.
- Design exterior lighting as an integral part of the building and landscape design. Lighting fixtures will be architecturally consistent with the overall site design and character and will be consistent with the City's Design Guidelines.
- Establish standards for outdoor lighting to reduce high-intensity nighttime lighting and glare. Consideration will be given to design features, namely directional shielding for street lighting, parking lot lighting, and other significant light sources, that will reduce effects of nighttime lighting. In addition, consideration will be given to the use of automatic shutoffs or motion



sensors for lighting features to further reduce excess nighttime light. All nighttime lighting will be shielded to prevent the light from shining off of the surface intended to be illuminated.

A lighting plan will be submitted to the City for review and approval which will include the above elements. The lighting plan may be submitted concurrently with other improvement plans, and will be submitted before the installation of any lighting or the approval of building permits for all phases.

**IMPACT 3.13-6 – New skyglow effects.** *Implementation would require lighting of new development, which could inadvertently cause increased skyglow effects.*

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative** - At night, artificial light can cause glare. Skyglow is a term for artificial lighting from urbanized uses that alters the rural landscape and, in sufficient quantity, lights up the nighttime sky, thus reducing the visibility of astronomical features such as stars.

Under current conditions, the area of analysis has only one small area of development associated with an operating farm. This area generates no significant source of skyglow into the night sky. However, a substantial increase in the amount of nighttime light and glare would result from the development of the project, potentially obscuring views of the stars, constellations, and other features of the night sky, and potentially affecting nearby motorists and future residents. This results in a **significant, direct impact**. **No indirect** impacts would occur.

**Mitigation Measure 3.13-6: Implement Mitigation Measure 3.13-5.**

**Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative** – Implementation of Mitigation Measure 3.13-5 above would partially reduce significant impacts associated with effects from skyglow, but would not reduce impacts to a less-than-significant level. Because of the scale and location of the area of analysis, screening or shielding light fixtures to direct light downward or the use of low-pressure sodium or other lighting would not reduce the effects of new skyglow on the night sky to a less-than-significant level; therefore, impacts would remain **significant and unavoidable**.

## **3.14 HISTORIC AND CULTURAL RESOURCES**

This section describes the affected environment, and regulatory setting for historic and cultural resources. This section also provides analysis of environmental consequences of the alternatives and the effects of mitigation on the identified consequences.

### **3.14.1 AREA OF ANALYSIS**

Section 106 of the National Historic Preservation Act (NHPA) and the regulations in 36 CFR §800.4(a)(1) require the designation of an area of potential effect (APE) for cultural resources. The project boundary, as depicted in Figure 2-1 of this DEIS, has been used as the project APE. The six Sunridge Properties were considered together as one analysis area for purposes of the historic and cultural resources analyses in this document.

### **3.14.2 AFFECTED ENVIRONMENT**

This section describes the affected environment for historic and cultural resources.

#### **3.14.2.1 ARCHAEOLOGICAL AND ETHNOGRAPHIC SETTING**

The earliest well-documented entry and spread of humans into California occurred at the beginning of the Paleo-Indian Period (10,000-6,000 years Before Present [B.P.]). Social units are thought to have been small and highly mobile. Known sites have been identified within the contexts of ancient pluvial lake shores and coastlines, as evidenced by the presence of such characteristic hunting implements as fluted projectile points and chipped stone crescent forms. Prehistoric adaptations over the ensuing centuries have been identified in the archaeological record by numerous researchers working in the area since the early 1900s, as summarized by Fredrickson (1974) and Moratto (1984). Because of the Central Valley's plentiful resources and temperate climate, the valley was well populated prehistorically and served as the location for some of the more substantial village sites known in California.

Lillard et al. (1939) and others conducted numerous studies that form the core of the current state of knowledge about early archaeology of the upper Central Valley. Little has been found archaeologically that dates to the Paleo-Indian or the Lower Archaic time periods (6,000-3,000 B.P.); however, archaeologists have recovered a great deal of data from sites occupied by the Middle Archaic Period (3,000-1,000 B.P.). The lack of sites from earlier periods may be a consequence of high sedimentation rates that have left the earliest sites deeply buried and inaccessible. During the Middle Archaic Period, the broad regional patterns of foraging subsistence strategies gave way to more intensive procurement practices. Subsistence economies were more diversified, possibly including the introduction of acorn processing technology. Human populations were growing and occupying more diverse settings. Permanent villages that were occupied throughout the year were established, primarily along major waterways. The onset of status distinctions and other indicators of growing sociopolitical complexity mark the Upper Archaic Period (1,000-500 B.P.). Exchange systems become more complex and formalized. Evidence of regular, sustained trade between groups was seen for the first time.

Several technological and social changes characterized the Emergent Period (1,800-500 B.P.). The bow and arrow were introduced, ultimately replacing the dart and atlatl (spear thrower). Territorial boundaries between groups became well established. It became increasingly common that distinctions in an individual's social status could be linked to acquired wealth. Exchange of goods between groups became more regularized with more goods, including raw materials, entering into the exchange networks. In the latter portion of this period (1,800-1,500 B.P.), exchange relations became highly regularized and

sophisticated. The clamshell disk bead became a monetary unit for exchange, and increasing quantities of goods moved greater distances. Specialists arose to govern various aspects of production and exchange.

Three time periods were well represented in archaeological assemblages in the general vicinity of the six project sites. These assemblages are discussed in detail in Moratto (1984) and summarized here. The Windmill Pattern (3,000-1,000 B.P.) of archaeological assemblages included an increased emphasis on acorn use as well as a continuation of hunting and fishing activities. Ground and polished charmstones, twined basketry, baked-clay artifacts, and worked shell and bone were hallmarks of Windmill culture. Widely ranging trade patterns brought goods in from the Coast Range and trans-Sierran sources as well as from closer trading partners. Distinctive burial practices identified with the Windmill Pattern also appeared in the Sierra Nevada foothills, indicating possible seasonal migration into the Sierra Nevada. The Berkeley Pattern (1,000-500 B.P.) represented a greater reliance on acorns as a food source than was seen previously. Distinctive stone and shell artifacts distinguished this pattern from earlier or later cultural expressions. The Berkeley Pattern appears to have developed in the San Francisco Bay Area and was spread through the migration of Plains Miwok Indians. The Augustine Pattern (500 B.P. to Historic Era) may have been stimulated by the southern migration of Wintuan people from north of the Sacramento Valley. Their culture was marked by a population increase resulting from more intensive food procurement strategies, as well as by a marked change in burial practices, increased trade activities, and a well-defined ceramic technology.

Native Americans of the western Sierra Nevada foothills lived in relatively permanent settlements, visiting the higher reaches primarily during the summer months (Moratto, 1984). Permanent settlements ranged from a handful of people to several hundred, and tended to be situated near water, preferably on slightly raised ground. A major village might include dwellings, granaries, sweat houses, a headman's house, and dance house, or other ceremonial structures. The people of the villages would gather a wide variety of fruits, nuts, greens, bulbs, roots, and seeds, processing and storing many of them for winter. Fish, birds, deer, small game, and many other animals were hunted.

By virtue of its geographic position, the project site lies within the Nisenan (sometimes referred to as the Southern Maidu) prehistoric sphere of influence. The Nisenan belong to the Penutian linguistic family. Kroeber (1925) recognized three Nisenan dialects-Northern Hill Nisenan, Southern Hill Nisenan, and Valley Nisenan. The Nisenan territory included the drainages of the Yuba, Bear, and American Rivers, and the lower drainages of the Feather River. The Nisenan ranged from the Sierra Nevada crest to nearly sea level at the Sacramento River.

Significant Native American contact with Europeans came late in the vicinity of the six project sites. Limited encounters with explorers and trappers during the early 19th century left the Nisenan and Washoe relatively unaffected (Wilson and Towne 1978). In 1833, the Valley Nisenan were decimated by a malaria epidemic that did not spread to the Hill tribes. However, Captain John Sutter settled in Hill Nisenan territory in 1839, and the subsequent discovery of gold resulted in the widespread killing and persecution of the Nisenan. By 1860, disease, violence, forced relocation, and environmental destruction had greatly affected Nisenan populations and traditional systems (Moratto, 1984).

### **3.14.2.2 HISTORIC SETTING**

Early European travelers through the region included Gabriel Moraga and a group of Spanish explorers in 1806-1808, and fur trappers and explorers in the 1820s. Jedediah Smith led a group of trappers along the edge of the foothills to the American River in search of a pass over the Sierra Nevada in 1826. Kit Carson and John C. Fremont crossed the mountains near Lake Tahoe and descended to Sutter's Fort traveling along the South Fork of the American River in 1844.

The Sunridge Properties lie just south of the southern boundary of the Rancho Rio de los Americanos Mexican land grant (Foothill Associates, 2004) where more than 35,500 acres was granted to William Leidesdorff and purchased by Joseph L. Folsom in 1848 after Leidesdorff's death (Hoover et al., 1990). Nearby White Rock Road was laid out in 1848 as a route between Sacramento and Placerville.

The Pony Express later used the route previously traveled by miners who were departing from Sacramento and heading for the Sierra Nevada foothills, along today's Folsom Boulevard. Several "way stations" appeared along this route through present-day Rancho Cordova. These stations were often named after proprietors or were indicative of their distance from Sacramento (e.g., Fifteen Mile House). The most famous of these was Mills Station, which was constructed in the early 1900s and subsequently used as a post office, a grocery store, and a library (FCUSD, 2005). The building was later restored by Sacramento Regional Transit; it is currently used as administrative offices at the light-rail station located near Mather Field Road and Folsom Boulevard.

Agriculture was the main industry in the region during the late 19th and the early 20th centuries. In fact, the City would later be named after the Cordova Vineyard, which was located in the center of the Rancho Rio de los Americanos land grant (Miller, 1990). The property was used primarily for wheat cultivation or grazing until the 1920s (Peak & Associates, 1999, 2005). By 1923, most of the property was owned by the Natomas Company. Gold dredging to depths of 80-110 feet took place over most of the project site from 1915 to 1962, leaving behind huge piles of tailings that filled the dredge lines and rose significantly above the landscape.

To the north of the area of analysis, the Natomas Company began selling parcels of dredged land to Aerojet beginning in 1950 (Peak & Associates, 1999, 2005). Aerojet subsequently leased approximately 1,700 acres to McDonnell Douglas Corporation (MDC), which initially constructed rocket-engine test stands, buildings, and other facilities in the Administration, Alpha, and DM-14 areas of the site. Other areas, including the Alpha Complex, Beta Complex, Kappa Complex, Gamma Complex, and Sigma Complex, were subsequently developed. These various facilities were used for assembly and testing of rocket systems through 1969 (Peak & Associates, 1999, 2005). Several parcels were leased to the National Aeronautics and Space Administration (NASA) from 1962 to 1972 for rocket engine tests. A more complete description of the static rocket test facilities and their history is provided in the Draft Historic Buildings and Structures Inventory (Weitze Research, 2004).

The U.S. Air Force constructed Mills Field, later renamed Mather Field, in 1918 to serve as a flight training school. After World War II, the base was the only aerial navigation school remaining for the U.S. military and its allies. A Strategic Air Command B-52 squadron was assigned to the air force base from 1958 through 1989, when the base was decommissioned under the Federal Base Realignment and Closure Act. The closure of the base prompted the County Board of Supervisors to examine the potential for converting the base to a public-use airport facility. The Air Force transferred the base to the County, and in May 1995, Mather Airport was opened. Other parts of the former military base were redeveloped for use as housing and a business park (Sacramento County Airport System, n.d.).

The name "Rancho Cordova" was formally applied to the area currently known as the City of Rancho Cordova in 1955 when a post office was established. Efforts by local residents to formally establish a city continued over the next 40 years, until Rancho Cordova was incorporated by voter approval in July 2003. At that time, the newly appointed city included more than 55,000 residents (City of Rancho Cordova, 2003).

### **3.14.2.3 ARCHAEOLOGICAL RESOURCES**

According to the USACE Decision Document for the Anatolia IV Project (USACE, 2006), the Anatolia IV project site does not appear to contain any sites listed or eligible for listing on the National Register of Historic Places (NRHP). No previously recorded prehistoric or historic resources exist within the project site.

The DA Evaluation and Decision Document for the Sunridge Village J Project (USACE, 2006) states that a pedestrian survey was conducted on the Sunridge Village J property and that a single historic resource was identified. The USACE initiated consultation with the California State Historic Preservation Officer (SHPO) regarding this resource. The USACE received concurrence from the SHPO on April 7, 2006 stating that the resource was not eligible for listing on the NRHP.

According to the USACE Decision Document for the Grantline 208 Project (USACE, 2006), the Grantline 208 project site does not appear to contain any sites listed or eligible for listing on the NRHP. No previously recorded prehistoric or historic resources exist within the project site.

A Determination of Eligibility and Effect for the Douglas Road 98 Project Area (as cited in USACE, 2006) determined that the project site contains no sites listed or eligible for listing on the National Register of Historic Places or any recorded prehistoric or historic resources. The findings of the report were based on records search at the North Central Information Center of the California Historical Resources Information System Native American consultation and field survey of the project site.

According to the document *A Determination of Eligibility and Effects for the Douglas Road 103 Project Area* prepared by Peak and Associates (1997), the Douglas Road 103 project site does not contain any sites listed, or eligible for listing, on the NRHP. No previously recorded prehistoric or historic resources exist within the project site.

A Determination of Eligibility and Effect prepared for the Arista del Sol property (Foothill Associates, 2004) states that a records search was conducted at the North Central Information Center of the California Historical Resources Information System in November 2004. As a result of this records search, no sites were identified in or adjacent to the Arista del Sol parcel. A letter was sent to the Native American Heritage Commission requesting a check of the Sacred Lands files and no properties were identified as Sacred Lands. Letters were sent to individuals of the Ione Band of Miwok Indians, the Miwok Indian Community of the Wilton Rancheria, the Sierra Native Council, and the Wilton Rancheria. No replies were received as of the date of the Foothill Associates document. A field survey of the Arista del Sol property with a complete inspection of the project site was completed in November 2004. As a result of the field survey no prehistoric or historic resources were located within the project area. The Determination of Eligibility and Effect recommended that with regard to Section 106 of the National Historic Preservation Act (NHPA), the agency seek concurrence from the SHPO with a finding of “no historic properties affected” per Section 800.4(d)(1) (Foothill Associates, 2004).

### **3.14.3 REGULATORY FRAMEWORK**

#### **3.14.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS**

##### **NATIONAL HISTORIC PRESERVATION ACT**

Section 470 of the NHPA directs Federal agencies to integrate historic preservation into all activities that either directly or indirectly involve land use decisions. The NHPA is administered by the National Park Service, the Advisory Council on Historic Preservation (ACHP), SHPO, and each Federal agency.

Implementing regulations promulgated by the Secretary of the Interior include 36 CFR Part 800: *Regulations of the Advisory Council on Historic Preservation Governing the NHPA Section 106 Review Process*.

Section 106 of the NHPA requires Federal agencies to take into consideration the potential effects of proposed undertakings on cultural resources listed on or determined potentially eligible for inclusion in the NRHP, and to allow the ACHP the opportunity to comment on the proposed undertaking. The Section 106 review process is usually carried out as part of a formal consultation with the SHPO, the ACHP, and other parties, such as Indian tribes, that have knowledge of, or a particular interest in, historic resources in the area of the undertaking.

This area of analysis is not located on Federal land and the proposed development is not Federally funded, but does require Federal action through a discretionary permit under Section 404 of the Clean Water Act (CWA); therefore, compliance with the requirements of Section 106 is required. Section 106 requirements apply to properties that are not formally determined eligible, but that are considered by the SHPO to meet eligibility requirements. The intensity of impacts on archaeological resources relates to the importance of the information they may contain and/or the extent of disturbance or degradation that may be caused by the impacts.

Determining the NRHP eligibility of a site or district is guided by the specific legal context of the site's significance as set out in 36 CFR Part 60.4 (see below). The NHPA authorizes the Secretary of the Interior to maintain and expand a National Register of districts, sites, buildings, structures, and objects of significance in American history, architecture, archaeology, engineering, and culture. A property may be eligible for listing in the NRHP if it meets criteria for evaluation as defined in 36 CFR §60.4, as follows:

- The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:
  - (a) that are associated with events that have made a significant contribution to the broad patterns of our history;
  - (b) that are associated with the lives of persons significant in our past;
  - (c) that embody the distinctive characteristics of a type, period or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
  - (d) that have yielded, or may be likely to yield, information important in prehistory or history.

## **ARCHEOLOGICAL AND HISTORIC PRESERVATION ACT**

The Archeological and Historic Preservation Act (AHPA) of 1974, 16 USC §469 et seq. provides for the preservation of cultural resources if an activity may cause irreparable loss or destruction of significant scientific, prehistoric, or archeological data. In accordance with the AHPA, the responsible official or the Secretary of the Interior is authorized to undertake data recovery and preservation activities.

## **NATIONAL NATURAL LANDMARKS**

The Secretary of the Interior is authorized to designate areas as National Natural Landmarks for listing on the National Registry of Natural Landmarks pursuant to the Historic Act of 1935(16 USC 461 et seq.). In

conducting the environmental review of the proposed project, the USACE is required to consider the existence and location of natural landmarks, using information provided by the National Park Service pursuant to 36 CFR §62.6(d).

### **3.14.3.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS**

The California State Office of Historic Preservation reviews state programs and projects pursuant to §5024 and 5024.5 of the California Public Resources Code. Federal and Federally-sponsored programs and projects are reviewed pursuant to Sections 106 and 110 of the NHPA. Section 106 of the NHPA, as amended, requires Federal agencies to consider the effects of proposed Federal undertakings on historic properties. NHPA's implementing regulations found in 36 CFR Part 800, require Federal agencies (and their designees, permittees, licensees, or grantees) to initiate consultation with the SHPO as part of the Section 106 review process.

### **3.14.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES**

#### **RANCHO CORDOVA GENERAL PLAN**

The City General Plan has goals and policies relating to cultural resources.

### **3.14.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES**

#### **3.14.4.1 THRESHOLDS OF SIGNIFICANCE**

Cultural resources impacts are considered significant if implementation of the proposed project or alternatives under consideration would disturb any human remains, including those interred outside of formal cemeteries.

Under the NHPA, if it is determined that historic properties may be affected by an undertaking, the agency proceeds with the Section 106 process, assessing adverse effects. The criteria of adverse effects are found in Section 800.5(a)(1) of the regulations of the NHPA. According to the criteria, an adverse effect occurs when the integrity of the historic property may be diminished by the undertaking through alteration of the characteristics that qualify the property for the NRHP. Such alteration can be caused directly as a result of the undertaking or be an indirect consequence. The criteria of adverse effect state:

*An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.*

Adverse effects on historic properties include, but are not limited to:

- Physical destruction of or damage to all or part of the property;
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with

the Secretary of Interior's Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines;

- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
- Neglect of a property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
- Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

### 3.14.4.2 ANALYSIS METHODOLOGY

The methodology for analysis of potential impacts to cultural resources was based on a review of cultural resource studies conducted for the analysis area, identification of resources encountered and described in those reports, and a qualitative assessment of the likelihood of those resources being affected by the Proposed Project and alternatives. Several cultural resource studies have been performed for the area of analysis. These studies concluded that no cultural resource features eligible for the NRHP are present on that property and adjacent properties. Determination of requirements for archaeological resource protection will be included in any DA permit decision, should subsequent decisions be made.

### 3.14.4.3 IMPACT ANALYSIS

**IMPACT3.14-1 - Loss of or damage to recorded cultural resource sites.** *Construction activities during project implementation could result in the loss of known cultural resources.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative – There are no recorded cultural resource sites located in the area of analysis, therefore **no direct or indirect** impacts would occur under the three alternatives.

Mitigation Measure 3.14-1: No mitigation measures are required.

**IMPACT3.14-2 - Loss of or damage to historic sites, buildings, and structures.** *Construction activities during project implementation could result in the loss of known historic sites, buildings, or structures.*

Proposed Project Alternative, Reduced Footprint Alternative and No Action Alternative – There are no known historic sites, buildings, or structures located on the project site, therefore **no direct or indirect** impacts would occur under the three alternatives.

Mitigation Measure 3.14-2: No mitigation measures are required.



**IMPACT 3.14-3 - Potential damage to undiscovered prehistoric sites or Native American burials.** *Construction and other earthmoving activities during project implementation could result in damage to as-yet-unknown cultural resources, including prehistoric sites or Native American burials.*

**Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative** – Undiscovered or unrecorded cultural resource sites may be uncovered by project-related construction activities. The potential exists for previously unidentified archaeological sites to be identified during preconstruction or construction-related ground-disturbing activities. If such resources were to represent “historical resources” or “unique archaeological resources” any destruction of these resources would be considered a significant impact. Therefore, impacts on as-yet-undiscovered cultural resources are considered **direct and potentially significant** for the three alternatives. **No indirect impacts** would occur.

**Mitigation Measure 3.14-3: Stop Potentially Damaging Work if Archaeological Sites or Human Remains are Uncovered During Construction**

If archaeological sites are uncovered during construction, the project applicant(s) will retain a City-approved qualified professional archaeologist to provide on-site monitoring during construction activities in this area.

In accordance with the California Health and Safety Code, if human remains are uncovered during construction at the project site, work within 50 feet of the remains will be suspended immediately, and the City and the County Coroner will be notified immediately. If the remains are determined by the County Coroner to be Native American, the NAHC will be notified within 24 hours of that determination, and the guidelines of the NAHC will be adhered to in the treatment and disposition of the remains. Construction work in the vicinity of the remains will not resume until the mitigation is completed.

## **3.15 GEOLOGY AND SOILS**

### **3.15.1 AREA OF ANALYSIS**

For the purposes of evaluating geology and soils, the area of analysis is defined as the surface and ground under the six Sunridge Properties, and nearby geologic activities that may affect those six parcels.

### **3.15.2 AFFECTED ENVIRONMENT**

#### **PHYSIOGRAPHIC SETTING**

The project site is located in the Sacramento Valley, approximately 3 miles south of the American River, and lies centrally within the Great Valley geomorphic province of California. The Sacramento Valley forms the northern third of the Great Valley, which includes approximately 33,000 square miles and fills a northwest-trending structural depression bounded on the west by the Great Valley Fault Zone and the Coast Range, and on the east by the Sierra Nevada and the Foothills Fault zone. Relatively few faults in the Great Valley have been active during the last 10,000 years. Most of the surface of the Great Valley is covered with Holocene and Pleistocene-age alluvium, composed primarily of sediments from the Sierra Nevada and the Coast Range that were carried by water and deposited on the valley floor.

#### **TOPOGRAPHY**

The area of analysis is located where the terrain slopes gently in a southwesterly direction with elevations ranging from 255 feet above mean sea level (msl) in the northeast to 115 feet msl in the southwest. The area of analysis consists predominantly of gently rolling hills interspersed with seasonal drainage courses. Hillside slopes range between 0% and 8% with an average slope across the area of analysis of 0.6% (County of Sacramento, 2001).

#### **GEOLOGIC OVERVIEW**

The area of analysis is located within a transitional geologic zone bounded by the Central Valley to the west and the Sierra Foothills to the east. The predominant geologic formations underlying the region in and around the area of analysis are shown in Figure 3.15-1. The predominant geologic formation within the area of analysis is Cenozoic Tertiary Mehrten Formation, consisting of andesitic conglomerate, sandstone, and breccia. The area north of the area of analysis is underlain by mostly Cenozoic Quaternary gravelly alluvial and glacial deposits, exposed at the surface as mine and dredge tailings.

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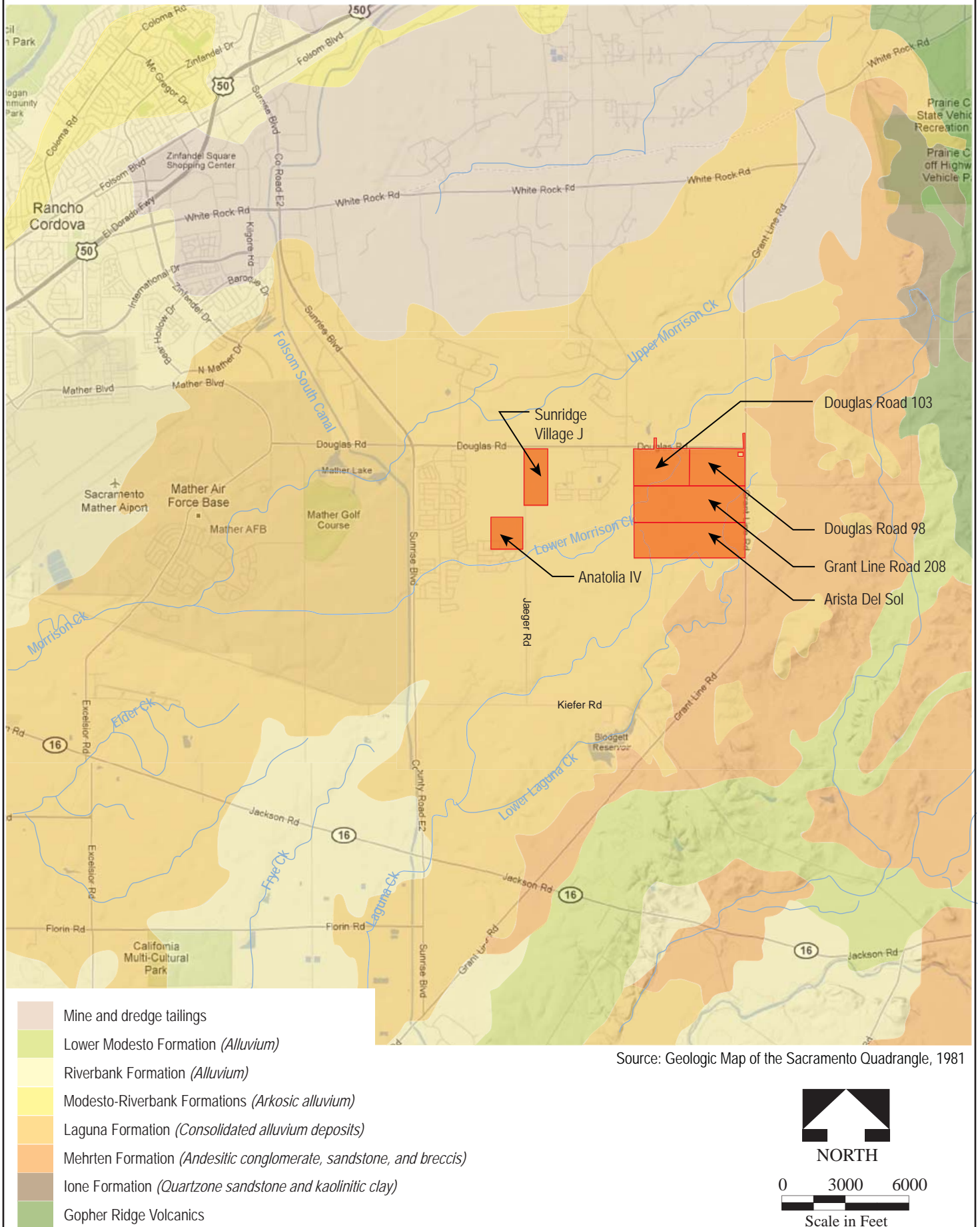


Figure 3.15-1. Geologic Map

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## REGIONAL SEISMICITY AND FAULT ZONES

With the exception of the Dunnigan Hills fault, located in the Woodland area, the Sacramento Valley has generally not been seismically active in the last 10,000 years. Faults closest to the area of analysis with known or estimated activity during the Holocene are generally located in the San Francisco Bay Area (Bay Area) at least 45 miles to the west and lie within the Coast Range geomorphic province (see Table 3.15-1).

<b>Table 3.15-1</b> <b>Faults Active in Holocene Time in the Vicinity of the Area of Analysis</b>		
<b>Fault</b>	<b>Distance from area of analysis (miles)</b>	<b>Location</b>
Dunnigan Hills	35	Sacramento Valley, Woodland
Great Valley Thrust Zone	45	Coast Range, western San Joaquin Valley
Green Valley	50	Coast Range, Bay Area
Concord	55	Coast Range, Bay Area
Clayton	55	Coast Range, Bay Area
Marsh Creek	60	Coast Range, Bay Area
Greenville	65	Coast Range, Bay Area
Sources: Harwood and Helley 1987, Jennings 1994		

Potential seismic hazards resulting from a nearby moderate to major earthquake can generally be classified as primary and secondary. The primary effect is fault ground rupture, also called surface faulting. Common secondary seismic hazards include ground shaking, liquefaction, and subsidence. Each of these potential hazards is discussed below.

### SURFACE FAULTING

Surface ground rupture along faults is generally limited to a linear zone a few meters wide. Because no active faults have been mapped across the area of analysis by the California Geological Survey or United States Geological Survey (USGS), nor is the area of analysis located within an Alquist-Priolo Earthquake Fault Zone, fault ground rupture does not represent a hazard at the area of analysis (California Geological Survey, 1999; Hart and Bryant, 1999).

### SEISMIC GROUND SHAKING

Ground motion can be estimated by probabilistic methods at specified hazard levels. The intensity of ground shaking depends on the distance from the earthquake epicenter to the site, the magnitude of the earthquake and site soil conditions. The *Probabilistic Seismic Hazard Assessment for the State of California* (Petersen et al., 1996), published by USGS and the California Division of Mines and Geology (CDMG), identifies the seismic hazard based on a review of these characteristics and historical seismicity throughout California. The results of these studies suggest that there is a 10% to 20% probability that the peak horizontal acceleration experienced at the site would exceed 0.2 gravities in 50 years. Damage to a single-family dwelling typically begins at 0.2 gravities (Risk Prediction Initiative 1996, Rogers et al. 1996).

## GROUND FAILURE/LIQUEFACTION

Liquefaction is a process by which water-saturated materials (including soil, sediment, and certain types of volcanic deposits) lose strength and may fail during strong ground shaking. Liquefaction is the transformation of a granular material from a solid state into a liquefied state as a consequence of increased pore-water pressure. This behavior is most commonly induced by strong ground shaking associated with earthquakes. In some cases, a complete loss of strength occurs and catastrophic ground failure may result. However, liquefaction may happen where only limited strains develop, and ground surface deformations are much less serious.

Because the area of analysis has a relatively deep groundwater table, soils at the area of analysis are relatively stable, and potential sources of seismic activity are a relatively long distance away, sediments underlying the area of analysis can be expected to have a low liquefaction potential.

## SUBSIDENCE AND SETTLEMENT

Land surface subsidence can be induced by both natural phenomena and human activity. Natural phenomena include subsidence resulting from tectonic deformations and seismically induced settlements; soil subsidence because of consolidation, hydrocompaction, or rapid sedimentation; subsidence because of oxidation or dewatering of organically rich soils; and subsidence related to subsurface cavities. Subsidence related to human activity includes subsurface fluid or sediment withdrawal. Pumping of water for residential, commercial, and agricultural uses from subsurface water tables causes the greatest amount of subsidence in Sacramento County. According to the *County of Sacramento General Plan* (County of Sacramento, 1993) and the *Rancho Cordova General Plan*, the area of analysis is located within a potential groundwater basin subsidence area.

## SOILS

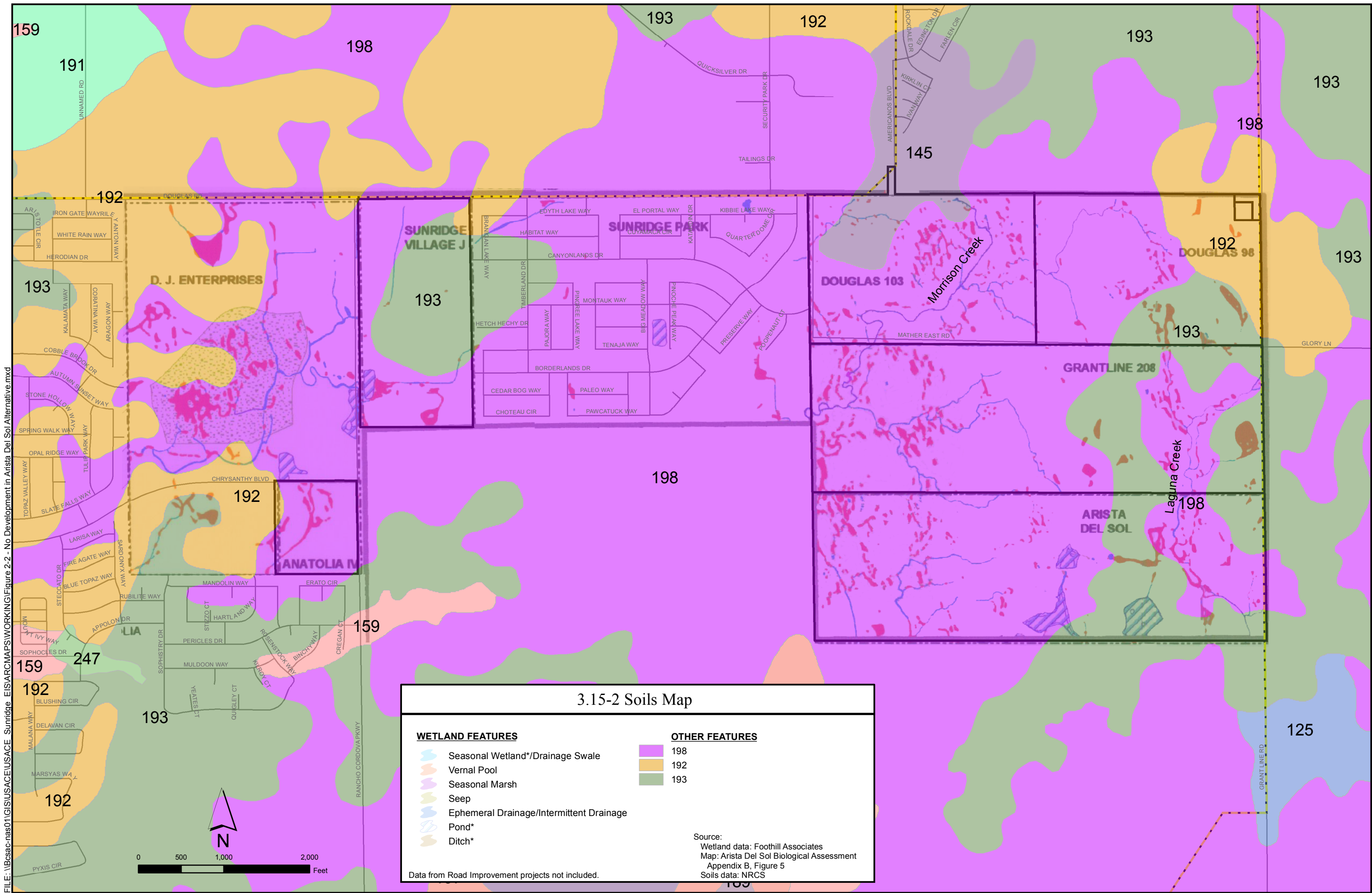
Soils occurring within the area of analysis can be grouped into two categories based on general landscape and topography. There are two general categories of soils in the project area. These two categories are: “Nearly Level to Steep Soils on Hills and Filled Areas” and “Nearly Level to Hilly Soils on High Terraces and Hills.” The two groups are described below.

**Nearly Level to Steep Soils on Hills and Filled Areas** - The soils in this group are very shallow to very deep and moderately well or well drained. These soils are underlain by weakly consolidated sediments or have cemented hardpan underlain by consolidated sediments. The moderately deep soils have a gravelly loam or fine sandy loam surface layer and a claypan. The very shallow and shallow soils are sandy loam or fine sandy loam. The map unit in this group that is found in the area of analysis is “Urban land-Xerarents-Fiddyment.”

**Nearly Level to Hilly Soils on high Terraces and Hills** - The soils in this group are moderately deep to very deep and well or moderately well drained. They have a sandy clay loam or gravelly clay subsoil or a claypan. Some soils in this group are underlain by a cemented hardpan at a depth of 20 to 40 inches. The map unit in this group that is found in the area of analysis is “Redding-Corning-Red Bluff,” which is moderately well drained soil that is moderately deep over a cemented hardpan and well drained.

Within the two main groups of soils, there are specific soil types present in the area of analysis (Figure 3.15-2). Table 3.15-2 provides a detailed summary of the physical and chemical characteristics of each soil type identified from the area of analysis. Soil characteristics are described below by map unit number.

FILE: \\Bcsac-nas01\GIS\USACE\USACE Sunridge EIS\ARC\MAPS\WORKING\Figure 2-2 - No Development in Arista Del Sol Alternative.mxd



### 3.15-2 Soils Map

#### WETLAND FEATURES

- Seasonal Wetland\*/Drainage Swale
- Vernal Pool
- Seasonal Marsh
- Seep
- Ephemeral Drainage/Intermittent Drainage
- Pond\*
- Ditch\*

#### OTHER FEATURES

- 198
- 192
- 193

Data from Road Improvement projects not included.

Source:  
Wetland data: Foothill Associates  
Map: Arista Del Sol Biological Assessment  
Appendix B, Figure 5  
Soils data: NRCS



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Table 3.15- 2 Soil Mapping Unit Descriptions												
Map <sup>1</sup>	Soil Series Name	Depth (inches)	USDA Texture	Shrink-Swell Potential	Perme-ability (in/hr)	Drainage	Erosion Hazard	Erosion Factors <sup>2</sup>		Land Capability <sup>3</sup>	pH	Plasticity Index <sup>4</sup>
								K	T			
145	Fiddyment	0-8	Fine sandy loam	Low	0.6-2.0	Well drained	Moderate for excavation	0.37	2	Ive Nonirrigated Irrigated	5.6-7.3	NP-10
		8-15	Loam	Low	0.6-2.0			0.43			5.6-7.3	5-10
		15-28	Sandy clay loam	Moderate	<0.06			0.32			6.1-7.8	15-25
		28-40	Indurated	-	-			-			-	-
		40	Weathered bedrock	-	-			-			-	-
192	Red Bluff	0-8	Loam	Low	0.6-2.0	Well drained	Slight to Moderate	0.32	5	IIIe Nonirrigated	5.1-6.0	5-15
		25-Aug	Clay loam, gravelly clay loam	Moderate	0.2-0.6			0.24			5.1-6.5	10-20
		25-43	Clay loam, gravelly clay loam	Moderate	0.2-0.6			0.24			5.6-6.5	15-30
		43-68	Gravelly clay loam, very gravelly clay loam, very gravelly clay	Moderate	0.2-0.6			0.24			5.6-6.5	10-20
193	Red Bluff 45%	0-8	Loam	Low	0.6-2.0	Well drained	Slight to Moderate	0.32	5	IIIe Nonirrigated	5.1-6.0	5-15
		25-Aug	Clay loam, gravelly clay loam	Moderate	0.2-0.6			0.24			5.1-6.5	10-20
		25-43	Clay loam, gravelly clay loam	Moderate	0.2-0.6			0.24			5.6-6.5	15-30
		43-68	Gravelly clay loam, very gravelly clay loam, very gravelly clay	Moderate	0.2-0.6			0.24			5.6-6.5	10-20
	Redding 40%	0-7	Gravelly loam	Low	0.6-2.0	Well drained	Slight to Moderate	0.32	5	VIIIs Nonirrigated	5.6-6.5	5-15
		20-Jul	Gravelly loam, gravelly clay loam	Moderate	0.2-0.6			0.24			5.1-6.5	5-15
		20-28	Gravelly clay loam, gravelly clay	High	<0.06			0.25			5.6-6.5	15-30
		28-66	Indurated	-	-			-			-	-
198	Redding	0-7	Gravelly loam	Low	0.6-2.0	Well drained	Slight to Moderate	0.32	5	VIIIs Nonirrigated	5.6-6.5	5-15
		20-Jul	Gravelly loam, gravelly clay loam	Moderate	0.2-0.6			0.24			5.1-6.5	5-15
		20-28	Gravelly clay loam, gravelly clay	High	<0.06			0.25			5.6-6.5	15-30
		28-66	Indurated	-	-			-			-	-
<sup>1</sup> Soil map numbers refer to numbers shown in Figure 3.15-2												
<sup>2</sup> K is a measurement of relative susceptibility to sheet and rill erosion by water, values range from 0.10 to 0.64, with lower values representing a lower susceptibility to erosion. T represents soil loss tolerance, which is defined as the maximum rate of soil erosion without reducing production or quality, values range from 1-5 with 5 being least susceptible to erosion.												
<sup>3</sup> Land Capability is an indication of the suitability of land for crops, values range from I to VIII, with VIII being unsuitable for crops.												
<sup>4</sup> Soils with a high plasticity index have a wide range of moisture content in which the soil performs as a plastic material; larger values are more plastic.												
Source: NRCS 1993												

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**145 Fiddymment Fine Sandy Loam, 1–8% Slopes** The soil covers the extreme southeastern corner of the area of analysis, next to the existing Security Park. Fiddymment is a well drained soil formed from weathered sandstone or siltstone. Native vegetation consists primarily of annual grasses, forbs, and scattered oak trees. Permeability is very slow, and soils above the claypan tend to become waterlogged for short periods after heavy rainfall. Limitations affecting this site for urban development are shallow depth to hardpan and bedrock (which limits trenching activities and landscaping plants), low strength (instability affects road and street design), and very slow permeability (which increases erosion hazards for roads and building pads, especially steep slopes with cut and fill).

**192 Red Bluff Loam, 2–5% Slopes** Red Bluff soil is very deep, well drained, and formed from alluvium on intermediate terraces—in this instance, part of the ancient channel of the American River. Native vegetation is primarily annual grasses and forbs. Limitations affecting urban uses are low strength and a moderate shrink-swell potential, which can be compensated for by proper design.

**193 Red Bluff-Redding Complex, 0–5% Slopes** The Red Bluff-Redding complex is well-drained soil. The complex is composed of approximately 45% Red Bluff and 40% Redding soils, and is located on high terraces formed from alluvium. Native vegetation is primarily annual grasses and forbs. This soil is limited for urban development by a cemented pan and low strength, which can be compensated for by proper design.

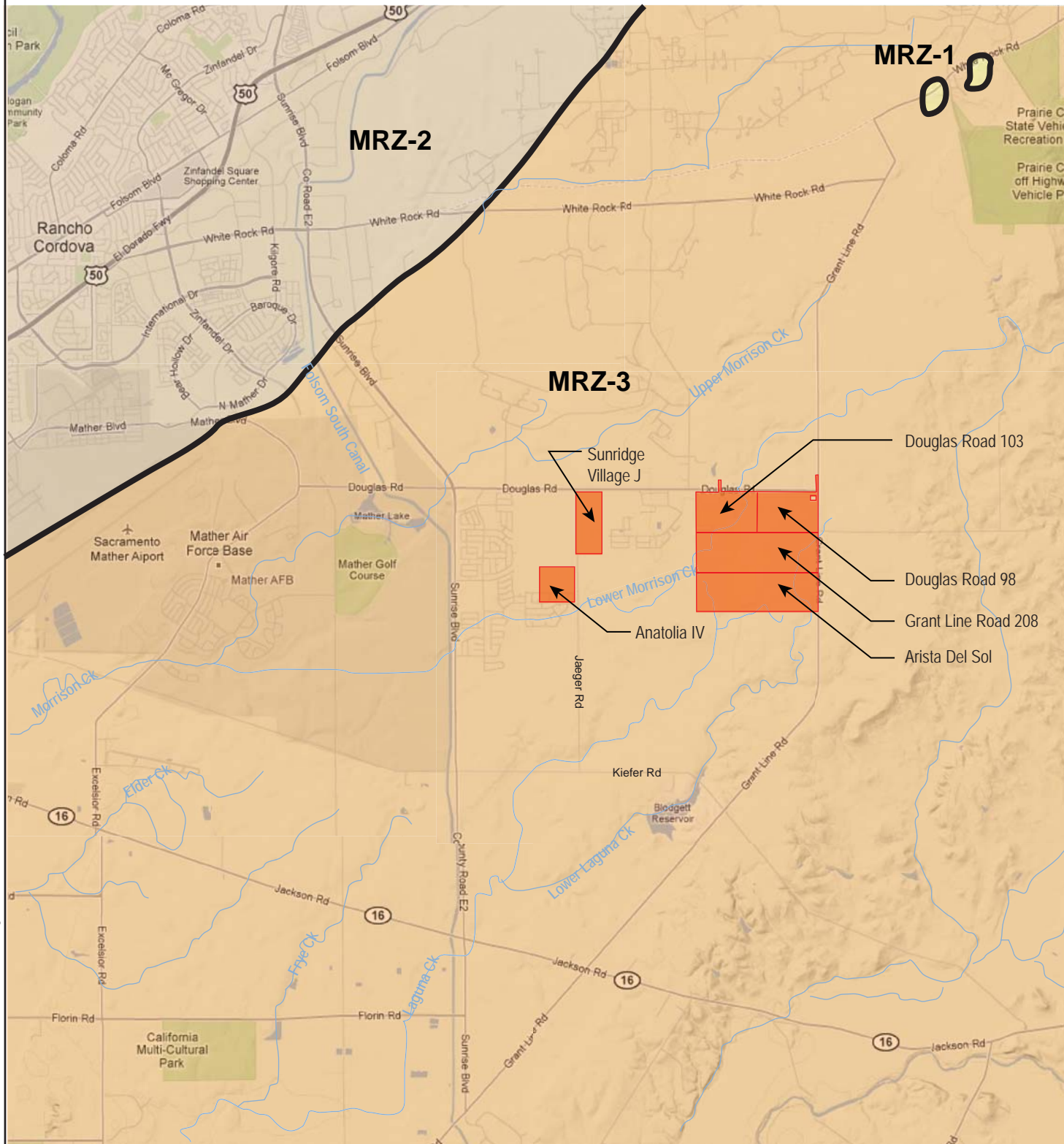
**198 Redding Gravelly Loam, 0–8% Slopes** This soil consists of high terrace and terrace remnants formed from gravelly and cobbly alluvium. Native vegetation is primarily annual grasses and forbs. Permeability is very slow, and soils above the claypan tend to become waterlogged for short periods after heavy rainfall. Soil uses are limited by the high water-erosion hazard, moderate shrink-swell potential, low strength, shallow depth to hardpan, shallow depth to claypan, and very slow permeability.

## MINERAL RESOURCES

The CDMG is responsible for classification and designation of areas containing, or potentially containing, significant mineral resources. The CDMG classification system recognizes four Mineral Resource Zones (MRZs). The area of analysis has been designated MRZ-3 with respect to aggregate resources, which are valuable resources for the construction industry. The MRZ-3 designation is utilized for areas containing mineral deposits that have an unknown significance because they cannot be evaluated from available data. There is potential for the area of analysis to be an area that contains soils that are gold bearing. Much of the land north of the area of analysis has been dredged for gold, and nearby gold dredging activities have yielded large amounts of gold. Table 3.15-3 lists the MRZ classifications, and Figure 3.15-3 indicates the classifications for the area of analysis.

<b>Table 3.15-3</b> <b>California Division of Mines and Geology Mineral Land Classification System</b>	
Classification	Description
MRZ-1	Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence
MRZ-2	Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists
MRZ-3	Areas containing mineral deposits, the significance of which cannot be evaluated from existing data
MRZ-4	Areas where available data are inadequate for placement in any other mineral resource zone
Note: MRZ = Mineral Resource Zone	
Source: Dupras 1988	

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Source: Portland Cement Concrete Grade Aggregate Resources, 1988



0 3000 6000  
Scale in Feet

- MRZ-1 Areas of no mineral resource significance
- MRZ-2 Areas of identified mineral resource significance
- MRZ-3 Areas of undetermined mineral resource significance

Figure 3.15-3. Mineral Land Classification Map

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### **3.15.3 REGULATORY FRAMEWORK**

#### **3.15.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS**

##### **FEDERAL EARTHQUAKE HAZARDS REDUCTION ACT**

In October 1997, the U.S. Congress passed the Earthquake Hazards Reduction Act to “reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program.” To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended in November 1990 by the National Earthquake Hazards Reduction Program Act (NEHRPA), which refined the description of agency responsibilities, program goals, and objectives.

The NEHRP’s mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results. The NEHRPA designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Other NEHRPA agencies include the National Institute of Standards and Technology, National Science Foundation, and USGS.

#### **3.15.3.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS**

##### **CALIFORNIA BUILDING STANDARDS CODE**

The State of California provides minimum standard for building design through the California Building Standards Code (CBC) (Title 24 California Code of Regulations). Where no other building codes apply, Chapter 29 regulates excavation, foundations, and retaining walls. The CBC also applies to building design and construction in the state and is based on the Federal Uniform Building Code used widely throughout the country (generally adopted on a state-by-state or district-by-district basis). The CBC has been modified for California conditions with numerous more detailed and/or more stringent regulations.

The state earthquake protection law (California Health and Safety Code §19100 et seq.) requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC. The CBC identifies seismic factors that must be considered in structural design.

Chapter 18 of the CBC regulates the excavation of foundations and retaining walls, and Appendix Chapter A33 regulates grading activities, including drainage and erosion control, and construction on unstable soils, such as expansive soils and liquefaction areas.

##### **CALIFORNIA SEISMIC HAZARDS MAPPING ACT**

The California Seismic Hazards Mapping Act of 1990 (Public Resources Code §2690 – 2699.6) addresses seismic hazards other than surface rupture, such as liquefaction and induced landslides. The Seismic Hazards Mapping Act specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites, and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.



## **ALQUIST-PRIOLO EARTHQUAKE FAULT ZONING ACT**

The Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code §2621 – 2630) was passed by the California Legislature in 1972 to mitigate the hazard of surface faulting to structures. The act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The act addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. Local agencies must regulate most development in fault zones established by the State Geologist. Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults.

## **CALIFORNIA SURFACE MINING AND RECLAMATION ACT**

The California Surface Mining and Reclamation Act (SMARA) (Public Resources Code §2710 et seq.) was enacted by the California Legislature in 1975 to regulate activities related to mineral resource extraction. The act requires the prevention of adverse environmental effects caused by mining, the reclamation of mined lands for alternative land uses, and the elimination of hazards to public health and safety from the effects of mining activities. At the same time, SMARA encourages both the conservation and the production of extractive mineral resources, requiring the State Geologist to identify and attach levels of significance to the state's varied extractive resource deposits. Under SMARA, the mining industry in California must adequately plan for the reclamation of mined sites for beneficial uses and provide financial assurances to guarantee that the approved reclamation will actually be implemented. The requirements of SMARA must be implemented by the local lead agency with permitting responsibility for the proposed mining project.

### **3.15.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES**

#### **SACRAMENTO COUNTY ZONING CODE TITLE II, ARTICLE 4, SURFACE MINING (ADOPTED BY THE CITY OF RANCHO CORDOVA)**

The County has adopted its own SMARA ordinance, which is modeled after the state's SMARA guidelines (see above). The County's SMARA ordinance is designed to protect mineral resources from incompatible land uses, to manage the mineral resources, to assure the county of an adequate supply of these resources with due consideration for the environment, and to provide for the restoration of mined lands for future use. A Conditional Use Permit is required for surface-mining operations in Sacramento County. The City of Rancho Cordova adopted this ordinance upon incorporation in 2003.

#### **SACRAMENTO COUNTY GRADING ORDINANCE (ADOPTED BY THE CITY OF RANCHO CORDOVA)**

The County has enacted a Land Grading and Erosion Control Ordinance (County Code, Title 16, Chapter 16.44) for the purpose of minimizing damage to surrounding properties and public rights-of-way; limiting degradation of the water quality of watercourses; and curbing the disruption of drainage system flow caused by the activities of clearing, grubbing, grading, filing, and excavating land. The ordinance includes administrative procedures, minimum standards of review, and implementation and enforcement procedures for the control of erosion and sedimentation that are directly related to land-grading activities. The City of Rancho Cordova adopted this ordinance upon incorporation in 2003.

## 3.15.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

### 3.15.4.1 THRESHOLDS OF SIGNIFICANCE

Impacts to geology, soils, or mineral resources are considered significant if implementation of the proposed project or alternatives under consideration would do any of the following:

- Result in substantial erosion or unstable soil conditions from excavation grading or fill;
- Expose people or property to seismic hazards including fault rupture on active faults, seismic ground shaking, or seismically induced ground failure, including liquefaction;
- Expose persons or property to geologic hazards such as landslides, land subsidence, or expansive soils; or
- Result in the loss of availability of known mineral resources that would be of future value to the region.

### 3.15.4.2 ANALYSIS METHODOLOGY

Effects associated with geology, soils, and mineral resources that could result from project construction and operational activities were evaluated qualitatively based on expected construction practices; materials, locations, and duration of project construction and related activities; and a review of published geologic literature including maps, books, and journal articles.

### 3.15.4.3 IMPACT ANALYSIS

*Impact 3.15-1 - Potential temporary, short-term construction-related erosion. Construction activities during implementation would involve extensive grading and movement of earth, which could expose soils to erosion and result in the loss of topsoil.*

**Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative** - Implementation would include substantial construction activity, including soil removal, trenching, pipe installation, fabrication of concrete channels, grading, and revegetation. Construction activities would result in the temporary disturbance of soil and would expose disturbed areas to winter storm events. Rain of sufficient intensity could dislodge soil particles from the soil surface. Once particles are dislodged and the storm is large enough to generate runoff, localized erosion could occur. In addition, soil disturbance during the summer months could result in loss of topsoil because of wind erosion. **A direct, potentially significant impact from soil erosion could result from construction activities associated with the project. No indirect impacts would result.**

**Mitigation Measure 3.15-1: Prepare and Implement a Grading and Erosion Control Plan.**

A grading and erosion control plan will be prepared by a California Registered Civil Engineer retained by the project applicant(s) for grading work. The grading and erosion control plan will be submitted to the City Public Works Department before issuance of grading permits for all new development within the area of analysis. The plan will be consistent with the City's Land Grading and Erosion Control Ordinance as well as the City's National Pollutant Discharge Elimination System (NPDES) permit and will include

the site-specific grading associated with development. The plan will include the location, implementation schedule, and maintenance schedule of all erosion and sediment control measures, a description of measures designed to control dust and stabilize the construction-site road and entrance, and a description of the location and methods of storage and disposal of construction materials. Erosion and sediment control measures could include the use of detention basins, berms, swales, wattles, and silt fencing. Stabilization of construction entrances to minimize trackout (control dust) is commonly achieved by installing filter fabric and crushed rock to a depth of approximately 1 foot. The project applicant(s) will ensure that the construction contractor is responsible for securing a source of transportation and deposition of excavated materials.

**Impact 3.15-2 – Potential damage to structures from seismic activity and related geologic hazards.** *The area of analysis is located in an area of low seismic activity and structures at the sites would be designed in accordance with CBC standards.*

**Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative** – All three alternatives would include construction of new structures. The structures are not located in a known fault zone, no faults known to be active within Holocene time are located within 30 miles of the area of analysis; therefore, the potential for surface rupture to cause damage to proposed structures is negligible. Although potential damage to people or structures from seismic ground shaking could be a concern, compliance with the CBC would require the site's seismic-design response spectrum to be established and incorporated into the design of all new residences and buildings. Roadways, utilities, and structures would be designed to withstand seismic forces per CBC requirements for Seismic Zone 3. Furthermore, potential hazards associated with liquefaction would be negligible because the area of analysis has a fairly deep groundwater table, soils are relatively stable, the area of analysis is not located in a landslide hazard area, and potential sources of seismic activity are a relatively long distance away. Potential damage to structures from seismic activity and related geologic hazards would be a **less-than-significant, direct impact**. **No indirect impacts** would result.

**Mitigation Measure 3.15-2:** No mitigation measures are required.

**Impact 3.15-3 – Potential damage to structure from construction on unstable soils.** *Portions of the area of analysis are underlain by soils that have a moderate to high potential for expansion when wet, or are underlain by piles of unstable cobbles and slickens soils from dredge mining activities. Construction in any of these soils may cause foundation movements that can cause damage to overlying structures.*

**Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative** – Expansive soils shrink and swell as a result of moisture change. These volume changes in the soil can result in damage over time to building foundations, underground utilities, and other subsurface facilities if they are not designed and constructed appropriately. All three alternatives would include construction of new structures. Portions of the area of analysis are underlain by clayey soils with moderate to high shrink-swell potential as identified in Table 3.15-2. Soil expansion could pose problems for foundation design, and could adversely affect interior slabs-on-grade and landscaping hardscape. This would be a **potentially significant, indirect impact**. **No direct impacts** would result.

**Mitigation Measure 3.15-3a:** Prepare a Geotechnical Study and Implement Recommendations.

Before the approval of grading plans, a final geotechnical subsurface investigation report will be prepared for the proposed development. The final geotechnical engineering report will address and

make recommendations on the following:

- site preparation;
- appropriate sources and types of fill;
- potential need for soil amendments;
- road, pavement, and parking areas;
- structural foundations, including retaining wall design;
- grading practices;
- erosion/winterization;
- special problems discovered on-site (e.g., groundwater and expansive/unstable soils); and
- slope stability.

The geotechnical investigation will include subsurface testing of soil and groundwater conditions and determine appropriate foundation designs that are consistent with the CBC. If the soils report indicates the presence of critically expansive soils or other soil problems that would lead to structural defects if not corrected, additional investigations may be required for subdivisions before building permits are issued. This will be so noted on the project grading plans. Recommendations contained in the geotechnical engineering report will be noted on the grading plans and implemented as appropriate before the issuance of building permits. Design and construction of all new development will be in accordance with the CBC and the City Land Grading and Erosion Control Ordinance.

**Mitigation Measure 3.15-3b: Ensure On-Site Monitoring by a Geotechnical Engineer.**

All earthwork shall be monitored by a geotechnical engineer retained by the project applicant(s). The geotechnical engineer shall provide oversight during all excavation, placement of fill, and disposal of materials removed from and deposited on the subject sites and other sites. Before export/import of any soil to/from an off-site location, the project applicant(s) shall obtain a grading permit from the City Public Works Department.

**Impact 3.15-4 – Loss of mineral resources.** *The area of analysis is located within an area designated by CDMG and is classified as MRZ-3, an area containing mineral deposits, the significance of which cannot be evaluated from existing data.*

**Proposed Alternative, Reduced Footprint Alternative, and No Action Alternative –** Implementation of any of the three alternatives would result in developing land and foregoing the potential mineral resources. Mineral resources located directly below the development would be unavailable for mining. Because the area of analysis is designated MRZ-3, an area without identified mineral deposits, there is a **less than significant, direct** impact, and **no indirect** impacts would occur.

**Mitigation Measure 3.15-4: No mitigation measures are required.**

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## 3.16 CLIMATE CHANGE

This section describes the affected environment, regulatory framework, environmental consequences of the alternatives and mitigation of potential consequences with respect to potential climate change effects from greenhouse gas (GHG) emissions.

### 3.16.1 AREA OF ANALYSIS

The Sunridge Specific Plan Area, which is comprised of a total of nine residential developments, is located in the City of Rancho Cordova within Sacramento County. As discussed earlier, only six of the nine properties are addressed in this EIS. For the purposes of evaluating the Project's effect on GHG emissions, the six parcels were considered together as one analysis area.

Development of any of the Sunridge Properties would involve construction equipment, haul trucks, and employee traffic that would generate GHG emissions. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; however, it is recognized that no single project alone would measurably contribute to a noticeable incremental change in the global average temperature. Therefore, even though GHGs are global pollutants (as discussed in the Affected Environment Section below), the impacts associated with GHG emissions from the alternatives are considered on a regional, state, and national level (as appropriate).

### 3.16.2 AFFECTED ENVIRONMENT

GHGs refer to a group of compounds present in the earth's atmosphere that regulate temperature and climate by trapping a portion of the infrared radiation from the sun. The principal GHGs are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and water vapor (H<sub>2</sub>O). CO<sub>2</sub> is the most predominant GHG in the Earth's atmosphere, and is therefore used as the baseline for determining the global warming potential (GWP) of the other GHGs (carbon dioxide equivalents; CO<sub>2</sub>e)<sup>1</sup>. These GHGs are produced via natural processes as well as human activities (e.g., combustion of fossil fuels).

Since the industrial revolution, there has been a significant increase in the amount of GHGs emitted into the atmosphere. Research has shown that this exponential increase in GHG emissions from human activities has contributed to rapid global climate change. Global climate change, also known as global warming, is a change in the average weather on earth that can be measured by wind patterns, storms, precipitation and temperature. Although there is disagreement as to the speed of global warming and the extent of the impacts attributable to human activities, most agree that there is a direct link between increased emissions of GHGs and global temperature variations.

Unlike criteria air pollutants and toxic air contaminants, which are pollutants of concern on a regional and statewide scale, GHGs are global pollutants. This is because GHGs persist in the atmosphere for long enough time periods (e.g., several years) to be dispersed around the globe, resulting in widespread climate change impacts. For example, climate change resulting from global GHG emissions could impact the natural environment in California in the following ways, among others:

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<sup>1</sup> Carbon dioxide equivalency is a quantity that describes, for a given mixture and amount of greenhouse gas, the amount of CO<sub>2</sub> that would have the same global warming potential (GWP), when measured over a specified timescale. GWP is a measure of how much a given mass of greenhouse gas is estimated to contribute to global warming. It is a relative scale which compares the greenhouse gas in question to that of the same mass of CO<sub>2</sub> (whose GWP is by definition 1).

- Rising sea levels along the California coastline, particularly along San Francisco's coastline and bayside and the Sacramento-San Joaquin Delta due to ocean expansion and melting snowpack in the Sierra Nevada;
- Extreme-heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent;
- An increase in heat-related human deaths, infectious diseases, and a higher risk of respiratory problems caused by deteriorating air quality;
- Reduced snow pack and stream flow in the Sierra Nevada, affecting winter recreation and water supplies;
- Potential increase in the severity of winter storms, affecting peak stream flows and flooding;
- Changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield; and
- Changes in distribution of plant and wildlife species due to changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.

These changes in California's climate and ecosystems are occurring at a time when California's population is expected to increase from 34 million to 59 million by the year 2040 (California Energy Commission [CEC], 2005).

## **STATE OF CALIFORNIA**

Worldwide, California is the 12th to 16th largest emitter of CO<sub>2</sub>, and is responsible for approximately 2% of the world's CO<sub>2</sub> emissions (CEC, 2006). Transportation is responsible for 38% of the state's GHG emissions, followed by electricity generation (22%), the industrial sector (21%), agriculture and forestry (6%), residential (6%), and other sources (6%). Emissions of CO<sub>2</sub> and N<sub>2</sub>O are byproducts of fossil fuel combustion, among other sources. CH<sub>4</sub>, a highly potent GHG, results from off-gassing associated with agricultural practices and landfills, among other sources. Sinks of CO<sub>2</sub> include uptake by vegetation and dissolution into the ocean. California GHG emissions in 2006 totaled approximately 485 million metric tons of CO<sub>2</sub>e (CEC, 2009).

## **SACRAMENTO COUNTY**

Table 3.16-1 shows CO<sub>2</sub>e emissions in Sacramento County by sector. Almost half of the emissions result from the transportation sector. Off-road equipment such as construction equipment falls under the "other" category, which is approximately 12% of the emissions in Sacramento County.

<b>Table 3.16-1 Carbon Dioxide Equivalent Emissions by Sector in Sacramento County</b>		
<b>Sector</b>	<b>Metric Tons CO<sub>2</sub>e</b>	<b>Percent<sup>1</sup></b>
Transportation	6,731,929	48.3
Commercial & Industrial	2,292,627	16.5
Residential	2,439,527	17.5
Waste	741,528	5.3
Other <sup>2</sup>	1,729,016	12.4
Source: SMAQMD (2009)		
<sup>1</sup> Total emissions in Sacramento County are 13,934,627 metric tons CO <sub>2</sub> e. Data year not specified.		
<sup>2</sup> This category includes off-road equipment, high global warming potential gases, industrial-specific, agriculture, wastewater treatment, and the Sacramento International Airport.		
CO <sub>2</sub> e = carbon dioxide equivalent		

### 3.16.3 REGULATORY FRAMEWORK

Climate change associated with GHG emissions is addressed through the efforts of various Federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to reduce climate change impacts through legislation, regulations, planning, and policy-making aimed at regulating GHG emissions. The agencies and legislation responsible for regulating GHG emissions are discussed below.

#### 3.16.3.1 FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

##### THE CLEAN AIR ACT

The United States Environmental Protection Agency (USEPA) is the Federal agency responsible for implementing the Federal Clean Air Act (CAA). In *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court of the United States ruled that the USEPA has the authority to regulate GHGs under the Clean Air Act. The Court held that the USEPA must determine whether or not GHG emissions from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the USEPA Administrator is required to follow the language of §202(a) of the Clean Air Act. If the USEPA found that GHGs posed a danger to public health and welfare, the USEPA would be obligated to take steps to reduce GHG pollutants. On December 15, 2009, the USEPA released the final Endangerment Finding, which officially declared that the mix of atmospheric concentrations of six key, well-mixed GHGs threatens both the public health and the public welfare of current and future generations. These six GHGs are: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>). The Endangerment Finding became effective January 14, 2010.

The Endangerment Finding does not create regulations, but it lays a foundation for regulatory action under the Clean Air Act. On September 30, 2009 (prior to the Endangerment Finding), the USEPA introduced a 416-page proposal (“the Tailoring Rule”) which outlined how the Clean Air Act can be effectively applied to regulate GHGs. The Tailoring Rule will require large industrial facilities that emit more than a specified amount of CO<sub>2</sub>e a year to obtain construction and operating permits for the release of the emissions and demonstrate they are using the best available control technologies and energy



efficiency measures to minimize GHG emissions. The final Tailoring Rule, which was released May 13, 2010, targets facilities that emit more than 75,000 to 100,000 tons of CO<sub>2</sub>e a year from stationary sources. Therefore, the Proposed Project Alternative would not be subject to the Tailoring Rule.

## **THE USEPA MANDATORY REPORTING RULE**

In response to the FY2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110–161), the USEPA has issued the Final Mandatory Reporting of Greenhouse Gases Rule (“the USEPA Reporting Rule”). The USEPA Reporting Rule was signed by the USEPA Administrator on September 22, 2009 and went into effect December 29, 2009. The Rule requires annual reporting of GHG emissions from large source emitters (e.g., facilities that emit 25,000 metric tons or more of CO<sub>2</sub>e per year from stationary sources) and fossil fuel and industrial gas suppliers in the United States. Based on these requirements, the Proposed Project Alternative will not be subject to the USEPA Mandatory Reporting Rule.

### **3.16.3.2 STATE PLANS, POLICIES, REGULATIONS, AND LAWS**

#### **CALIFORNIA ASSEMBLY BILL (AB) 1493**

AB 1493 required the California Air Resources Board (CARB) to develop and adopt the nation’s first GHG emission standards for automobiles. The legislature declared in AB 1493 that global warming was a matter of increasing concern for public health and environment in the state. It cited several risks that California faces from climate change, including reduction in the state’s water supply, increased air pollution creation by higher temperatures, harm to agriculture, increase in wildfires, damage to the coastline, and economic losses caused by higher food, water energy, and insurance prices.

#### **CALIFORNIA EXECUTIVE ORDER S-3-05**

California Executive Order S-3-05 established the following GHG emission reduction targets for California:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80% below 1990 levels.

#### **CALIFORNIA ASSEMBLY BILL (AB) 32**

AB 32, the Global Warming Solutions Act of 2006, codifies the state’s GHG emissions target by requiring the state’s global warming emissions to be reduced to 1990 levels by 2020, and directs CARB to enforce the statewide cap that would begin in 2012. AB 32 was signed and passed into law by Governor Arnold Schwarzenegger on September 27, 2006. Key AB 32 milestones were outlined as follows:

- June 30, 2007 - Identification of “discrete” early action GHG emissions reduction measures.
- January 1, 2008 - Identification of the 1990 baseline GHG emissions level and approval of a statewide limit equivalent to that level. Adoption of reporting and verification requirements concerning GHG emissions.

- January 1, 2009 - Adoption of a scoping plan for achieving GHG emission reductions.
- January 1, 2010 - Adoption and enforcement of regulations to implement the “discrete” actions.
- January 1, 2011 - Adoption of GHG emission limits and reduction measures by regulation.
- January 1, 2012 - GHG emission limits and reduction measures adopted in 2011 become enforceable.

As shown above, AB 32 requires CARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020 (representing an approximate 30% reduction in emissions).

## **THE MANDATORY GHG REPORTING REGULATION**

The Mandatory GHG Reporting Regulation, which was developed under AB 32, was approved by CARB in December of 2007. The Mandatory GHG Reporting Regulation requires specific facilities that are located and/or operate in California to report and verify their annual GHG emissions in 2009 and every year thereafter. Such facilities include cement plants, oil refineries, electric generating facilities/providers, co-generation facilities, hydrogen plants, and other stationary combustion sources that emit more than 25,000 metric tons of CO<sub>2</sub>e per year. Based on these requirements, the project will not be subject to the CARB Mandatory GHG Reporting Regulation.

## **SENATE BILL (SB) 97**

SB 97 mandated that the Governor’s Office of Planning and Research (OPR) amend the California Environmental Quality Act (CEQA) Guidelines to address impacts from GHGs. In compliance with this requirement, OPR released Preliminary Draft CEQA Guideline Amendments in January 2009 and forwarded the draft Guideline Amendments to the Natural Resources Agency in April 2009. The Natural Resources Agency transmitted the adopted amendments and the entire rulemaking file to the Office of Administrative Law (OAL) on December 31, 2009. On February 16, 2010, the OAL approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The Amendments became effective on March 18, 2010 and were included in the 2010 CEQA Statutes and Guidelines.

## **CEQA STATUTES AND GUIDELINES**

The 2010 CEQA Statutes and Guidelines do not establish specific thresholds for determining the significance of GHG emissions; however the 2010 CEQA Statutes and Guidelines do provide a framework for local CEQA agencies to use to identify the extent GHG emissions impact the environment. The CEQA Statutes and Guidelines state that, “[a] lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

1. Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or

2. Rely on a qualitative analysis or performance based standards.

A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

1. The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions.”

### **3.16.3.3 REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS**

#### **SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT (SMAQMD)**

The SMAQMD updated and released their “CEQA Guide for Air Quality Assessment” in December 2009 (December 2009 CEQA Guide). The December 2009 CEQA Guide provides methods to review air quality impacts from development projects, screening approaches, methods for calculating emissions, and mitigation measures. Lead CEQA Agencies are being requested to utilize the December 2009 CEQA Guide beginning January 1, 2010, for all projects that have not released a draft environmental document for public review on or before that date.

Similar to the draft CEQA Guide for Air Quality Assessment released for public comment in July 2009, the December 2009 CEQA Guide recommends that lead agencies should quantify the GHG emissions anticipated to be generated by the project. Direct and indirect emissions of GHGs from the project, which include construction emissions, area- and mobile-source emissions, and indirect emissions from in-state energy production and water consumption (energy for conveyance, treatment, distribution, and wastewater treatment), should be quantified and disclosed.

SMAQMD-recommended methodologies for quantifying construction and direct operational GHGs include using the Urban Land Use Emissions Model (URBEMIS) for proposed land use development. For indirect operational GHG emissions, SMAQMD recommends using the California Climate Action Registry (CCAR) General Reporting Protocol (GRP) and information provided by the CEC to determine GHG emissions associated with electricity and water usage. SMAQMD allows the default values to be used in the models and informational sources if required project-specific information is not available. Lead agencies should report the project's total GHG emissions in units of metric tons of CO<sub>2</sub>e.

The December 2009 CEQA Guide does not provide a quantitative GHG emissions threshold to determine if a project will have a significant impact on climate change. Instead, the December 2009 CEQA Guide states that the thresholds of significance for GHG emissions should be related to AB 32's GHG reduction goals.

#### **SACRAMENTO COUNTY**

Sacramento County's Board of Supervisors has approved the first phase of a Climate Action Plan (CAP) that will provide a framework for reducing GHG emissions and manage their resources in order to comply

with state mandates (SMAQMD, 2009). The first phase focuses on the County's overall strategy and goals for addressing climate change. It also highlights actions already taken to become more efficient, and targets future steps that will ensure a more sustainable Sacramento now and in the future. Key goals in the first phase include a reduction in vehicle miles traveled (VMT) per capita in the region; improving energy efficiency of all existing and new buildings; emphasizing water use efficiency as a way to reduce energy consumption; maximizing waste diversion, composting, and recycling through residential and commercial programs; and protecting important farmlands and open space from conversion and encroachment, and maintaining connectivity of protected areas.

## **CITY OF RANCHO CORDOVA**

The City of Rancho Cordova General Plan, which was completed on June 26, 2006, does not contain any goals or policies that relate directly to climate change or GHGs. Also, the City of Rancho Cordova has not developed a CAP or similar GHG emissions reduction plan for GHG emission-generating activity in its jurisdiction. However, the preparation of a CAP is being considered by the City Council under an Energy Efficiency and Conservation Block Grant funded by the American Recovery and Reinvestment Act (City of Rancho Cordova, 2009).

### **3.16.4 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES**

This section describes the potential impacts from the alternatives related to GHG emissions. The primary issues and concerns for this project include: 1) Exceedance of regulatory GHG emissions thresholds due to construction-related emissions, 2) Exceedance of GHG emissions thresholds due to increased vehicle traffic- and operation-related emissions, and 3) Non-conformance with GHG policies on the Federal, state, or regional level.

#### **3.16.4.1 THRESHOLDS OF SIGNIFICANCE**

While none of the Federal, state, or regional plans, policies, regulations, or laws provide a definitive quantitative threshold for GHG emissions for this type of project, the Council on Environmental Quality (CEQ) has drafted a guidance document for Federal agencies to use in their preparation of NEPA documents. On February 18, 2010, the CEQ released a memorandum entitled, "Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions" ("Draft NEPA Guidance"), which discusses ways Federal agencies can improve their consideration of the effects of GHG emissions and climate change in their evaluation of proposals for Federal actions under NEPA. The Draft NEPA Guidance states that the environmental analysis and documents produced in the NEPA process should provide the decision maker with relevant and timely information about (1) the GHG emissions effects of a proposed action and alternative actions, and (2) the relationship of climate change effects to a proposed action or alternatives, including the relationship to proposal design, environmental impacts, mitigation, and adaptation measures.

Specifically, if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of CO<sub>2</sub>e emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public. CEQ does not propose this as an indicator of a threshold of significant effects, but rather as an indicator of a minimum level of GHG emissions that may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs.

Taking into consideration current laws and regulations and, in particular, the CEQ's Draft NEPA Guidance, the following thresholds of significance are recommended and were used for this analysis:

1. GHGs resulting from the implementation of the project may have a significant impact if it is anticipated that the project would cause direct emissions of 25,000 metric tons of CO<sub>2</sub>e or more on an annual basis.

This quantitative threshold is based on recommendations provided in the Draft NEPA Guidance. However, CEQ does not propose 25,000 metric tons or more of direct CO<sub>2</sub>e emissions on an annual basis as an indicator of a threshold of significant effects, but rather as an indicator of a minimum level of GHG emissions that may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs. In other words, if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons of CO<sub>2</sub>e or more on an annual basis, agencies should consider this as an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public.

2. GHGs resulting from the implementation of the project would be considered to have a significant impact if the project would conflict with or obstruct implementation of GHG reduction measures or goals under AB 32.

This qualitative threshold is based on the December 2009 CEQA Guide, which states the thresholds of significance for GHG emissions should be related to AB 32's GHG reduction goals.

### **3.16.4.2 ANALYSIS METHODOLOGY**

#### **GHG QUANTIFICATION**

The Draft NEPA Guidance proposes that agencies should consider quantifying the GHG emissions associated with a project using one or more of the following GHG emission reporting protocols, as appropriate:

- For quantification of emissions from large direct emitters: US EPA Mandatory Reporting of GHGs Rule.
- For quantification of Scope 1 emissions at Federal facilities: GHG accounting and reporting guidance that will be issued under Executive Order 13514.
- For quantification of emissions and removals from terrestrial carbon sequestration and various other project types: US Department of Energy Technical Guidelines.

Based on the nature of the alternatives, none of these GHG emission reporting protocols would apply. Therefore, as recommended by the Draft NEPA Guidance, the GHG emissions were evaluated using the best available procedures outlined by an applicable agency. Specifically, construction GHG emissions and direct and indirect operational GHG emissions associated with the alternatives were estimated using the recommended methodology outlined in the SMAQMD December 2009 CEQA Guide. Please note that even though indirect GHG emissions for the three alternatives were quantified, the Draft NEPA Guidance only considers direct GHG emissions when determining if a project exceeds the recommended threshold of 25,000 metric tons of CO<sub>2</sub>e or more on an annual basis.

SMAQMD-recommended methodologies for quantifying construction and direct operational GHGs for proposed land use development projects are based on the use of the URBEMIS 2007 model (version 9.2.4). To quantify potential construction emissions, the land use data for the three alternatives presented in Section 2.4 of this DEIS (Table 2-1 and Table 2-2) and the anticipated buildout period for the project (assumed a 5-year buildout period to be very conservative) were input into URBEMIS 2007. The direct

GHG emissions for the three alternatives, which include mobile and area sources, were quantified in the URBEMIS 2007 model based on the land use data for the three alternatives (Table 2-1 and Table 2-2) and the associated average daily trips. As discussed in Section 3.7 of this DEIS, for each single family home built, there are approximately 8.98 daily trips (3,258 single family homes divided by 29,241 daily trips). The daily trips associated with the parks and commercial spaces outlined in the three alternatives were determined using URBEMIS 2007 default values based on the acreage presented in Table 2-1 and Table 2-2. Area source emissions (use of natural gas, landscaping, and architectural coatings), were also determined using URBEMIS 2007 and the land use information for the three alternatives presented in Table 2-1 and Table 2-2.

For indirect operational GHG emissions (direct electricity usage and electricity usage associated with water usage), SMAQMD recommends using the CCAR GRP and information provided by the CEC. The annual direct electricity usage for the three alternatives was estimated using factors from the CEC (e.g., average electricity usage per year per household). The annual electricity usage associated with water usage was estimated using the anticipated annual water usage for the three alternatives (0.224 million gallons of water per household: Section 3.3, page 3.3-20) and electricity usage factors based on water usage provided by the CEC (e.g., average kwh per million gallons of water usage). Once the electricity usage was determined (direct electricity usage and electricity usage associated with water usage), emission factors and equations contained in the CCAR GRP were used to estimate the annual GHG emissions in metric tons of CO<sub>2</sub>e.

## **COMPLIANCE WITH AB 32**

AB 32 requires CARB to design and implement emission limits, regulations, and other measures, so that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020 (representing an approximate 30% reduction in GHG emissions). In order to achieve CARB's GHG emissions reduction goals, CARB has recommended the implementation of 44 early actions to reduce GHG emissions under AB 32. As outlined in the AB 32 timeline, all of these measures need to be in place and operative by January 1, 2012. Therefore, evaluating the project to ensure that it will comply with CARB's 44 early actions will be a qualitative measure to determine if the project conflicts with or obstructs implementation of GHG reduction measures or goals under AB 32.

Moreover, to avoid potentially conflicting with or obstructing the implementation of the GHG reduction measures or goals under AB 32, mitigation measures should be implemented that reduce GHG emissions to the extent feasible with respect to the state's progress (at the time) toward meeting GHG emissions reductions required by AB 32.

This section describes the project's potential impacts on climate change associated with GHG emissions. By using URBEMIS 2007 and the informational sources as outlined in the SMAQMD December 2009 CEQA Guide, the GHG emissions estimates for the Proposed Project Alternative, Reduced Footprint Alternative, and the No Action Alternative are outlined in Table 3.16-2. A complete printout of the URBEMIS 2007 modeling runs can be found in Appendix F.

<b>Table 3.16-2</b> <b>Estimated GHG Emissions for the Alternatives</b> <b>(CO<sub>2</sub>e Emissions in metric tons per year)</b>			
<b>Emissions Source</b>	<b>Proposed Project Alternative</b>	<b>Reduced Footprint Alternative</b>	<b>No Action Alternative</b>
<b>Construction</b>			
Construction Activities	<b>12,290</b>	<b>10,350</b>	<b>8,240</b>
<b>Operations (Direct Emissions)</b>			
Area Source Emissions	13,387	10,470	8,325
Motor Vehicles	44,095	36,990	28,560
Total Direct Emissions	<b>57,482</b>	<b>47,460</b>	<b>36,885</b>
<b>Operations (Indirect Emissions)</b>			
Electricity Usage <sup>1</sup>	13,814	11,301	8,141
Water Usage <sup>2</sup>	1,436	1,107	908
Total Indirect Emissions	<b>15,250</b>	<b>12,408</b>	<b>9,049</b>
<b>Sources and Assumptions:</b> <sup>1</sup> Electricity usage per household and square foot of commercial space provided by CEC: 9,250 kwh per household per yr, 17 kwh per square foot of commercial space. GHG emission factors from CCAR GRP (Table C.2). <sup>2</sup> Water usage per household from Section 3.3, page 3.3-20 (0.244 million gallons per household per year). a) Number of households, square feet of commercial space, and park acreage based on Table 2-1 and Table 2-2. b) Assumed buildout would be approximately five years (very conservative assumption).			

### 3.16.4.3 IMPACT ANALYSIS

**IMPACT 3.16-1 – Short-term increase in construction-related GHG emissions.** *Activities associated with the construction of single family homes and associated infrastructure may result in the temporary generation of GHG emissions.*

Activities associated with the construction of single family homes and associated infrastructure under any of the three alternatives would result in the temporary generation of GHG emissions. These emissions would result from construction activities, including construction worker commute trips and mobile and stationary construction equipment exhaust.

**Proposed Project Alternative–** Based on the data shown in Table 3.16-2, GHG emissions associated with construction of 3,258 single family homes and associated infrastructure (e.g., parks and commercial space) under the Proposed Project Alternative would be approximately 12,290 metric tons of CO<sub>2</sub>e per year. As stated in Section 3.16.4.1 (Thresholds of Significance), GHGs resulting from the implementation of the project may have a significant impact if it is anticipated that the project would cause direct emissions of 25,000 metric tons or more of CO<sub>2</sub>e emissions on an annual basis. Therefore, the short-term increase in construction-related GHG emissions for the Proposed Project Alternative would be **less than significant**.

**Reduced Footprint Alternative–** Based on the data shown in Table 3.16-2, GHG emissions associated with construction of 2,511 single family homes and associated infrastructure (e.g., parks and commercial space) under the Reduced Footprint Alternative would be approximately 10,350 metric tons of CO<sub>2</sub>e per year. Therefore, the short-term increase in construction-related GHG emissions for the Reduced Footprint Alternative would be **less than significant**.

**No Action Alternative** – Based on the data shown in Table 3.16-2, GHG emissions associated with construction of 2,060 single family homes and associated infrastructure (e.g., parks and commercial space) under the No Action Alternative would be approximately 8,240 metric tons of CO<sub>2</sub>e per year. Therefore, the short-term increase in construction-related GHG emissions for the No Action Alternative would be **less than significant**.

**IMPACT 3.16-2 – Long-term increase in GHG emissions.** *Activities associated with project build-out and operations in the project area may result in increased GHG emissions.*

**Proposed Project Alternative**– As shown in Table 3.16-2, the direct GHG emissions associated with operations outlined under the Proposed Project Alternative would be approximately 57,482 metric tons of CO<sub>2</sub>e per year. As discussed in Section 3.16.4.1 (Thresholds of Significance), GHGs resulting from the implementation of the project may have a significant impact if it is anticipated that the project would cause direct emissions of 25,000 metric tons or more of CO<sub>2</sub>e emissions on an annual basis. However, as stated in the Draft NEPA Guidance, “The reference point of 25,000 metric tons of direct CO<sub>2</sub>e GHG emissions may provide agencies with a useful indicator – rather than an absolute standard of insignificant effects for agencies’ action-specific evaluation of GHG emissions and disclosure of that analysis in their NEPA documents. CEQ does not propose this as an indicator of a threshold of significant effects, but rather as an indicator of a minimum level of GHG emissions that may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs.” In other words, if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons of CO<sub>2</sub>e or more on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public.

To comply with the Draft NEPA Guidance, a quantitative and qualitative assessment for the Proposed Project Alternative is included throughout this Climate Change section. In addition, to reduce the long-term operation-related GHG emissions for the Proposed Project Alternative as much as possible, Mitigation Measure 3.16-1 would be implemented as recommended in the SMAQMD December 2009 CEQA Guide. Therefore, the long-term increase in operation-related GHG emissions for the Proposed Project Alternative would be **less than significant with mitigation**.

**Reduced Footprint Alternative** – Under the Reduced Footprint Alternative, only 2,511 single family homes would be constructed. As shown in Table 3.16-2, this reduction in housing would result in direct GHG operational emissions of approximately 47,460 metric tons of CO<sub>2</sub>e per year.

To comply with the Draft NEPA Guidance, a quantitative and qualitative assessment for the Reduced Footprint Alternative is included throughout this Climate Change section. In addition, to reduce the long-term operation-related GHG emissions for the Reduced Footprint Alternative as much as possible, Mitigation Measure 3.16-1 would be implemented as recommended in the SMAQMD December 2009 CEQA Guide. Therefore, the long-term increase in operation-related GHG emissions for the Reduced Footprint Alternative would be **less than significant with mitigation**.

**No Action Alternative** - Under the No Action Alternative, only 2,060 single family homes would be constructed. Also, the park and commercial space acreage would be reduced as shown in Table 2-1. Based on this reduction in housing and park and commercial space acreage, the direct GHG emissions associated with operations outlined under the No Action Alternative would be approximately 36,885 metric tons of CO<sub>2</sub>e per year (Table 3.16-2).

To comply with the Draft NEPA Guidance, a quantitative and qualitative assessment for the No Action Alternative is included throughout this Climate Change section. In addition, to reduce the long-term operation-related GHG emissions for the No Action Alternative as much as possible, Mitigation Measure



3.16-1 will be implemented as recommended in the SMAQMD December 2009 CEQA Guide. Therefore, the long-term increase in operation-related GHG emissions for the No Action Alternative would be **less than significant with mitigation**.

**Mitigation Measure 3.16-2: Implement Additional Measures to Reduce Operational GHG Emissions.**

**Proposed Project Alternative, Reduced Footprint Alternative, and the No Action Alternative** – For each increment of new development, it is anticipated that the project applicant(s) will incorporate in the project design, to the extent feasible, GHG reduction measures recommended by the City of Rancho Cordova. Furthermore, it is anticipated that the project applicant(s) will coordinate directly with the City to identify which GHG reduction measures are feasible and which are considered infeasible. The City retains discretionary approval authority to determine the project applicant(s) compliance with the GHG reduction measures for the applicable increment of development.

The City’s list of potentially feasible GHG reduction measures will be developed based upon consideration of the SMAQMD’s Guidance for GHG Reduction prepared as part of the SMAQMD December 2009 CEQA Guide (CEQA, 2009). The current GHG reduction measures provided in the SMAQMD’s Guidance for GHG Reduction is not intended to be exhaustive, as GHG emission reduction strategies and their respective feasibility are likely to evolve over time. Based on the land uses of the Proposed Project Alternative, the Reduced Footprint Alternative, and the No Action Alternative, the GHG reduction measures from SMAQMD’s current Guidance for GHG Reduction outlined in Table 3.16-3 should be considered for the list of potentially feasible GHG reduction measures (as applicable).

<b>Table 3.16-3 Potential GHG Reduction Measures</b>			
<b>SMAQMD Measure Number</b>	<b>Measure Name</b>	<b>Land Use Type<sup>1</sup></b>	<b>Description</b>
<b>Bicycle/Pedestrian/Transit Measures</b>			
1	Bike Parking	C, M	Non-residential projects provide plentiful short-term and long-term bicycle parking facilities to meet peak season maximum demand
2	End of Trip Facilities	C, M	Non-residential projects provide “end-of-trip” facilities including showers, lockers, and changing space
4	Proximity to Bike Path/Bike Lanes	R, C, M	Entire project is located within ½ mile of an existing Class I or Class II bike lane and project design includes a comparable network that connects the project uses to the existing off-site facility
5	Pedestrian Network	R, C, M	The project provides a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site.
6	Pedestrian Barriers Minimized	R, C, M	Site design and building placement minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, berms, landscaping, and slopes between residential and nonresidential uses that impede bicycle or pedestrian circulation are eliminated.

Table 3.16-3 Potential GHG Reduction Measures (continued)			
SMAQMD Measure Number	Measure Name	Land Use Type <sup>1</sup>	Description
<b>Bicycle/Pedestrian/Transit Measures</b>			
7	Bus Shelter for Existing Transit Service	R, C, M	Bus or streetcar service provides headways of one hour or less for stops within 1/4 mile; project provides safe and convenient bicycle/pedestrian access to transit stop(s) and provides essential transit stop improvements (i.e., shelters, route information, benches, and lighting).
8	Bus Shelter for Planned Transit Service	R, C, M	Project provides transit stops with safe and convenient bicycle/pedestrian access. Project provides essential transit stop improvements (i.e., shelters, route information, benches, and lighting) in anticipation of future transit service.
9	Traffic Calming	R, C, M	Project design includes pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements. Roadways are designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips by featuring traffic calming features.
<b>Parking Measures</b>			
10a	Paid Parking	R, C, M	Employee and/or customer paid parking system.
10b	Parking Cash Out	C, M	Employer provides employees with a choice of forgoing subsidized parking for a cash payment equivalent to the cost of the parking space to the employer.
11	Minimum Parking	R, C, M	Provide minimum amount of parking required. Special review of parking required.
12	Parking Reduction Beyond Code	R, C, M	Provide parking reduction less than code. Special review of parking required. Recommend a Shared Parking strategy.
13	Pedestrian Pathway through Parking	R, C, M	Provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances.
14	Off-Street Parking	R, C, M	Parking facilities are not adjacent to street frontage.
<b>Site Design Measures</b>			
15	Office/Mixed-Use Density	C, M	Project provides high density office or mixed-use proximate to transit.
16	Orientation Toward Existing Transit, Bikeway, or Pedestrian Corridor	R, C, M	Project is oriented towards existing transit, bicycle, or pedestrian corridor. Setback distance is minimized.

<b>Table 3.16-3 Potential GHG Reduction Measures (continued)</b>			
<b>SMAQMD Measure Number</b>	<b>Measure Name</b>	<b>Land Use Type<sup>1</sup></b>	<b>Description</b>
<b>Site Design Measures</b>			
17	Orientation Toward Existing Transit, Bikeway, or Pedestrian Corridor	C, M	Project is oriented towards planned transit, bicycle, or pedestrian corridor. Setback distance is minimized.
18	Residential Density	R	Project provides high-density residential development.
19	Street Grid	R, C, M	Multiple and direct street routing (grid style).
20	Neighborhood Electric Vehicle Access	R, C, M	Make physical development consistent with requirements for neighborhood electric vehicles.
21	Affordable Housing Component	R	Residential development projects of 5 or more dwelling units provide a deed-restricted low-income housing component on-site (as defined in Ch 22.35 of Sacramento County Ordinance Code) [Developers who pay into In-Lieu Fee Programs are not considered eligible to receive credit for this measure].
<b>Mixed-Use Measures</b>			
23	Suburban Mixed-Use	R, C, M	Have at least three of the following on-site and/or off-site within ¼ mile: Residential Development, Retail Development, Park, Open Space, or Office.
24	Other Mixed-Use	R, M	All residential units are within ¼ mile of parks, schools, or other civic uses.
<b>Building Component Measures</b>			
27b	Energy Star Roof	R, C, M	Install Energy Star labeled roof materials.
28	On-site Renewable Energy System	R, C, M	Project provides on-site renewable energy system(s).
29	Exceed Title 24	R, C, M	Project exceeds Title 24 requirements by 20%.
30	Solar Orientation	R	Orient 75 or more percent of homes and/or buildings to face either north or south (within 30 degrees of N/S).

<b>Table 3.16-3 Potential GHG Reduction Measures (continued)</b>			
<b>SMAQMD Measure Number</b>	<b>Measure Name</b>	<b>Land Use Type<sup>1</sup></b>	<b>Description</b>
<b>Building Component Measures</b>			
31	Non-Roof Surfaces	R, C, M	Provide shade (within 5 years) and/or use light-colored/high-albedo materials (reflectance of at least 0.3) and/or open grid pavement for at least 30% of the site's non-roof impervious surfaces, including parking lots, walkways, plazas, etc.; OR place a minimum of 50% of parking spaces underground or covered by structured parking; OR use an open-grid pavement system (less than 50% impervious) for a minimum of 50% of the parking lot area. Unshaded parking lot areas, driveways, fire lanes, and other paved areas have a minimum albedo of .3 or greater.
32	Green Roof	R, C, M	Install a vegetated roof that covers at least 50% of roof area.
<b>TDM and Misc. Measures</b>			
33	Transportation Management Association Membership	R, C, M	Include permanent TMA membership and funding requirement. Funding to be provided by Community Facilities District or County Service Area or other non-revocable funding mechanism.
34	Electric Lawnmower	R	Provide a complimentary electric lawnmower to each residential buyer.
<sup>1</sup> R = Residential, C= Commercial, M = Manufacturing Source: SMAQMD's Guidance for GHG Reduction			

**IMPACT 3.16-3 – Potential to conflict with or obstruct implementation of GHG reduction measures or goals under AB 32.** *All three project alternatives may result in an increase in short-term and long-term GHG emissions.*

**Proposed Project Alternative, Reduced Footprint Alternative, and No Action Alternative** – AB 32 requires CARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide GHG emissions are reduced to 1990 levels by 2020 (representing an approximate 30% reduction in GHG emissions). Under all three alternatives, short-term and long-term GHG emissions would be emitted, potentially conflicting with or obstructing the implementation of the GHG reduction measures or goals under AB 32.

#### CARB's 44 Early Action Strategies

In order to achieve CARB's GHG emissions reduction goals, CARB has recommended the implementation of 44 early actions to reduce GHG emissions under AB 32. As outlined in the AB 32 timeline, all of these measures need to be in place and operative by January 1, 2012. Therefore, evaluating the project to ensure that it will comply with CARB's 44 early action strategies will be a qualitative measure to determine if the project conflicts with or obstructs implementation of GHG reduction measures or goals under AB 32.

As shown in Table 3.16-4, CARB's 44 early action strategies are in the sectors of fuels, transportation, forestry, agriculture, education, energy efficiency, commercial, solid waste, cement, oil and gas, electricity, and fire suppression.

<b>Table 3.16-4 Recommended AB 32 GHG Measures to be Initiated by CARB</b>					
<b>ID #</b>	<b>Sector</b>	<b>Strategy Name</b>	<b>ID #</b>	<b>Sector</b>	<b>Strategy Name</b>
1	Fuels	Above Ground Storage Tanks	23	Commercial	SF6 reductions from the non-electric sector
2	Transportation	Diesel – Off-road equipment (non-agriculture)	24	Transportation	Tire inflation program
3	Forestry	Forestry protocol endorsement	25	Transportation	Cool automobile paints
4	Transportation	Diesel – Port trucks	26	Cement	Cement (A): Blended cements
5	Transportation	Diesel – Vessel main engine fuel specifications	27	Cement	Cement (B): Energy efficiency of California cement facilities
6	Transportation	Diesel – Commercial harbor craft	28	Transportation	Ban on HFC release from Motor Vehicle AC service / dismantling
7	Transportation	Green ports	29	Transportation	Diesel – off-road equipment (agricultural)
8	Agriculture	Manure management (methane digester protocol)	30	Transportation	Add AC leak tightness test and repair to Smog Check
9	Education	Local gov. Greenhouse Gas (greenhouse gas) reduction guidance / protocols	31	Agriculture	Research on greenhouse gas reductions from nitrogen land applications
10	Education	Business greenhouse gas reduction guidance / protocols	32	Commercial	Specifications for commercial refrigeration
11	Energy Efficiency	Cool communities program	33	Oil and Gas	Reduction in venting / leaks from oil and gas systems
12	Commercial	Reduce high Global Warming Potential (GWP) greenhouse gases in products	34	Transportation	Requirement of low-GWP greenhouse gases for new Motor Vehicle ACs
13	Commercial	Reduction of PFCs from semiconductor industry	35	Transportation	Hybridization of medium and heavy-duty diesel vehicles
14	Transportation	SmartWay truck efficiency	36	Electricity	Reduction of SF6 in electricity generation
15	Transportation	Low Carbon Fuel Standard (LCFS)	37	Commercial	High GWP refrigerant tracking, reporting prog.
16	Transportation	Reduction of HFC-134a from DIY Motor Vehicle AC servicing	38	Commercial	Foam recovery / destruction program

Table 3.16-4 Recommended AB 32 GHG Measures to be Initiated by CARB (continued)					
17	Waste	Improved landfill gas capture	39	Fire Suppression	Alternative suppressants in fire protection systems
18	Fuels	Gasoline dispenser hose replacement	40	Transportation	Strengthen light-duty vehicle standards
19	Fuels	Portable outboard marine tanks	41	Transportation	Truck stop electrification with incentives for truckers
20	Transportation	Standards for off-cycle driving conditions	42	Transportation	Diesel – Vessel speed reductions
21	Transportation	Diesel – Privately owned on-road trucks	43	Transportation	Transportation refrigeration – electric standby
22	Transportation	Anti-idling enforcement	44	Agriculture	Electrification of stationary agricultural engines

Although the Proposed Project Alternative consists of primarily residential uses, the potential impacts from the implementation of the project were compared to the early action strategies for commercial sectors for uses that might occur in the commercial zones of the Proposed Project Alternative. Of the 44 early action strategies shown in Table 3.16-4, 3 of the 6 that apply to commercial sectors may be relevant to the Proposed Project Alternative commercial uses.

**#12: Reduce high Global Warming Potential (GWP) greenhouse gases in products:** This strategy involves the reduction of high-GWP GHGs used as propellants in aerosol products, tire inflators, electronics cleaning, dust removal, hand held sirens, hobby guns (compressed gas), party products (foam string), and other formulated consumer products when viable alternatives are available. Manufacturers are currently being surveyed to determine the extent of usage of high GWP gases in several more categories of consumer products. Once this early action strategy is implemented by CARB, the commercial facilities on the project site will only use products that are in compliance with this strategy.

**#32: Specifications for commercial refrigeration:** The strategy involves regulatory measures to require supermarket leak tightness and advanced design requirements for new systems as well as energy efficiency measures for new and existing systems. Direct and indirect emissions need to be considered together over the lifetime of the RAC equipment, so that choices made to reduce direct emissions (e.g., low-GWP refrigerants or stand-alone systems) do not adversely impact energy consumption and vice versa. Once this early action strategy is implemented by CARB, all commercial facilities on the project site will comply with the requirements outlined for commercial refrigeration systems.

**#37: High GWP refrigerant tracking, reporting and recovery program:** This strategy involves the following: 1) expanding and enforcing the national ban on venting high-GWP greenhouse gases (including fully emissive processes) during equipment/process lifetime; 2) requiring high-GWP greenhouse gas sales, use and energy use reporting as well as inspection and maintenance (I/M) and leak repair for equipment, cylinders, products, or systems with capacities above some CO<sub>2</sub>e threshold; 3) requiring technician certification for sales, purchase, transport, recovery, reclamation, resale, I/M; and 4) establishing a high-GWP greenhouse gas deposit program and/or fines for emissive processes or leaky systems. Once this early action strategy is implemented by CARB, all commercial facilities on the project site will comply with the requirements outlined for commercial refrigeration systems.

Based on the discussion above, the project would not conflict or obstruct the implementation of CARB's 44 early action strategies that pertain to commercial projects under any of the three alternatives. Therefore, the potential impact would be **less than significant**.

**Mitigation Measure 3.16-3: Implementation of GHG Mitigation Measures.**

To avoid potentially conflicting with or obstructing the implementation of the GHG reduction measures or goals under AB 32, the project applicants will implement mitigation measures that reduce GHG emissions to the extent feasible with respect to the state's progress (at the time) toward meeting GHG emissions reductions required by AB 32. It is anticipated that for each increment of new development within the project site requiring a discretionary approval (e.g., tentative subdivision map, conditional use permit, improvement plan), the City of Rancho Cordova will impose mitigation measures that reduce GHG emissions as outlined in Mitigation Measure 3.16-1. As such, the project's potential impact on GHG emissions and climate change under AB 32 would be **less than significant with mitigation**.

## **4 CUMULATIVE EFFECTS AND OTHER NEPA ANALYSES**

NEPA requires an analysis of the impacts of the proposed action combined with the impacts of other past, present, and reasonably foreseeable future projects producing related impacts. The proposed action, combined with other past, present, and reasonably foreseeable future projects, is called the “cumulative condition.” The purpose of this analysis is twofold: first, to determine whether the overall long-term impacts of all projects would be cumulatively significant and, second, to determine whether the proposed action would cause a “cumulatively considerable” incremental contribution to a significant cumulative impact. The required analysis first creates a broad context in which to assess the project’s incremental contribution to anticipated cumulative impacts, viewed on a geographic scale beyond the project site.

The CEQ regulations implementing provisions of NEPA define cumulative impacts as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions” (40 CFR §1508.7). Cumulative effects can result from individually minor, but collectively significant, actions over time (40 CFR §1508.8). They are caused by the incremental increase in total environmental effects when the evaluated project is added to other past, present and reasonably foreseeable future actions. Cumulative impacts can thus arise from causes that may be unrelated to the project being evaluated, and the analysis of cumulative impacts looks at the duration of the effects.

In a cumulative analysis, a stress is any change to the environment that has the potential to adversely affect resources in and around the project area. The goal of the cumulative analysis is to determine whether the resources, ecosystems, and human communities of concern are approaching conditions where a small additional stress will have an important cumulative effect. The cumulative effects analysis should:

1. Define a baseline condition for the resources using historical trends;
2. Characterize the current status of the resources, ecosystems, and human communities;
3. Characterize the regional landscape in terms of historical and planned development and the constraints of governmental regulations and standards;
4. Identify common cumulative effects within the region; and,
5. Identify socioeconomic driving variables and indicators of stress on these resources (CEQ, 1997).

### **4.1 SCOPE OF RESOURCE ANALYZED**

Based on the impact analysis presented in Chapter 3, the scope of the resources to be evaluated in the cumulative effects analysis are those specific resource impacts for which the Proposed Project Alternative might result in a “cumulatively considerable” incremental contribution to a significant cumulative impact. Therefore, some of the impacts analyzed in Chapter 3 are not carried forward for evaluation in the cumulative effects analysis. Impact analyses were carried forward to the cumulative analysis for biological resources, surface water quality, surface and groundwater supply, air quality, traffic and



transportation, noise, public health, visual resources, cultural resources, and climate change. The impact statements, geographic scope and time frame for each resource are listed in Table 4-1.

#### **4.1.1 GEOGRAPHIC SCOPE**

The geographic area that could be affected by the project varies depending on the environmental resource being considered. The general geographic area associated with different environmental effects of the project defines the boundaries of the area used for compiling the list of projects considered in the cumulative impact analysis.

When analyzing the contribution of the project to cumulative effects, the geographic boundaries of the analysis almost always must be expanded (CEQ, 1997). Cumulative effects analyses should be beyond the scale of “counties, forest management units, or installation boundaries,” instead, “cumulative effects analysis should be conducted on the scale of human communities, landscapes, watersheds, or airsheds” (CEQ, 1997). To consider the effects of the project in combination with other past, present, and reasonably foreseeable future projects, the scale is enlarged so that the appropriate impact zone is included to determine the cumulative impacts. Table 4-1 presents the geographic study areas used for the resources addressed in this cumulative analysis.

The areas of analysis for biological resources and visual resources are expanded for the cumulative effects analysis so that the effects of the Proposed Project Alternative can be considered in combination with related projects. The biological resources area of analysis is expanded to include the Central Valley in order to assess the effects of loss of vernal pools in the context of their widespread loss throughout the Central Valley and their hydrologic connectivity. The area of analysis for visual resources is expanded to include the southeastern Sacramento County to encompass the ongoing urban development in that area. The area of analysis for climate change continues to be the Sunridge Properties, while acknowledging that climate change is a global phenomenon.

#### **4.1.2 TIME FRAME**

When analyzing the contribution of the Proposed Action to cumulative effects, the time frame of the analysis must be expanded to consider the effects of the Proposed Project Alternative in combination with other past, present, and reasonably foreseeable future projects. The time frame with which to evaluate cumulative effects varies depending on when the environmental resource began experiencing a significant cumulative impact.

The 1993 Sacramento County General Plan changed the land use designation of large areas of central Sacramento County from agricultural use to residential, commercial, and industrial uses. The City of Rancho Cordova has a policy of rezoning the agricultural land of willing sellers to urban development (Rancho Cordova, 2006), and has approved a substantial amount of urban development on large swaths of land formerly used for agriculture. Therefore, many of the cumulative impact analyses have a starting timeframe of 1993, the date of the Sacramento County General Plan. The time frame that bounds this analysis is 20 to 30 years in the future, when full build-out of currently approved City of Rancho Cordova Specific Plans is expected to occur. Unless otherwise noted in Table 4-1, these are the time frame boundaries for each of the resource areas.

**Table 4-1**  
**Resource Area Impact Analyses and Geographic Scope and Time Frame**

Resource Area	Impacts	Geographic Scope	Time Frame
<b>Biological Resources</b>	Threatened, endangered, or candidate species, habitat values of sensitive biological habitat (i.e., vernal pools), migration of wildlife among vernal pool habitats, and population loss of native fish, wildlife, or vegetation.	The Mather Core Vernal Pool Recovery Area as defined in the <i>Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon</i> (USFWS 2005) (USFWS Recovery Plan), as well as vernal pool regions in Sacramento County, and the Central Valley.	Vernal pool losses in the Central Valley began at the onset of expanded European settlement during and after the 1849 gold rush in California. Therefore, the starting point of the analysis is the mid-1800's.
<b>Hydrology, Water Quality, Water Supply, Groundwater</b>	Potential for an increase in the rate and volume of drainage runoff from the sites; potential for discharges that affect surface water quality; potential for changes in groundwater elevations around the Elk Grove Cone of Depression; potential for changes in groundwater elevations adjacent to the proposed well field; potential for migration of lower quality (higher TDS) groundwater in Aquifer 2 up into Aquifer 1; potential for changes in the rate of contaminant plume migration; potential for changes in groundwater elevations in and around known contaminant plumes; increased need for development of long-term regional surface and groundwater supplies.	The land and water bodies within the project sites, as well as Lower Morrison Creek and Upper Laguna Creek downstream of the project site boundaries, the Zone 40 planning area and the Central Sacramento County Groundwater Basin	Based on the 1993 County General Plan, SCWA expanded the boundary of Zone 40 and updated their Water Supply Master Plan based on these new boundaries.
<b>Air Quality</b>	The exposure of future residents to odors from the SRC and long-term increases in ROG, NO <sub>x</sub> , and PM <sub>10</sub> emissions	The Sacramento Valley Air Basin, which is bounded by the North Coast Ranges on the west and the northern Sierra Nevada Mountains on the east	Federal and state regulations and policies generally result in incremental improvements or degradation of regional air quality over a long time period, consistent with full build-out of currently approved Specific Plans in 20 to 30 years
<p>Notes:</p> <p>NO<sub>x</sub> – Nitrous Oxide  PM<sub>10</sub> – Particulate matter 10 microns in diameter or smaller  ROG – Reactive Organic Gas</p> <p>SCWA – Sacramento County Water Agency  SRC – Sacramento Rendering Company  TDS – Total Dissolved Solids  USFWS – US Fish and Wildlife Service</p>			

**Table 4-1  
Resource Area Impact Analyses and Geographic Scope and Time Frame (continued)**

Resource Area	Impacts	Geographic Scope	Time Frame
<b>Traffic and Transportation</b>	Exacerbate or create conditions that exceed standards for daily or peak hour operations on existing roadways, intersections, and freeway ramps	The road network within and immediately adjacent to Rancho Cordova	From the 1993 County General Plan to full build-out of currently approved City Specific Plans in 20 to 30 years.
<b>Noise</b>	Project-generated increases in traffic noise levels on area roadways	The Sunridge Specific Plan area and adjacent communities	From the 1993 County General Plan to full build-out of currently approved City Specific Plans in 20 to 30 years.
<b>Public Health</b>	Human health hazards associated with mosquito-borne diseases	The Sunridge Specific Plan area	The timeframe of this analysis is from the 1993 County General Plan to full build-out of currently approved City Specific Plans in 20 to 30 years.
<b>Visual Resources</b>	Change of agricultural and open space views in the project region to urban land uses and the associated increase in nighttime light and glare and subsequent skyglow	Southeastern Sacramento County	The timeframe of this analysis is from the 1993 County General Plan to full build-out of currently approved City Specific Plans in 20 to 30 years.
<b>Cultural Resources</b>	Potential damage to as-yet-undiscovered prehistoric sites or Native American burials	The Sunridge Specific Plan area and adjacent communities	The timeframe of this analysis is from the 1993 County General Plan to full build-out of currently approved City Specific Plans in 20 to 30 years.
<b>Climate Change</b>	Project-generated short- and long-term increase in greenhouse gas (GHG) emissions.	The Sunridge Properties	The timeframe of this analysis is from the 1993 County General Plan to full build-out of currently approved City Specific Plans in 20 to 30 years.
Notes: NO <sub>x</sub> – Nitrous Oxide PM <sub>10</sub> – Particulate matter 10 microns in diameter or smaller ROG – Reactive Organic Gas SCWA – Sacramento County Water Agency SRC – Sacramento Rendering Company TDS – Total Dissolved Solids USFWS – US Fish and Wildlife Service			

## **4.2 PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS**

Trends analysis of change in the extent and magnitude of stresses is critical for projecting the potential future cumulative effect. Cumulative effects occur through the accumulation of effects over varying periods of time. Therefore, the historical context of effects is critical to assessing the direct, indirect, and cumulative effects of the Proposed Project Alternative. Trends data can be used to:

1. Establish the baseline for the affected environment more accurately;
2. Evaluate the significance of effects relative to historical degradation; and,
3. Predict the effects of the action (i.e., by using the model of cause and effects established by past actions (CEQ, 1997).

A description of past, present, or reasonably foreseeable actions with actual or anticipated adverse or beneficial effects on the identified resource areas follows.

### **4.2.1 PAST ACTIONS- BIOLOGICAL RESOURCES**

Past actions which affected vernal pools and associated special-status species include historical actions which significantly reduced the extent and diversity of ecosystems within the Central Valley and throughout California.

The approximately 7 million acres of vernal pool landscapes present in the 1800s have been much reduced, first by agricultural development and mineral extraction, and more recently by urban expansion (Holland, 2009). Beginning around the mid-1800s, the primary threat to vernal pools was conversion to agriculture and water conveyance and storage projects (Framer et al. 1989, Kreissman 1991). The most recent estimate of remaining vernal pool habitat was about 967,600 acres in 1997, an 87% reduction in the original habitat acreage (Holland, 1998b). Based on observed species distribution profiles and habitat loss estimates of 50% to 85% modeling has predicted that 15% to 33% of the original biodiversity of Central Valley vernal pool crustaceans has been lost since the 1800s (King, 1998).

Loss of habitat has been even more extensive in areas outside of the Central Valley. Along the Central California coast, at least 90% of historic vernal pools have been destroyed, and most remaining vernal pools have been degraded (Ferren and Pritchett, 1988). In southern California, estimated loss of vernal pool habitat ranges from 95% to nearly 100% (Bauder, 1987; Oberbauer, 1990; Zedler, 1990; Bauder and McMillan, 1998). Urban development has reduced biological resources, including reducing the acreage of vernal pools, throughout the Central Valley, Sacramento County and, specifically, central Sacramento County.

A local example of the impact of historic gold mining in California on native landscapes exists near the project site. Approximately 10,275 acres of land within the Rancho Cordova planning boundaries are categorized as mine tailings. These lands are the alluvial deposit results of large-scale dredge gold mining operations undertaken from the late 1800s to the mid-1900s, and now consist of long rows of 13- to 35-feet tall cobble piles (Lower American River Task Force, 2002).

## **4.2.2 PAST ACTIONS-OTHER RESOURCE AREAS**

Past actions which affected surface water quality, surface and groundwater supply, air quality, traffic and transportation, noise, public health, visual resources, cultural resources, and climate change include the 1993 approval by the Sacramento County Board of Supervisors of a general plan that changed the land use designation of large areas of central and eastern Sacramento County from agricultural uses to residential, commercial, and industrial uses. The 2006 City of Rancho Cordova General Plan reaffirmed this approach within the city limits by establishing a policy of rezoning the agricultural land of willing sellers to urban development (Rancho Cordova, 2006). Surface and groundwater supplies available at that time were insufficient to serve this growth. The Sacramento Valley Air Basin was one of the worst air quality basins in the nation based on federal air quality exceedances. Specific plans were initiated that planned development within 4 miles of the Sacramento Rendering Company (a 4-mile buffer zone is recommended by the SMAQMD for rendering plants). Sacramento traffic on the major highways, Interstates 5 and 80 and Highways 50 and 99, was increasing with each new development outside the urban core. The rural and agricultural visual and noise environment that had defined the outskirts of Sacramento was increasing replaced with urban development on all sides of the City of Sacramento, reducing and removing the undeveloped borders between Sacramento's suburbs and adjacent towns. GHG emissions have been increasing in countries across the globe.

## **4.2.3 PRESENT ACTIONS-BIOLOGICAL RESOURCES**

The past actions described above that significantly altered the vernal pool ecosystems in the Central Valley and throughout California have not been reversed in the present; the extent and diversity of the vernal pool ecosystems and associated special-status species continue to be substantially reduced from their historical presence. Figure 4-1 depicts the extent of vernal pool habitats in the southeastern Sacramento Valley, as well as the Core recovery areas identified in the USFWS Recovery Plan.

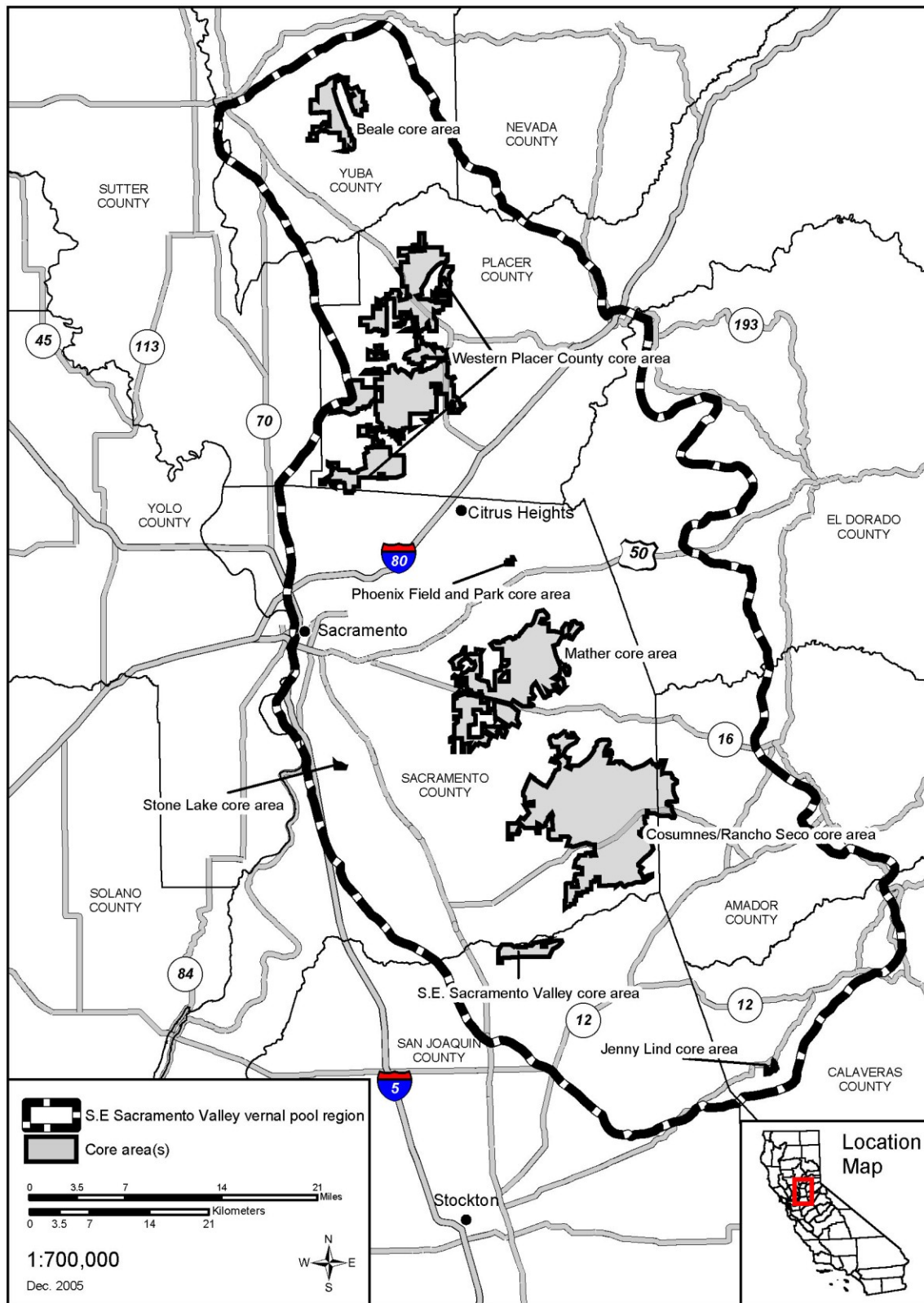
### **4.2.3.1 CURRENT TRENDS OF HABITAT LOSS**

Conversion of vernal pool habitats to intensive agricultural uses continues to contribute to the decline of vernal pools. From 1992 to 1998, 125,591 acres of grazing land were converted to other agricultural uses in the Central Valley of California (USFWS, 2005). It is likely that much of this land supported vernal pools. Holland (2009) estimated that more than 32,000 acres of vernal pool habitats had been lost in the San Joaquin Valley vernal pool region from the late 1980s until 1997, mostly as a result of agricultural conversion (see Table 4-2).

Holland (2009) studied vernal pool habitat losses by County, including total acreage, the rate of habitat losses, the type of land use change that resulted in the loss, and the losses attributable to the type of conversion. The following discussions are from Holland's 2009 study.

Habitat loss rates have accelerated markedly in Madera, Stanislaus, Butte, Fresno, Merced, Kings, Kern, Sacramento, San Joaquin, and Sutter counties between 1997 and 2005. Sacramento County lost 12.5% (6,723 acres) of its vernal pool habitat from 1993 to 2005. Six counties (Colusa, Glenn, Napa, Placer, Sutter, and Yolo) have lost more than 3% of their baseline habitat per year since the baseline mapping year.

Merced County lost 6,073 acres between 1986 and 1997, and 17,779 acres between 1997 and 2005. Placer County lost 10,440 acres between 1986 and 1997, and 6,675 acres between 1997 and 2005. Areas in the central and western portions of the valley (Colusa, Glenn, Sutter, and Yolo counties) have also experienced dramatic declines in the total amount of vernal pool habitat.



**Figure 4-1 Southeastern Sacramento Valley Vernal Pool Region and Vernal Pool Core Areas**

**Table 4-2  
Acreage of Vernal Pool Habitat Loss, by County**

County	Baseline Year	Mapped Extant			Total Acres Lost			Total Percent Lost		
		Baseline	1997	2005	Base-97	97-05	Base-05	Base-97	97-05	Base-05
Alameda	1986	2,751	2,402	2,006	348	396	745	12.7%	14.4%	27.1%
Amador	1983	4,242	4,242	3,972	--	270	270	0.0%	6.4%	6.4%
Butte	1994	59,166	58,714	53,540	452	5,174	5,626	0.8%	8.7%	9.5%
Calaveras	1983	6,419	6,419	5,918	--	501	501	0.0%	7.8%	7.8%
Colusa	1993	5,703	4,410	2,110	1,293	2,300	3,593	22.7%	40.3%	63.0%
Contra Costa	1985	3,150	3,150	3,131	--	19	19	0.0%	0.6%	0.6%
El Dorado	1983	1,274	1,274	1,018	--	256	256	0.0%	20.1%	20.1%
Fresno	1994	27,690	27,539	25,491	151	2,048	2,199	0.5%	7.4%	7.9%
Glenn	1993	10,803	8,113	6,553	2,690	1,560	4,250	24.9%	14.4%	39.3%
Kern	1990	9,543	9,455	8,681	88	774	862	0.9%	8.1%	9.0%
Kings	1991	11,951	11,662	9,676	289	1,986	2,275	2.4%	16.6%	19.0%
Lake	1995	2,541	2,541	2,410	--	131	131	0.0%	5.2%	5.2%
Madera	1987	94,054	90,357	79,707	3,697	10,650	14,347	3.9%	11.3%	15.3%
Marin	1986	260	260	162	--	98	98	0.0%	37.7%	37.7%
Mariposa	1976	6,553	6,553	6,553	--	--	--	0.0%	0.0%	0.0%
Merced	1987	285,215	279,142	261,363	6,073	17,779	23,852	2.1%	6.2%	8.4%
Napa	1987	1,207	994	165	213	829	1,042	17.6%	68.7%	86.3%
Placer	1994	48,298	37,858	31,183	10,440	6,675	17,115	21.6%	13.8%	35.4%
Sacramento	1993	53,757	53,583	47,034	174	6,549	6,723	0.3%	12.2%	12.5%
San Joaquin	1988	37,976	36,527	29,615	1,449	6,912	8,361	3.8%	18.2%	22.0%
Shasta	1995	24,034	23,937	23,019	97	918	1,015	0.4%	3.8%	4.2%
Solano	1994	38,897	37,334	35,401	1,563	1,933	3,496	4.0%	5.0%	9.0%
Sonoma	1986	4,466	3,925	2,464	541	1,461	2,002	12.1%	32.7%	44.8%
Stanislaus	1988	92,346	91,025	78,074	1,321	12,951	14,272	1.4%	14.0%	15.5%
Sutter	1990	1,444	1,374	700	70	674	744	4.8%	46.7%	51.5%
Tehama	1994	137,902	134,641	126,862	3,261	7,779	11,040	2.4%	5.6%	8.0%
Tulare	1993	38,223	36,442	30,974	1,781	5,468	7,249	4.7%	14.3%	19.0%
Tuolumne	1976	4,164	4,164	4,081	--	83	83	0.0%	2.0%	2.0%
Yolo	1989	3,617	2,640	901	977	1,739	2,716	27.0%	48.1%	75.1%
Yuba	1995	14,337	14,061	13,035	276	1,026	1,302	1.9%	7.2%	9.1%
Totals		1,031,983	994,738	895,798	37,245	98,940	136,185	3.6%	9.6%	13.2%
Map Error		928			--	928	928			
Net Loss					99,868	137,113			9.7%	13.3%

Source: Holland 2009

Eighty-one percent of the total habitat loss between the baseline year (ranging from 1976 to 1995) and 2005 was lost due to agricultural land conversions. Nearly two-thirds of the loss was concentrated in Merced, Stanislaus, and San Joaquin counties, and much of the remaining loss was in Madera, Glenn and Colusa counties.

Land conversions tied to population growth and urban development accounted for almost 26,000 acres, or 19%, of habitat loss. Thirteen percent of all Central Valley loss of vernal pools due to urban development occurred in Sacramento County; 59% occurred in Placer County. Urbanization exceeds agricultural development as the primary cause of vernal pool habitat loss only in Placer County. However, agricultural

land conversions, mostly orchards and vineyards, have far exceeded urbanization as a cause of vernal pool habitat loss, contributing 81% of total habitat loss. Most of the loss due to orchard and vineyard development occurred in the southern Sacramento Valley and northern San Joaquin Valley (Placer Land Trust, 2009).

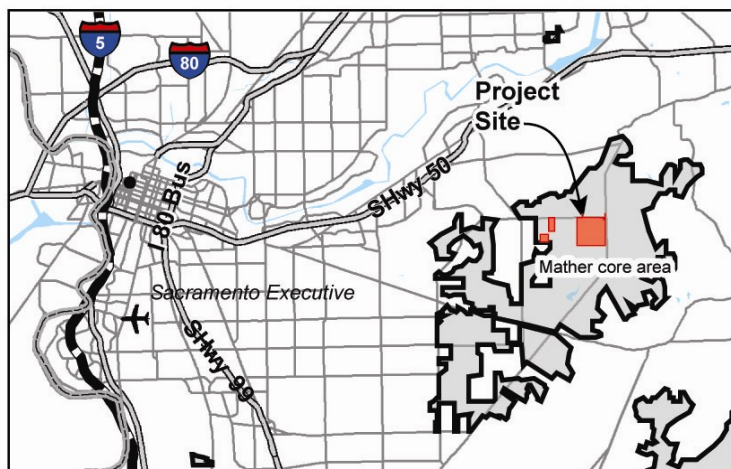
Agricultural diversions occur outside the normal regulatory processes that apply to urban, commercial, infrastructure, and industrial development (EDAW, 2009) and are, therefore, largely unmitigated. Little to no vernal pool habitat is being created or preserved to compensate for this loss.

Through Section 7 of the Endangered Species Act (ESA), the Sacramento U.S. Fish and Wildlife (USFWS) Office has also reviewed the conversion of vernal pool habitats to other uses since 1994 (a more recent baseline than most of the County-based baseline years used by Holland) (USFWS, 2005). Almost 50,000 acres of vernal pool habitats across California were lost, over half (25,000 acres) was the result of residential, commercial, and industrial development projects, and more than 15,000 acres of vernal pool habitats to intensive agricultural uses. In more recent years, the vernal pool habitats have been lost primarily as a result of widespread urbanization. The construction of infrastructure associated with urbanization also has contributed greatly to the loss and fragmentation of vernal pool plant and crustacean populations, including the construction of highways, wastewater treatment plants, sewer lines, water supply projects, and other utility projects. Some of these impacts to vernal pool habitat have been offset, in part, by compensation which includes the preservation and long-term management of vernal pool habitat for the benefit of the listed species as terms and conditions of Section 7 consultations.

#### **4.2.3.2 USFWS VERNAL POOL RECOVERY PLAN**

All species addressed in the USFWS Vernal Pool Recovery Plan are threatened by habitat loss and fragmentation. Although habitat protection of remaining vernal pools and vernal pool complexes in the vernal pool regions is a long-term goal, the “Core Areas” identified are targeted as the initial focus of protection measures. Core Areas are the specific sites that are necessary to recover these endangered or threatened species or recover or to conserve the species of concern addressed in the USFWS Recovery Plan. As seen on Figure 4-2, the Proposed Project Alternative is located within the Mather Core Area identified in the USFWS Recovery Plan. The Mather Core Area is ranked as Priority Zone 1 for recovery. The Mather Core Area was ranked Priority 1 due to the presence of four threatened and endangered species, the slender Orcutt grass, the Sacramento Orcutt grass, the vernal pool fairy shrimp, and the vernal pool tadpole shrimp, as well as the high number of rare species in the area. The Mather Core Area contains the highest concentration of vernal pool tadpole shrimp occurrences throughout their ranges. Similarly the Mather Core Area contains the most occurrences of Sacramento Orcutt grass. Habitat preservation rates for the Mather Core Area range between 85% for vernal pool fairy shrimp and Sacramento Orcutt grass to 95% for vernal pool tadpole shrimp and Sacramento Orcutt grass.





**Figure 4-2 Mather Core Area Map**

#### **4.2.3.3 OFF-SITE CONSTRUCTED VERNAL POOLS**

Off-site construction of vernal pools as a mitigation strategy has been a tool used in recent decades. However, studies that have been performed on these created vernal pools have indicated mixed results.

In a 1994 mitigation follow-up study, the USFWS concluded that constructed wetlands which met performance standards and permit compliance often did not fully replace the habitat values lost (Weese, 1998). A 1996 mitigation follow-up study compared site specific monitoring regimes at 25 vernal pool mitigation sites that were compensatory mitigation for projects permitted by the USACE (Weese, 1998). The study attempted to determine whether the performance standards were sufficient to assure successful habitat replacement. The study found that the constructed wetlands often did not follow the USFWS Vernal Pool Mitigation and Monitoring Guidelines (USFWS, 1994) with respect to: site selection; construction techniques; reference pools; hydrology staff gauges; vegetation, wildlife, and listed invertebrates measurement; water quality monitoring; site maintenance inspections; and, performance standards. Of the 1,543 vernal pools constructed at the 25 sites, 96% of the pools met hydrology standards, 69% met vegetation standards, and 83% met permit compliance. There were significant issues with regard to poor site locations, poor construction techniques, and lack of routine inspections for general site maintenance. In contrast to USFWS recommendations, 95% of the projects stored the inoculum (the topsoil and organic seed-bearing material removed from impact site vernal pools for placement in constructed pools) for more than one year after collection, with poor flora performance results evident at those sites in the first three years of monitoring.

Ambrose (1999) reviewed numerous surveys of wetland mitigation conducted nationwide, but particularly in California, and discovered that wetland functions and values are generally not replaced. Permit conditions often rely on qualitative assessment approaches that “focus on vegetation and other easily reviewed aspects of a site, overlooking important wetland functions.” For example, permit conditions often focus on plant survivorship or cover, rather than the replacement of natural wetland functions. Ambrose reports on a function-based assessment approach that used quantitative measures of hydrology, biogeochemistry, and habitat to provide an indication of wetland functions at 40 mitigation sites. None of the sites was found to be successful. However, the primary reason for failure was the lack of proper hydrology, specifically stream channels—there was no overbank flooding at any of the sites, which were classified as lower perennial riverine habitat. In conclusion, Ambrose suggests that wetland restoration or creation be considered “experimental.”

Ambrose et al. (2007) evaluated mitigation at 129 sites across California. Results were similar to his previous study in that the researchers found that the permittees were meeting their mitigation obligations, but the ecological conditions at the sites had not replaced the wetland functions lost to development. The results were “at least partly due to regulatory agencies approving mitigation projects with conditions or criteria that are too heavily focused on the vegetation component of wetland function, with inadequate emphasis on hydrological and biogeochemical conditions and their associated functions and services (e.g., flood attenuation, water quality improvement).”

A recent study of Central Valley vernal pools (Placer Land Trust, 2009) examined 12 small vernal pool preserves, chosen partly because they are commonly used to preserve populations of threatened and endangered plants. Many of the preserve managers reported that the preserves’ ecological integrity was threatened from public trespass, vandalism, trash dumping, domestic animal use, and similar activities, and that the condition of the preserve had declined since establishment.

The USFWS Recovery Plan also reports on studies which demonstrate concerns regarding constructed vernal pools. Noss et al. (2002), in discussing creation projects, state “that most apparently successful projects are less than 10 years old and the long-term trends and sustainability of vernal pool flora, invertebrates, and amphibians have not been verified. For this reason, preservation must be the fundamental strategy in maintaining vernal pool ecosystems within the planning area.” Showers (2005) states that vernal pool creation is considered an experimental science because the extent to which entire vernal pool plant and invertebrate communities can be successfully recreated is still unknown. Therefore, the USFWS Recovery Plan establishes the order of preference of habitat protection as, first, preservation of existing natural vernal pool habitat, followed by restoration of former or degraded habitat, and lastly, creation of vernal pools if necessary to maintain the range of vernal pool habitat.

#### **4.2.4 PRESENT ACTIONS-OTHER RESOURCE AREAS**

Growth in Sacramento County is on-going and is projected to continue to occur primarily in the cities of Elk Grove and Rancho Cordova and in the community of Natomas, which are the only remaining areas of the county within the Urban Services Boundary (USB) where land is available. Rancho Cordova is located within the eastern portion of Sacramento County, covering approximately 33.6 square miles. The data from the 2000 U.S. Census indicated that the population of Rancho Cordova was 48,731 in 1990. The 2010 census data are not yet available.

Rapid growth is projected for the City of Rancho Cordova. Full buildout of the city is expected by the year 2030. Adding projected development to current residential and commercial development in Rancho Cordova would give an estimate of 310,568 residents, 126,241 dwelling units, and 215,609 jobs in 2030 in the City and its Planning Areas (City of Rancho Cordova, 2006). As part of its general plan process, the City has addressed expected environmental changes such as air quality degradation, traffic congestion, loss of plant or animal habitat, loss of farmland, provision of adequate public services, and other environmental changes related to urban development; however, impacts are often significant and unavoidable. For example, development increases the likelihood of potential damage to as-yet-undiscovered prehistoric sites or Native American burials.

The urban development occurring in the City of Rancho Cordova and Sacramento County continues to contribute to impacts to surface water quality, surface and groundwater supply, air quality, traffic and transportation, noise, public health, visual resources, cultural resources, and climate change.

#### **4.2.5 REASONABLY FORESEEABLE FUTURE ACTIONS**

Reasonably foreseeable future actions that are anticipated to affect resource areas analyzed in the cumulative analysis are described below.

#### **4.2.5.1 FUTURE ACTIONS WITHIN THE MATHER CORE VERNAL POOL COMPLEX-ALL RESOURCE AREAS**

Vernal pool regions were defined in the USFWS Recovery Plan. As defined in this document, vernal pool regions are discrete units that assist in identifying areas to be conserved for recovery and conservation. Each region is designated based largely by endemic species, with soils and geomorphology as secondary elements. Core areas are distinct areas within each vernal pool region that provide features, populations and distinct geographic and genetic diversity necessary to the recovery of a species. Core areas represent viable populations that contribute to connectivity of habitat and thus increase survival opportunities for vernal pool populations (USFWS, 2005).

The geographic area of this analysis includes 26,000 acres, consisting largely of the Mather Core Area established by the USFWS Recovery Plan. The Mather Core Area is a vernal pool region in eastern Sacramento County (Figure 4-2). The Mather Core Area and the region is experiencing conversion to urban land uses from native, agricultural and industrial use. The Anatolia project area and the Mather Specific Plan project area were also included due to their proximity to the proposed project as well as their similarity to the proposed project with respect to effects on biological resources. There are 34 identified projects that have taken place or will take place in the Mather Core Area. Data for these projects were taken from the North Douglas Project Supplemental Environmental Assessment Draft (USACE, 2007). USACE prepared the list of projects from their electronic database and physical administrative records. As such, the list does not include information about activities that did not require a permit, or were conducted in violation of Section 404 of the Clean Water Act.

The 34 identified projects are listed in Table 4-3. Table 4-3 also lists the vernal pool inventory, impacts and mitigation associated with each project. In addition to vernal pool-related impacts, each project would result in the development of the property in a generally similar manner to the Sunridge Properties described in this EIS. For each project, additional housing, roads, schools, parks, and related infrastructure would be developed, resulting in similar impacts to those described for the Sunridge Properties described in this EIS.

#### **4.2.5.2 FUTURE ACTIONS WITHIN THE CITY OF RANCHO CORDOVA AND SACRAMENTO COUNTY-ALL RESOURCE AREAS**

The 2006 City of Rancho Cordova General Plan, the specific and community plans developed by the cities of Folsom and Elk Grove, and the 1993 Sacramento County General Plan serve as a guide to future development. The City of Rancho Cordova's growth and buildout plan are indicated in Table 4-5, which presents information from their General Plan. The acreages identified for development by general, community and specific plans within Sacramento County are listed in Table 4-5. The portions of these acreages that are planned to be devoted to parks, recreation or open space are also listed.

The projects identified in Table 4-3 are included in the City of Rancho Cordova's growth projections presented in Table 4-4, as well as the general and specific plans identified in Table 4-5 for Sacramento County.

Table 4-3 Development Projects in the Mather Core Area																
Project (USACE ID)	Total Vernal Pools and Other Waters		Impacts				Preserved On-site		Preserved Off-site		Creation/Restoration				Status	Time Frame
	VP	OW	Direct		Indirect		VP	OW	VP	OW	In Core		Out of Core			
	VP	OW	VP	OW	VP	OW	VP	OW	VP	OW	VP	OW	VP	OW		
Anatolia (SPK-1901-100210)	68.07	17.45	29.67	14.55	3.54	0.07	41.1	2.9			3.8	14.1	27.61	0.99	Permit Issued, Constructed	Past
Chetcuti (SPK-1992-00196)	0.75		0.75												Permit Issued, Constructed	Past
Dierks Ranch (SPK-1998-00350)	2.12	0.53	2.12	0.053			8.85						2.65		Permit Issued, Constructed	Past
Kiefer Landfill Expansion (SPK-1990-00250)	4.27	1.8	4.27	1.8	2.1								9.11		Permit Issued, Constructed	Past
Mather Groundwater Extraction (SPK-2003-00717)		0.03		0.03				0.03							Permit Issued, Constructed	Past
McNair (SPK-2001-00263)		0.01		0.01				0.01							Permit Issued, Constructed	Past
Montelena (SPK-2001-00448)	12.25	5.63	6.95	5.51	0.022		5.3	0.12	6.91	2.21			14.17	5.14	Permit Issued, Constructed	Past
Security Park (SPK-2006-00196)	0.16	0.01	0.16	0.01	0.023				0.79				0.19	0.01	Permit Issued, Constructed	Past
SR16&Excelsior, (SPK-2005-00588)		0.61		0.61					1.48	0.74				0.74	Permit Issued, Constructed	Past
Sunridge Park (SPK-2001-00252)	1.36	0.64	1.31	0.5	1.58		0.05	0.14	10.4				3.39		Permit Issued, Constructed	Past
Triangle Rock Mining (SPK-1998-00683)	3.7	3.9	3.5	0.53	0.21		0.2	3.37	5.28	1.41	7.54	3.8			Permit Issued, Constructed	Past
Hodges Sloughouse (SPK-2000-00752)	1.04	0.18													No Permit Application Received Delineation Only	Past
Vineyard Estates (SPK-1991-00387)	0.32	0.32											0.34		Permit Issued, Constructed	Past
Excelsior Meadows (SPK-1991-00013)	0.04	0.36	0.04	0.36											Permit Issued, Constructed	Past
Anatolia IV (SPK-1994-00210)	1.36		1.36						2.72				1.36		Permit Issued, Partially Constructed	Present
Douglas Road 98 (SPK-2002-00568)	3.70	0.21	3.70	0.21					7.82				3.91		Permit Issued, Partially Constructed	Present
North Douglas (SPK-1994-00218)	1.99	4.16	1.99	4.16	0.7				7.64				1.99	4.16	Permit Issued, Partially Constructed	Present
Douglas Road 103 (SPK-1997-00006)	4.23	0.48	1.66	0.32	5.27		2.57	0.16	5.89				7.25		Permit Issued, Not Constructed	Present
Grantline 208 (SPK-1994-00365)	9.87	1.25	5.22	0.45	0.45		4.65	0.75	6.9				6.15		Permit Issued, Not Constructed	Present
Sunridge Village J (SPK- 2001-00230)	1.88	1.11	1.88	1.11	0.36	0.03			9.18				3.38		Permit Issued, Not Constructed	Present
Lot P (SPK-2005-00325)	9.26	1.52	9.26	1.52					17.47	2.86			9.26	1.52	Permit Application Withdrawn	Reasonably Foreseeable
Mather Redevelopment (SPK-2003-00441, 2002-00561, 2009-00525, 2009-00526, 2009- 00527,2009-00528, 2009-00529, 2009-00530, 2009-00404)	69.8	54.2	16.1	19.36			50.2	24.73					13.9	20.02	Permit Application Received	Reasonably Foreseeable
Arista del Sol (SPK-2004-00458)	8.59	8.74	5.37	8.52	1.44		3.22	0.22	20.18	9.04			6.81	8.52	Permit Application Received	Reasonably Foreseeable
Grantline 220 (SPK-2006-00604)	2.44	1.52	2.44	1.52	0.44	0.05			5.32	3.09			2.88	1.57	Permit Application Withdrawn	Reasonably Foreseeable
Excelsior Estates (SPK-2004-00791)	27.79	25.63	22.97	18.64	3.26	0.68	3.95	1.54	51.76				33.64		Permit Application Received	Reasonably Foreseeable
Jaeger Ranch (SPK-2006-00602)	3.66	2.75	2.41	1.05	1.25	0.16	1.25	1.69	4.81	1.23			2.41	1.05	Permit Application Received	Reasonably Foreseeable
Kamilos 160 (SPK-2006-00603)	4.12	0.70	2	0.38	1	0.13	1.89	0.31	5	0.89			3	0.49	Permit Application Received	Reasonably Foreseeable
North Douglas II (SPK-2006-00240)	1.23	3.98	0.40	0.40	0.27	1.80	0.83	3.58	1.34	4.40			0.66	2.20	Permit Application Received	Reasonably Foreseeable
Rio del Oro (SPK-1999-00590)	35.49	21.15	15.07	12.83	2.2		20.4	8.3	2.67	19.6	17.9	18.84	16.66		Permit Application Received	Reasonably Foreseeable
Notes: VP – Vernal Pool      OW – Other Waters																

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Table 4-3 Development Projects in the Mather Core Area (continued)																
Project (USACE ID)	Total Vernal Pools and Other Waters		Impacts				Preserved On-site		Preserved Off-site		Creation/Restoration				Status	Time Frame
	VP	OW	Direct VP	Direct OW	Indirect VP	Indirect OW	VP	OW	VP	OW	VP	OW	VP	OW		
Shalako (SPK-2006-00605)	9.88	3.88	2.83	1.09	2.59	1.06	7.04	2.69	5.65	1.62			2.83	1.09	Permit Application Received	Reasonably Foreseeable
Sunridge (SPK-2000-00414)	53.41	8.11	3.82	5.56	1.99	1.77	1.59	2.56	9.86	9.88			4.33	6.37	Permit Application Received	Reasonably Foreseeable
Sunridge Village (SPK-2004-00707)	14.91	5.96	9.33	5.21			5.58	0.75	29.08				14.54		Permit Application Received	Reasonably Foreseeable
Mather Interceptor (SPK-2007-00716)	0.14	0.07	0.07	0.05			0.07	0.02	0.27	0.07	0.01	0.02	0.08	0.03	Permit Application Withdrawn	Reasonably Foreseeable
Matsuoka (SPK-2005-01046)	3.05	6.41	0.34	1.3	0.98	0.3	2.71	6.49	2.94				1.64		Permit Application Received	Reasonably Foreseeable
North Douglas II (SPK-2006-00240) (Whitlow Property)	1.23	3.98	0.4	0.23	0.02		0.83	3.58	1.25				0.4	0.23	Permit Application Withdrawn	Reasonably Foreseeable
Arboretum (SPK-2007-00133)	22.18	94.85	5.97	25.81	8		16.15	69.05	11.94	49.58			5.97	25.81	Permit Application Received	Reasonably Foreseeable
Teichert Grantline Plant (SPK-2002-00675)	307.0	1.14	0.02				0.07	1.12		0.06					Permit Application Withdrawn	Reasonably Foreseeable
Zinfandel Extension (SPK-2009-00880)			0.31	2.38	0.54										No Permit Application Received	Reasonably Foreseeable
SRC Milling (SPK-2003-00669)	11.19	11.02													No Permit Application Received	Reasonably Foreseeable
Cordova Hills (SPK-2004-00116)	109.83		45.15	6.62											Permit Application Received	Reasonably Foreseeable
Triangle Rock Expansion Florin Rd S. (SPK-2000-0501)	1.1	9.93	0.15	8.95			0.96					24.7			Permit Application Received	Reasonably Foreseeable
Total	813.41	304.22	208.99	151.63	38.23	6.05	179.46	134.11	234.55	106.68	29.25	61.46	200.51	79.94		
Notes: VP – Vernal Pool      OW – Other Waters																

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<b>Table 4-4</b> <b>City of Rancho Cordova 2006, Future and General Plan Buildout Conditions</b>						
Land Uses	City Only			Entire Planning Area		
	Year 2006	Year 2030	Buildout	Year 2006	Year 2030	Buildout
Resident Units	22,443	75,957	75,923	41,749	109,884	126,241
Population	54,379	183,362	183,459	102,412	267,275	310,568
Total Employment <sup>1</sup>	47,679	89,305	102,878	94,771	146,459	195,021
Commercial	7,075	10,603	11,529	15,026	21,123	23,942
Office	25,534	69,573	78,597	45,985	108,369	132,355
Industrial	10,886	9,129	8,297	26,864	16,968	24,381
Total Square Footage <sup>2</sup>	18,743,319	32,791,241	35,084,629	40,717,601	56,139,386	71,209,788
Commercial	3,537,443	5,300,372	5,764,627	7,513,133	10,560,826	11,971,169
Office	7,491,663	19,132,151	21,614,312	13,551,611	29,801,078	36,397,637
Industrial	7,714,213	8,358,718	7,705,690	19,652,857	15,777,482	22,840,982
Notes: Buildout projections under the Entire Planning Area include the City.						
<sup>1</sup> Total Employment also includes other types of jobs, such as public school employment.						
<sup>2</sup> Total Square Footage also includes square footage from other uses, such as public and quasi-public uses (e.g. schools and churches).						
Source: Rancho Cordova General Plan, Land Use Element, 2006						



<b>Table 4-5</b> <b>Acreages Identified for Development in Sacramento County</b>		
<b>Plan Title</b>	<b>Acreage Identified for Development</b>	<b>Portion Devoted to Parks, Recreation or Open Space</b>
<b>Unincorporated Sacramento County</b>		
Mather Field Specific Plan	5,610	2,319
North Vineyard Station Specific Plan	1,594	293
Vineyard Springs Comprehensive Plan	2,560	407
Florin Vineyard Comprehensive Plan	3,450	Not yet identified
Easton	1,400	291
Rancho Murieta	1,750	Not yet identified
<b>Elk Grove</b>		
East Franklin Specific Plan	2,474	Not yet identified
East Elk Grove Specific Plan	1,440	190
Elk Grove Triangle Special Planning Area	710	0
Elliott Ranch South Specific Plan (Laguna Stonelake)	452	120
Laguna Ridge Specific Plan	1,900	234
Lent Ranch Marketplace Special Planning Area	300	0
<b>Folsom</b>		
Folsom South of U.S. Highway 50 Specific Plan	3,500	1,050
Folsom East Area Specific Plan	3,800	Approximately 500
<b>Rancho Cordova</b>		
Cordova Community Plan	37,650	Not yet identified
Rio del Oro Specific Plan	3,800	1,122
Sunrise-Douglas Community Plan	6,000	177
Sunridge Specific Plan	2,600	482
SunCreek Specific Plan (Sunrise-Douglas II Specific Plan)	1,250	400
<b>Galt</b>		
Northeast Area Specific Plan	1,247	Not yet identified
Source: County of Sacramento 2009		

#### **4.2.5.3 FUTURE ACTIONS WITHIN THE CITY OF RANCHO CORDOVA AND SACRAMENTO COUNTY-SURFACE AND GROUNDWATER SUPPLY**

The 1993 General Plan changed the land use designation of large areas of central and eastern Sacramento County from agricultural use to residential, commercial, and industrial uses. As a result of this urban expansion, the Sacramento County Water Agency (SCWA) expanded the boundary of Zone 40 and updated their Water Supply Master Plan to encompass these lands that were now within the Urban Services Boundary, so that surface and groundwater supplies could be developed to serve this area. The SCWA is responsible for constructing Zone 40 facilities.

Implementation of the Zone 40 WSMP, Zone 41 UWMP, and Zone 40 WSIP, would provide SCWA Zone 40 with long-term surface and groundwater supplies. Immediate water supplies would be provided by groundwater from the North Vineyard Well Field project, which includes up to six wells, storage tanks, pump stations, treatment facilities, and a pipeline network. This well field, located in the Central Basin, would initially serve the Sunridge Specific Plan, Sunrise Corridor, Security Park, and Mather Field areas. Zone 40 water is allocated on a first-come, first-served basis. The SCWA intends to continue to extract groundwater to meet its customer demands within the limits of the negotiated sustainable yield of the Central Basin. The North Vineyard Well Field would ultimately be integrated with the Zone 40 surface water facilities to provide conjunctively managed surface and groundwater.

Surface water would be supplied by construction of a surface water diversion structure on the Sacramento River, treatment facilities, and a network of pipelines to convey surface water throughout the Zone 40 service area. SCWA has secured (and is in the process of securing additional) surface water entitlements that would allow SCWA to meet its projected 2030 water demands. Zone 40's conjunctive use program is sufficient to provide a long-term reliable water supply in normal, dry, and multiple-dry years.

The City conducted a water supply evaluation for the City of Rancho Cordova General Plan (2006) that concluded that water supplies are currently available to meet the water demands associated with buildout of the City's corporate limits, but the City would be required to secure additional water supplies to meet its projected 2050 demands. Increased water demands could result in increased groundwater pumping, an increased demand for new surface water supplies, an increased demand for recycling and water conservation programs, and/or an increased demand for local water purveyors to expand their service areas. Potential projects to secure additional supplies could include the negotiation of new water right transfers; construction of new diversion structures; expansion or construction of new water treatment plants; and construction of new potable-water and recycled-water distribution facilities.

#### **4.2.5.4 FUTURE ACTIONS WITHIN THE CENTRAL VALLEY AND CALIFORNIA-BIOLOGICAL RESOURCES**

California has both the highest absolute and fastest relative population growth in the United States. California's population is predicted to grow by almost 18 million by the year 2025, an increase of over 50%, the highest of any state (U.S. Census Bureau, 1996). This predicted population growth will continue to threaten vernal pool habitats, most of which are located on private land (USFWS, 2005). Approximately 73% of the land within the Central Valley is privately owned, and in areas containing vernal pool habitats, only 6% of the land area is in public ownership (California Department of Fish and Game, 1998). According to the 1997 National Resources Inventory (U.S. Department of Agriculture,

2000), California ranked sixth in the nation in amount of non-federal land developed between 1992 and 1997, at over 546,700 acres.

The rate of vernal pool habitat loss increased sharply between 1997 and 2005. If the current rate of annual habitat loss were to continue, vernal pool habitats (with the exception of vernal pool habitat preserves) would be completely eliminated from the Central Valley by 2087 (Holland, 2009).

## **4.3 CUMULATIVE EFFECTS ANALYSIS**

The CEQ established the following principles for determining the environmental consequences of cumulative effects:

- Address additive, countervailing, and synergistic effects;
- Look beyond the life of the action; and,
- Address the sustainability of resources, ecosystems, and human communities.

The cumulative effects analysis has two steps: identify the important cause-and-effect relationships between human activities and resources, ecosystems, and human communities; and, determine the magnitude and significance of cumulative effects. This analysis is conducted in the following sections for vernal pools, followed by the other resource areas collectively.

### **4.3.1 CAUSE-AND-EFFECT RELATIONSHIPS BETWEEN HUMAN ACTIVITIES AND RESOURCES, ECOSYSTEMS, AND HUMAN COMMUNITIES**

The 1993 Sacramento County General Plan changed the land use designation of large areas of central and eastern Sacramento County from agricultural use to residential, commercial, and industrial uses. Following this change, community and specific plans were written and approved that enabled residential communities to be developed in that part of the county. The 2006 City of Rancho Cordova General Plan reaffirmed this approach within the city limits by establishing a policy of rezoning the agricultural land of willing sellers to urban development (Rancho Cordova, 2006), and by the approval of several community and specific plans that have been and will continue to replace agricultural land with residential communities.

#### **4.3.1.1 BIOLOGICAL RESOURCES**

The threatened vernal pool fairy shrimp and the endangered vernal pool tadpole shrimp have been documented to occur at three of the parcels. At the three remaining parcels, they have the potential to occur due to suitable vernal pool habitat. Direct effects would occur through mortality to these species and permanent loss of vernal pool habitat, and indirect effects would occur through loss or alteration of upland and swale areas that support aquatic habitat.

The USFWS Recovery Plan identified 20 federal listed species, including the threatened vernal pool fairy shrimp and the endangered vernal pool tadpole shrimp, and 13 species of concern that occur exclusively or primarily within a vernal pool ecosystem in California and southern Oregon. The USFWS Recovery Plan identified habitat loss and fragmentation as the largest threat to the survival and recovery of these 33 species of plants and animals. The information presented below is also from the USFWS Recovery Plan.

## EFFECTS OF HABITAT FRAGMENTATION, ALTERATION, AND DEGRADATION

Habitat loss is generally a result of urbanization, agricultural conversion, and mining. Habitat loss also occurs in the form of habitat alteration and degradation as a result of changes to natural hydrology; invasive species; incompatible grazing regimes, including insufficient grazing for prolonged periods; infrastructure projects (e.g., roads, water storage and conveyance, utilities); recreational activities (e.g., off-highway vehicles and hiking); erosion; climatic and environmental change; and contamination. Habitat fragmentation generally is a result of activities associated with habitat loss (e.g., roads and other infrastructure projects that contribute to the isolation and fragmentation of vernal pool habitats). The loss, fragmentation and isolation of functional vernal pool ecosystems have threatened the continued existence of the listed species and species of concern addressed in the USFWS Recovery Plan.

Direct losses of habitat, as discussed in Section 4.2.3, generally represent irreversible damage to vernal pools. Alteration and destruction of the habitat as a result of urbanization, agriculture, and mining often disrupts the physical processes conducive to functional vernal pool ecosystems. The more severe the alteration and destruction, the more difficult it is to recover such areas in the future due to disruption of soil formations, hydrology, seed banks, and other components of a functional vernal pool ecosystem.

Agricultural conversion and urbanization, as well as the construction of infrastructure, including the construction of new highways, wastewater treatment plants, sewer lines, water supply projects, wind energy development projects, and other utility projects, have also contributed greatly to the destruction and fragmentation of vernal pool habitat. Habitat loss exacerbates the highly fragmented distribution of many of the listed species and species of concern, increases the vulnerability of adjacent populations of such species to random environmental events, and further disrupts gene flow patterns between populations of such species. Habitat fragmentation, alteration, and degradation may effectively serve as a barrier to dispersal for some species and may bisect the range of such species locally. Although genetic evidence suggests movement between historically disjunct vernal pool complexes was probably low (Hebert, 1974; Havel et al., 1990; Boileau and Hebert, 1991; Fugate, 1992; King, 1996; Davies et al., 1997), current fragmentation of originally intact vernal pool complexes could contribute significantly to the loss of genetic diversity among vernal pool plants and crustaceans, and reduce the likelihood of recolonization events following local population extinctions (Fugate, 1998). Some additional effects of fragmentation on vernal pool crustaceans may be indirect, through their effect on an associated species. For example, the fragmentation of vernal pool habitats may decrease habitat suitability for avian species, resulting in decreased use of smaller, isolated patches, especially those adjacent to incompatible land uses. Such an effect on birds can have consequences on the genetic stability of populations of listed branchiopods because avian species are dispersal agents for the vernal pool crustaceans (Proctor, 1964; Krapu, 1974; Swanson et al., 1974; Driver, 1981; Ahl, 1991).

No information exists regarding the minimum area of land (wetlands and uplands) needed to sustain viable populations of the listed species or species of concern. As populations become isolated and/or smaller, such patches have a higher propensity towards localized extinction events. Effective management regimes also become difficult and expensive to implement on isolated and/or small patches. Limiting the size of a preserved area or preserving an area geographically isolated from other preserves could preclude the long-term conservation of the species. To alleviate threats from isolated or small populations, measures must be taken to ensure functions and processes occur that favor sustainable populations and associations of listed species and species of concern, including pollinators for plants. Minor fragmentation of vernal pool habitats may effectively serve as a seed, pollen, and pollinator dispersal barrier between adjacent sites for many of the plants. Habitat fragmentation will also lead to reduced gene flow between populations and a potential for loss of genetic variation within populations and greater susceptibility to disease and mortality due to stochastic events (G. Platenkamp in litt., 2005).

## URBAN DEVELOPMENT

Aside from direct habitat loss from conversion to urban development, specific threats to vernal pools from adjacent urban developments include the following:

**Altered Hydrology.** Vernal pool hydrology can be altered directly when swale systems connected to vernal pools are dammed by physical barriers, such as roads and canals. These barriers can alter vernal pool hydrology both upstream and downstream of the barrier by truncating connectivity and flow. Vernal pool hydrology also may be altered by changes to patterns of surface and subsurface flow, depending on topography, precipitation, and soil types (Hanes et al., 1990; Hanes and Stromberg, 1998). The increased runoff and nuisance flows associated with urban development and impervious surfaces may result in altered hydrology of seasonal wetlands on and off-site. For example, stormwater drains, or the coverage of land surfaces with concrete, asphalt, or irrigated lawns, can alter the duration, volume discharge and frequency of surface flows through increased flooding and runoff.

The timing, frequency, and duration of inundation are critical to the survival of vernal pool species. Alterations of the hydrology can be particularly harmful to vernal pool species due to premature pool dry-down before the life cycles of the species are completed, preventing reproduction and disrupting gene flow. Flowing water that artificially removes plants and animals, including cysts, eggs or seeds, from the vernal pool complex also can prevent successful reproduction and disrupt gene flow. Water flow into vernal pools during the summer can significantly alter vernal pool species composition (Clark et al., 1998). Longer periods of inundation and/or changes in water depth could effectively change seasonal wetland functions (e.g., change from vernal pool to perennial/permanent wetlands) and floral composition (e.g., community changes from annual herbs to emergent macrophytes), which in turn may lead to the extirpation of some vernal pool plants. Longer periods of inundation may result in damage to the seed bank by facilitating seed rot, triggering unseasonable germination, or other effects. With respect to animals, a more permanent aquatic community may provide suitable habitat for introduced amphibians and fish. These species are significant predators of vernal pool fairy shrimp and other vernal pool crustaceans (Bauder, 1987).

**Invasive Species.** When invasive, nonnative species enter an ecosystem they can disrupt the natural balance resulting in reduction of biodiversity, degradation of habitats, alteration of native genetic diversity, and further threats to already endangered plants and animals (U.S. Environmental Protection Agency, 2005). The introduction of invasive species from encroaching urban development occurs through a variety of methods, such as escape of plants used for ornamental gardening, and dispersal via wind, water, animals, and motor vehicles. Vernal pool plant species may decline from competition with invading plant species for nutrients, light, and water.

**Contaminants.** Vernal pool plant and crustacean populations also have declined as a result of water contamination. Vernal pool crustaceans are highly sensitive to the chemistry of their vernal pool habitats (Belk, 1977, Eng et al., 1990, Gonzalez et al., 1996). Use of herbicides, fertilizers, and other chemicals for landscaped residential areas are common in urban settings. Such chemicals could have detrimental impacts on these species if they reach seasonal wetlands via storm or nuisance sheet flow. Specifically, herbicides may completely inhibit growth of listed plant species and plant species of concern. Fertilizer contamination can lead to the eutrophication of vernal pools, which can kill vernal pool crustaceans by reducing the concentration of dissolved oxygen (Rogers, 1998). Fertilizers may benefit the growth of invasive plants and could effectively lead to localized extirpation of listed plant and animal species and species of concern addressed in the USFWS Recovery Plan resulting from competition, thatch buildup, and effects of eutrophication.

Contamination of vernal pools from adjacent areas may injure or kill vernal pool crustaceans and plants either directly or indirectly via pathways including the alteration of chemical properties of a pool (e.g., pH) and inhibiting and/or disrupting biochemical processes creating less suitable conditions for reproduction or germination and growth. Toxic chemicals, such as petroleum products, pesticides, herbicides, fertilizers and detergents, may wash into vernal pools during the course of activities on adjacent areas. Vernal pools adjacent to existing developments may be contaminated from roadway contaminants in surface runoff (e.g., grease, oil, and heavy metals). Pesticides used for mosquito abatement may also kill or injure fairy shrimp.

**Garbage and trash, recreational use, and vandalism.** As vernal pool habitats become increasingly rare and urban development expands, threats from disposal of garbage and trash, off-road vehicle use, and vandalism increase. People dump unwanted items such as trash, tires, and appliances in vernal pool areas. Not only can these items release toxic substances into the environment and contaminate water and soil (Ripley et al., 2004), but they can directly affect species by crushing them (Hathaway et al., 1996) and restricting photosynthesis in plants by shielding the sun. Waste material also may disrupt the natural hydrologic flow.

Certain recreational activities threaten vernal pool ecosystems. Many vernal pool species are adversely affected by off-road vehicle use, hiking, and bicycling. When off-road vehicles and bicycles cut through vernal pool complexes, they may impair hydrological functions by displacing soil causing erosion or truncating swale connectivity, thus resulting in hydrological changes. Similarly, some off-road enthusiasts, bicyclists, etc., may create dirt jump ramps, which also could result in the aforementioned effects. Additionally these activities may result in burial of seeds and cysts of plants and animals so they have decreased viability. Plants and animals may be crushed and killed as a result of careless site users. Trampling also may reduce the reproductive output of vernal pool species. Recreational users also may introduce, or facilitate spread of, seeds of invasive plants that could be attached to vehicles, tires, or shoes and clothing. Germination of these seeds may result in competition with vernal pool plants and could further change the vegetative composition of the landscape.

**Loss of pollinator species.** A potential threat to vernal pool plants is the decline of essential pollinators due to habitat fragmentation and the loss of upland habitat that supports pollinator species. Habitat loss and degradation interferes with reproduction and dispersal of pollinators. Pollinators for most vernal pool plant species have not been identified, so the status of their habitat cannot be assessed. It is likely that many of these pollinators require the uplands surrounding vernal pools for completion of their life cycle. For insect pollinated plants, the reduction of available habitat for pollinators could decrease pollinator populations, which could reduce reproductive success of the plants. Similarly, many of these pollinators (e.g., andrenid bees) do not disperse great distances (Davis, 1998, Leong, 1994, Thorp and Leong, 1995), so removal or modification of available vernal pool and upland habitat (e.g., through urban development or the accretion of a dense thatch layer preventing access to burrowing sites) could minimize their ability to reproduce and disperse. If pollinators are unable to disperse, or habitat loss causes a reduction in pollinator populations, then it is likely genetic variability and reproductive success of insect pollinated plant species would be reduced, thus affecting the long-term viability of the taxon. Diminished reproductive success could lead to reduced numbers and susceptibility to extinction.

#### **4.3.1.2 SURFACE AND GROUNDWATER SUPPLY**

As a result of the urban expansion determined by the 1993 General Plan, SCWA expanded the boundary of Zone 40 and updated their Water Supply Master Plan to encompass these lands that were now within the Urban Services Boundary, so that surface and groundwater supplies could be developed to serve this area. SCWA is responsible for constructing Zone 40 facilities, and would initially serve the project site with groundwater from the North Vineyard Well Field project. Because Zone 40 water is allocated on a

first-come, first-served basis, the water available to the project under the Zone 40 WSMP and the Zone 41 UWMP could be affected by rapid development in other portions of Zone 40 or by expansion of the City of Elk Grove's urban services area. The long-term plan to also supply Zone 40 with surface water has made significant progress: the Sacramento River intake facility has recently been completed, and the Vineyard Water Treatment Plant is on schedule to be completed in late 2011.

#### **4.3.1.3 SURFACE WATER QUALITY, AIR QUALITY, TRAFFIC AND TRANSPORTATION, NOISE, AND VISUAL RESOURCES**

The 1993 General Plan changed the land use designation of large areas of central and eastern Sacramento County from agricultural use to residential, commercial, and industrial uses. Following this change, community and specific plans were written and approved that enabled residential communities to be developed in that part of the county. The 2006 City of Rancho Cordova General Plan reaffirmed this approach within the city limits by establishing a policy of rezoning the agricultural land of willing sellers to urban development (Rancho Cordova, 2006), and by the approval of several community and specific plans that have been and will continue to replace agricultural land with residential communities.

This substantial change in land use affects several resource areas, including surface water quality, air quality, traffic and transportation, noise, and visual resources, which are unavoidably affected by urban growth. Downstream surface water quality for Morrison and Laguna Creeks will likely deteriorate as the land use changes from low intensity agriculture to medium density urban development. Sacramento County's urban streams are impacted by urban runoff contaminants, primarily from roadways and the use of pesticides and herbicides for landscaping. Sacramento regional air quality and adjacent traffic levels of service are both exhibiting significant adverse existing conditions. Roadway noise is an accepted consequence of urban life, but not of rural life. Similarly, the conversion of rural, undeveloped, or agricultural land to urban land uses, would inexorably change the visual character of the site, and create light, glare, and skyglow effects that are produced in urban areas.

Also in regard to air quality, the SMAQMD recommends a buffer distance of 4 miles from the location of receptors to a rendering plant, and the project is less than 2 miles from the Sacramento Rendering Company. Currently, nearby residents have been lodging complaints with regard to odor from the rendering plant.

#### **4.3.1.4 PUBLIC HEALTH**

As a result of the urban expansion determined by the 1993 Sacramento County General Plan, and reaffirmed by the 2006 City of Rancho Cordova General Plan, large expanses of wetlands would be leveled and replaced with structures, roads, or landscaped areas. However, the large numbers of new residents who would reside near the remaining wetlands would be exposed to the hazards of mosquitos.

#### **4.3.1.5 CULTURAL RESOURCES**

As a result of the urban expansion determined by the 1993 Sacramento County General Plan, and reaffirmed by the 2006 City of Rancho Cordova General Plan, large expanses of land would be graded for development, and as-yet-unidentified archaeological sites or resources could be destroyed.

#### **4.3.1.6 CLIMATE CHANGE**

Climate change is a global phenomenon caused by large-scale GHG emissions from a variety of human activities; GHG emissions have accelerated in the last century.

### 4.3.2 MAGNITUDE AND SIGNIFICANCE OF CUMULATIVE EFFECTS

The magnitude and significance of the environmental consequences of the Proposed Project Alternative on biological resources, surface and groundwater supply and quality, air quality, traffic and transportation, noise, public health, visual resources, cultural resources, and climate change is determined in the context of, and when added to, other past, present, and reasonably foreseeable actions. Only impacts that contribute to an existing adverse cumulative impact are evaluated. Table 4-6 lists the identified impacts for each resource area, the project's contribution to the larger impact, and the existing adverse cumulative impact.

Table 4-6 Significance of Project Contributions to Existing Adverse Cumulative Impacts		
Impacts	Project Contribution	Adverse Cumulative Impact
Biological Resources		
Impact 3.2-1. An adverse effect on a population of threatened, endangered, or candidate species	The Proposed Project Alternative would result in direct impacts to vernal pool habitat value from the loss of 20 acres of vernal pool habitat, a sensitive biological habitat, the direct loss of two special-status species that occur within the project site, the threatened vernal pool fairy shrimp and the endangered vernal pool tadpole shrimp, and the substantial loss to other populations of vernal pool plant and animal species. Indirect effects would occur through loss or alteration of upland and swale areas that areas that are important in maintaining the habitat value of vernal pools	The historic local, regional and statewide loss of vernal pool habitat has result in an adverse impact to vernal pool habitat and species. Implementation of the project would have a cumulatively considerable contribution to this impact.
Impact 3.2-2. A net loss in the habitat value of sensitive biological habitat		
Impact 3.2-3. Substantial impedance to the movement or migrate of fish or wildlife		
Impact 3.2-4. Substantial population loss of any native fish, wildlife, or vegetation		
Hydrology, Water Quality, Water Supply, and Groundwater		
Impact 3.3-2. Potential for discharges that affect surface water quality.	With six parcels totaling 3,258 single-family homes, the Proposed Project Alternative would result in a cumulatively considerable contribution to decreased surface water quality in Morrison and Laguna Creeks.	Current urban development in Sacramento County contributes to the degradation of Morrison and Laguna Creeks.
Impact 3.3-3 - Potential for changes in groundwater elevations around the Elk Grove Cone of Depression	The Proposed Project Alternative would be supplied with Zone 40 water from the North Vineyard Well Field, resulting in potential changes in groundwater elevations, and the rate of contaminant plume migration. In the long-term, the Proposed Project Alternative may also be supplied with surface water. Both sources contribute to the need for additional long-term regional surface and groundwater supplies.	Current and planned urban developments in Sacramento County contribute to the demand for new surface and groundwater supplies.
Impact 3.3-4 - Potential for changes in groundwater elevations adjacent to the proposed well field		
Impact 3.3-5. Potential for changes in groundwater elevations in and around known contaminant plumes		
Impact 3.3-6. Potential for changes in the rate of contaminant plume migration		
Notes: NO <sub>x</sub> – Nitrous Oxide PM <sub>10</sub> – Particulate matter 10 microns in diameter or smaller ROG – Reactive Organic Gas		
PM <sub>2.5</sub> – Particulate matter 2.5 microns in diameter or smaller SRC - Sacramento Rendering Company		



**Table 4-6**  
**Significance of Project Contributions to Existing Adverse Cumulative Impacts (continued)**

Impacts	Project Contribution	Adverse Cumulative Impact
<b>Hydrology, Water Quality, Water Supply, and Groundwater (continued)</b>		
Impact 3.3-9. Changes in groundwater elevation adjacent to the proposed well field		
Impact 3.3-10. Increased need for development of long-term regional surface and groundwater supplies		
<b>Air Quality</b>		
Impact 3.4-2: Exposure of future residents to odors from the Sacramento Rendering Company (SRC). Impact 3.4-3: Long-term increase in ROG, NO <sub>x</sub> and PM <sub>10</sub> emissions.	The Proposed Project Alternative would add to the number of residents who live within the buffer zone (4 miles) of the SRC, and would increase in ROG, NO <sub>x</sub> , and PM <sub>10</sub> emissions, resulting in cumulatively considerable contributions to these impacts.	Existing adverse impacts to air quality are significant. Sacramento County is not in attainment for the federal air quality standards for ozone, PM <sub>10</sub> , and PM <sub>2.5</sub> , nor the state PM <sub>10</sub> and PM <sub>2.5</sub> standards.  The county is designated a “serious” nonattainment area for the federal 8-hour ozone standard, and is designated a “serious” nonattainment area for the state 1-hour ozone standard. Motor vehicles emit over 75% of the ozone precursors in Sacramento.
<b>Traffic and Transportation</b>		
Impact 3.7-1. Reduction of Level of Service:	The Proposed Project Alternative would increase peak-hour and daily traffic volumes, resulting in a cumulatively considerable contribution to level of service decreases at various roadway segments, intersections, and freeway ramps, in the area of analysis.	Several major road segments in Rancho Cordova currently operate at unacceptable LOS E and F levels. Implementation of the project, in conjunction with other planned, proposed, and approved projects in the vicinity, would result in substantial increases to peak-hour and daily traffic volumes.
<b>Noise</b>		
Impact 3.8-4. Project-generated increases in traffic noise levels on area roadways	The Proposed Project Alternative would increase peak-hour and daily traffic volumes, which would result in a cumulatively considerable contribution to traffic noise levels on area roadways.	Implementation of the project, in conjunction with other planned, proposed, and approved projects in the vicinity, would result in substantial increases in traffic noise levels on area roadways.
Notes: NO <sub>x</sub> – Nitrous Oxide PM <sub>10</sub> – Particulate matter 10 microns in diameter or smaller ROG – Reactive Organic Gas PM <sub>2.5</sub> – Particulate matter 2.5 microns in diameter or smaller SRC - Sacramento Rendering Company		

**Table 4-6  
Significance of Project Contributions to Existing Adverse Cumulative Impacts (continued)**

<b>Impacts</b>	<b>Project Contribution</b>	<b>Adverse Cumulative Impact</b>
<b>Public Health</b>		
Impact 3.11-3. Human health hazards associated with mosquito-borne diseases	The Proposed Project Alternative would eliminate wetlands, but it would also bring in large numbers of new residents who would reside near the remaining wetlands, resulting in a cumulatively considerable contribution to a human health hazard.	Although wetlands would be eliminated by the Proposed Project Alternative, as well as by other planned, proposed, and approved projects in the vicinity, these projects would also bring in large numbers of residents who would reside near the remaining wetlands.
<b>Visual Resources</b>		
Impact 3.13-3. Degradation of visual character Impact 3.13-5. New light and glare effects Impact 3.13-6. New skyglow effects	The Proposed Project Alternative would change 742 acres of rural, undeveloped land to urban land uses, degrading the rural visual character of the site and surrounding area, and resulting in light, glare and skyglow effects.	The conversion of other planned, proposed, and approved projects in the vicinity have resulted in and will continue to result in significant adverse impacts to visual resources.
<b>Cultural Resources</b>		
Impact 3.14-3. Potential damage to as-yet-undiscovered prehistoric sites or Native American burials	The Proposed Project Alternative could result in the destruction of as-yet-unidentified archaeological sites or resources.	Planned, proposed, and approved projects in the vicinity could also result in the destruction of previously unidentified archaeological sites or resources.
<b>Climate Change</b>		
Impact 3.16-1. Short-term increase in construction-related GHG emissions Impact 3.16-2. Long-term increase in GHG emissions	The Proposed Project Alternative would increase short-term and long-term GHGs, resulting in cumulatively considerable contributions to these impacts.	Existing adverse impacts to GHGs are significant. Project implementation would contribute to this significant impact.
Notes: NO <sub>x</sub> – Nitrous Oxide PM <sub>10</sub> – Particulate matter 10 microns in diameter or smaller ROG – Reactive Organic Gas		
PM <sub>2.5</sub> – Particulate matter 2.5 microns in diameter or smaller SRC - Sacramento Rendering Company		

### 4.3.2.1 BIOLOGICAL RESOURCES

Project implementation would result in the placement of fill material into jurisdictional waters of the United States, including wetlands subject to USACE jurisdiction under the federal CWA. Wetlands and other waters of the United States that would be affected by project implementation include vernal pools, seasonal wetlands and seasonal wetland swales, seeps, drainage channels, ditches, and ponds.

The potential for a resource or ecosystem to sustain its structure and function depends on its resistance to stress and its ability to recover. Determining the magnitude and significance of the environmental consequences of the Proposed Project Alternative in the context of, and when added to, other past, present, and reasonably foreseeable actions, is key to determining the impact on resources.

Under Section 4.2.1, Past Actions, and Section 4.2.3, Present Actions, the loss of vernal pool habitat acreage and diversity in the Central Valley was described and quantified: an 87% reduction in the original habitat acreage (Holland, 1998b) and a 15% to 33% reduction of the original biodiversity of vernal pool crustaceans (King, 1998). These direct losses of habitat generally represent irreversible

damage to vernal pools, and alterations as a result of urbanization often disrupt the physical processes conducive to functional vernal pool ecosystems. As discussed above, the more severe the alteration and destruction, the more difficult it is to recover such areas in the future due to disruption of soil formations, hydrology, seed banks, and other components of a functional vernal pool ecosystem.

Past, present and reasonably foreseeable future projects considered in the cumulative impact analysis were identified in Table 4-4. Information on indirect impacts, preservation, and mitigation was not available for many of the proposed projects listed in Table 4-3; in these cases, a 1:1 mitigation ratio was assumed for direct impacts. Acreage information in general should be considered estimates as the acreage may change. Mitigation was assumed to occur outside of the Mather Core Area, as there are presently no compensatory mitigation banks or only a few potential vernal pool restoration areas in the Mather Core Area.

As indicated in Table 4-4, based on the data currently available, 360 acres of direct impact to waters of the U.S. have or will foreseeably occur within the Mather Core Area. This includes direct impacts to 209 acres of vernal pools and 151.63 acres of other waters. Information regarding indirect impacts is very limited, but at least an additional 38 acres of vernal pools and 6 acres of other aquatic habitats have or will be indirectly impacted. Of the aquatic habitats contained within the Mather Core Area, 22% of the vernal pools will be preserved on-site, and 44% of the other waters will be preserved on-site.

For the 405 acres of waters of the U.S. that have been or are proposed to be impacted, 371 acres have been or are proposed to be created or restored as compensatory mitigation, representing a ratio of 0.92:1. Most of the compensatory mitigation was not or will not be initiated until after or around when the impacts occur, which could result in substantial additional temporal losses as aquatic habitat restoration and creation is not always successful upon first attempt. Further, only approximately 56 acres of the vernal pool compensatory mitigation has been or is proposed to be mitigated within the Mather Core Area, and approximately 27 acres of vernal pools that have been created in the core area are exhibiting only limited success according to recent monitoring reports. As approximately 75.6% of the vernal pool compensatory mitigation has or will occur outside the Mather Core Area, a permanent loss of vernal pool functions would occur in the Mather Core Area, and the habitat preservation goals of the USFWS Recovery Plan would not be met.

Other reasonably foreseeable projects, including Heritage Falls and Sunridge Village, involve considerably less preservation than the Proposed Project Alternative. Development of the Heritage Falls project would preserve vernal pools, including one containing a population of Sacramento Orcutt grass (*Orcuttia viscida*), and a tributary to Morrison Creek. However as currently proposed, all on-site waters of the U.S. would be destroyed. At Sunridge Village, the conceptual strategy calls for the preservation of 12.66 acres of aquatic habitats within a 216-acre preserve. The preserve would include the main channel of Morrison Creek and 5.85 acres of vernal pools, and would provide connectivity between the eastern and western extents of the regional preserve. However, as currently proposed, Morrison Creek would be re-routed and channelized under the power lines, the preserve area would be reduced to 86.8 acres, and an additional 6.36 acres of aquatic habitats, including 3.5 acres of vernal pools, would be lost. This would substantially decrease the level of connectivity between project avoidance areas and reduce the viability of the regional preserve corridor and the Morrison Creek watershed.

The impacts brought forward for a cumulative impact analysis from the biological impact analyses in Section 3 are analyzed below.

### **Impact 3.2-1- An adverse effect on a population of threatened, endangered, or candidate species**

According to the USFWS, no information exists regarding the minimum area of land (wetlands and uplands) needed to sustain viable populations of the 33 listed species or species of concern. But it is known that as populations become isolated and/or smaller, such patches have a higher propensity towards localized extinction events. Minor fragmentation of vernal pool habitats may effectively serve as a seed, pollen, and pollinator dispersal barrier between adjacent sites. Habitat fragmentation also leads to reduced gene flow between populations and a potential for loss of genetic variation within populations and greater susceptibility to disease and mortality due to stochastic events (G. Platenkamp in litt., 2005).

As described in Section 3, implementation of mitigation measures would reduce direct and indirect impacts on the threatened vernal pool fairy shrimp and the endangered vernal pool tadpole shrimp, the federally-listed species that occur within the project area. The impact was reduced to less than significant based on mitigation that replaced the existing vernal pool habitat with off-site constructed vernal pools. As described above, considerable concerns exist regarding the creation of off-site constructed vernal pools, both with regard to their adequate replacement of habitat value, as well as their long-term viability. In addition, concerns exist regarding the loss of the original vernal pool habitats that are present even when mitigation results in successful vernal pool creation.

While the successful creation of constructed vernal pools off-site might replace the local vernal pools, fragmentation and resulting biodiversity concerns remain for the Central Valley vernal pool complex from that loss. Therefore, while there is mitigation planned to replace the loss of vernal pool acreage with constructed vernal pools, two major concerns remain: that the performance of off-site constructed pools would not adequately replace the habitat values of the original vernal pools, and that, even if the habitat values were being replaced, the vernal pool complex may still be degraded.

Therefore, even with implementation of the proposed mitigation, the project would result in a cumulatively considerable contribution to the significant loss or displacement of these vernal pool species and their habitat as described above. The cumulative impacts from this project and past, present, and reasonably foreseeable future projects would have a substantial adverse effect on two federally-listed vernal pool crustaceans and contribute to the decline of these species.

### **Impact 3.2-2 -A net loss in the habitat value of sensitive biological habitat**

Biodiversity used to result from the periodic flooding of the Central Valley as water would flow between vernal pools and vernal pool complexes. The widespread alteration and confinement of flood flows in the Central Valley has drastically decreased these occurrences, resulting in avian species becoming the primary dispersal agents. Fragmentation of vernal pool habitats might decrease habitat suitability for avian species which are less likely to use smaller, isolated patches, especially those adjacent to incompatible land uses. Such an effect on birds can have consequences on the genetic stability of populations of branchiopods because avian species are dispersal agents for vernal pool crustaceans (Proctor, 1964, Krapu, 1974, Swanson et al., 1974, Driver, 1981, Ahl, 1991).

Loss of vernal pool habitat from implementation of the project in combination with projected losses from past, present and reasonably foreseeable future projects constitute a cumulatively substantial reduction in vernal pool habitat in the region. Along with direct impacts, indirect impacts of the project would also result from fragmentation of the habitat, degradation of water quality, hydrologic alterations, and reduction of habitat functions of on-site downstream and wetlands in the project vicinity. Therefore, the

project would result in significant cumulative impacts to the loss of habitat value of sensitive vernal pool ecosystems in the Mather Core Area.

#### **Impact 3.2-3 - Substantial impedance to the movement or migration of fish or wildlife**

Historically, these vernal pool complexes provided dispersal of vernal pool crustaceans during large-scale flooding which allowed these species to colonize different vernal pools and vernal pool complexes. Colonization has been reduced by (1) the alteration of natural hydrology which has reduced large-scale flooding, (2) the loss of vernal pool habitat, and (3) the hydrologic isolation of the remaining vernal pools. Therefore, there would be a significant cumulative impact with respect to dispersal of vernal pool species.

#### **Impact 3.2-4 - Substantial population loss of any native fish, wildlife, or vegetation**

Project implementation would result in direct impacts to special-status wildlife and the loss of suitable habitat. Indirect impacts would also occur through degradation of suitable habitat due to site alteration. In combination with projected losses from past, present and reasonably foreseeable future projects, these impacts would result in a cumulatively substantial loss of populations of vernal pool wildlife species, including federally-listed vernal pool crustaceans that occur in the project area.

### **4.3.2.2 SURFACE WATER AND GROUNDWATER SUPPLY**

The modeling conducted for the Sunridge Specific Plan included cumulative condition scenarios, and Demand Scenarios 2, 3, 4, 5, 4a, and 5a all assumed development beyond the Sunridge Specific Plan would take place. Demand Scenario 5a corresponds to the groundwater elevation variations and stabilization levels expected to result from implementation of the Water Forum Agreement, since Scenario 5a reflects the quasi-equilibrium state of the groundwater basin resulting from anticipated year 2030 levels of land use and water demand with implementation of the long-term average operational yield limit (273,000 af annually) for the south county basin and the conjunctive use measures prescribed by the Water Forum Plan.

#### **“CUMULATIVE WITHOUT PROJECT” BASELINE CONDITION**

The year 2030 groundwater model provided an estimate of the resulting quasi-equilibrium state of the groundwater basin resulting from anticipated year 2030 levels of land use and water demand, as well as various other developments in Sacramento County (including elements of the Water Forum Plan). The year 2030 model with elements of the Water Forum included was selected for two principal reasons:

- First, the Water Forum Plan reflects projected land use and water demand throughout Sacramento County in the year 2030 pursuant to the approved Sacramento County 1993 General Plan Update.
- Second, the Water Forum Plan represented the most likely long-term plan for development of groundwater and surface water supplies in Sacramento County south of the American River and was the proposed mitigation for the potential impacts to the groundwater basin resulting from planned development identified in the 1993 General Plan Update.

In the “Cumulative without Project” baseline condition, all planned development in the Sacramento County 1993 General Plan Update to the year 2030 is assumed to occur with the exception of Mather

Field, Sunrise Corridor, Security Park, and the Sunridge Specific Plan and Sunrise-Douglas Community Plan service areas. Development in these areas is held at year 1990 (i.e., “existing without project conditions”) in the “Cumulative without Project” baseline condition. The “Cumulative without Project” baseline condition further assumes water demands within all areas of the analysis area other than Mather Field, Sunrise Corridor, Security Park, and the Sunridge Specific Plan and groundwater and surface water through implementation of the Zone 40 Conjunctive Use Plan. (Zone 40 will implement the Water Forum Plan south of the American River within its boundaries.) Existing water demands at Mather Field, Sunrise Corridor, Security Park, and the Sunridge Specific Plan and Sunrise-Douglas Community Plan service areas are met exclusively by groundwater in the “Cumulative without Project” baseline condition.

The resulting groundwater elevations over the 70-year historical record of known hydrologic conditions established the “Cumulative without Project” baseline condition against which the impacts of the proposed well field were compared. The “Cumulative without Project” baseline condition is representative of what would reasonably be expected to occur absent implementation of the proposed water supply project.

Under the “Cumulative without Project” baseline condition, groundwater levels near the Elk Grove cone of depression vary from -70 to -100 feet below msl between wet and dry years, respectively. Groundwater levels near the proposed North Vineyard Well Field vary between +20 feet above msl and -10 feet below msl between wet and dry years respectively. Groundwater levels near the SDCD/SRSP project area vary from +50 to +20 feet above msl between wet and dry years, respectively. Similar to the fall 1998 “Snapshot in Time” groundwater conditions, groundwater flow under baseline conditions is from the east to the west/southwest toward the Elk Grove cone of depression.

### **Impact 3.3-3 - Potential for changes in groundwater elevations around the Elk Grove Cone of Depression**

Under Demand Scenarios 2, 3, 4a, and 5a, groundwater elevations in and around the Elk Grove cone of depression would remain essentially unchanged as a result of the proposed well field under the Proposed Project Alternative. Therefore, the Proposed Project Alternative impacts under these scenarios would not be considered a cumulatively considerable contribution to lowered groundwater levels around the Elk Grove cone of depression.

Demand Scenarios 4 and 5 would result in a drop in groundwater elevation of between 10 and 15 feet in and around the Elk Grove cone of depression compared to baseline conditions under the Proposed Project Alternative. This decrease would exceed the objective of maintaining levels within 10 feet of baseline, and would also exceed the groundwater stabilization levels identified in the Water Forum Plan. Therefore, the Proposed Project Alternative impacts under Demand Scenarios 4 and 5 are considered a cumulatively considerable contribution to lowered groundwater levels around the Elk Grove cone of depression. Under Scenarios 4a and 5a, the Zone 40 conjunctive use program prescribed by the Water Forum Plan would mitigate these impacts. Impacts upon groundwater elevations at the Elk Grove cone of depression under the cumulative demand scenarios are described more fully below.

### **DEMAND SCENARIO 2 AND 3 ANALYSIS**

Under Demand Scenarios 2 and 3, wet and dry year groundwater elevations in and around the Elk Grove cone of depression would differ by 30 feet for Aquifers 1 and 2, similar to baseline conditions.

Under fall 1998 conditions, groundwater levels near the Elk Grove cone of depression were approximately -60 feet msl, and under baseline conditions without implementation of the project, groundwater elevations are -100 feet msl. Implementation of Demand Scenarios 2 and 3 would also

result in groundwater levels around -100 feet msl. These elevations do not exceed the groundwater stabilization levels identified in the Water Forum Plan. Therefore, the Proposed Project Alternative impacts under Demand Scenarios 2 and 3 are not considered a cumulatively considerable contribution to lowered groundwater levels around the Elk Grove cone of depression.

#### **DEMAND SCENARIO 4 ANALYSIS**

Under Demand Scenario 4, wet and dry year groundwater and piezometric elevations in and around the Elk Grove cone of depression would differ by approximately 30 feet for Aquifers 1 and 2, similar to baseline conditions.

Under fall 1998 conditions, groundwater levels near the Elk Grove cone of depression were approximately -60 feet msl, and under baseline conditions without implementation of the project, groundwater elevations are -100 feet msl. Implementation of Demand Scenario 4 would result in groundwater levels around -110 feet msl. This decrease in groundwater elevation exceeds the objective of maintaining levels within 10 feet of baseline, and also exceeds the groundwater stabilization levels identified in the Water Forum Plan. Therefore, the Proposed Project Alternative impacts under Demand Scenario 4 are considered a cumulatively considerable contribution to lowered groundwater levels around the Elk Grove cone of depression.

#### **DEMAND SCENARIO 5 ANALYSIS**

Under Demand Scenario 5, wet and dry year groundwater elevations in and around the Elk Grove cone of depression would differ by 30 feet for Aquifer 1, and piezometric surface elevations would differ by 20 feet for Aquifer 2. The magnitude of these fluctuations between wet and dry years is not substantially different from baseline conditions.

Under fall 1998 conditions, groundwater levels near the Elk Grove cone of depression were approximately -60 feet msl, and under baseline conditions without implementation of the project, groundwater elevations are -100 feet msl. Implementation of Demand Scenario 5 would result in groundwater levels around -110 feet msl. This decrease in groundwater elevation exceeds the objective of maintaining levels within 10 feet of baseline, and also exceeds the groundwater stabilization levels identified in the Water Forum Plan. Therefore, the Proposed Project Alternative impacts under Demand Scenario 5 are considered a cumulatively considerable contribution to lowered groundwater levels around the Elk Grove cone of depression.

#### **DEMAND SCENARIO 4A ANALYSIS**

Under Demand Scenario 4a, wet and dry year groundwater elevations in and around the Elk Grove cone of depression would differ by about 30 feet for Aquifer 1 and piezometric surface elevations would differ by about 40 feet for Aquifer 2. The magnitude of these fluctuations is not substantially different from baseline conditions for all alternatives.

Under fall 1998 conditions, groundwater levels near the Elk Grove cone of depression were approximately -60 feet msl, and under baseline conditions without implementation of the project, groundwater elevations are -100 feet msl. Implementation of Demand Scenario 4a would result in groundwater levels around -100 feet msl, at the Elk Grove cone of depression. These elevations do not exceed the groundwater stabilization levels identified in the Water Forum Plan. Therefore, the Proposed Project Alternative impacts under Demand Scenario 4a are not considered a cumulatively considerable contribution to lowered groundwater levels around the Elk Grove cone of depression.

## DEMAND SCENARIO 5A ANALYSIS

Under Demand Scenario 5a, wet and dry year groundwater elevations in and around the Elk Grove cone of depression differ by about 30 feet for both Aquifers 1 and 2. The magnitude of these fluctuations is similar to baseline conditions for all alternatives.

Under fall 1998 conditions, groundwater levels near the Elk Grove cone of depression were approximately -60 feet msl, and under baseline conditions without implementation of the project, groundwater elevations are -100 feet msl. Implementation of Demand Scenario 5a would result in groundwater levels around -100 feet msl at the Elk Grove cone of depression. These elevations do not exceed groundwater stabilization levels identified in the Water Forum Plan. Therefore, the Proposed Project Alternative impacts under Demand Scenario 5a are not considered a cumulatively considerable contribution to lowered groundwater levels around the Elk Grove cone of depression.

### Impact 3.3-4 - Potential for changes in groundwater elevations adjacent to the proposed well field

Groundwater elevations in the vicinity of the proposed North Vineyard Well Field would decline by 10 feet or less relative to the baseline under Demand Scenarios 4a, and 5a, because these scenarios assume implementation of the Zone 40 conjunctive use program prescribed by the Water Forum Plan that would mitigate these impacts. Therefore, the Proposed Project Alternative impacts under these scenarios would not be a cumulatively considerable contribution to lowered groundwater elevations adjacent to the proposed well field.

However, groundwater elevations in Aquifer 1 in the vicinity of the proposed well field would decline by 10 feet or more relative to the baseline under Demand Scenarios 2, 3, 4, and 5, resulting in significant impacts. This impact, centered on the well field, would range from a 10-15-foot decrease in Scenarios 2 and 3 (near the margin of acceptable impacts), up to a 25-45-foot decrease in Scenarios 4 and 5 (which substantially exceeds the 10-foot drop from the baseline significance threshold). This decline in groundwater elevations could result in substantial economic impacts to shallow domestic well operators in the vicinity of the proposed well field, due to increased pumping (energy) costs or the possible need to deepen existing wells to obtain water. It is anticipated that approximately 130 existing shallow domestic wells would be adversely affected under Scenario 4, and approximately 790 wells would be adversely affected under Scenario 5. In addition, the decline in groundwater elevations around the proposed well field exceeds the groundwater stabilization levels identified in the Water Forum Plan under Scenarios 4 and 5. Therefore, the Proposed Project Alternative impacts under Demand Scenarios 2, 3, 4 and 5 are considered a cumulatively considerable contribution to lowered groundwater adjacent to the proposed well field. Impacts upon groundwater elevations adjacent to the proposed well field under the cumulative demand scenarios are described more fully below.

## DEMAND SCENARIO 2 AND 3 ANALYSIS

Under Demand Scenarios 2 and 3, groundwater elevations in Aquifer 1 would be about 30 feet lower in the vicinity of the proposed well field in dry years compared to wet years. Piezometric surface elevations in Aquifer 2 also show a 30-foot difference under the same conditions. A small cone of depression would form in Aquifer 2, centered around the proposed well field. The magnitude of this fluctuation between wet and dry years is the same as that estimated under the baseline condition.

Comparison of Demand Scenarios 2 and 3 (extraction of approximately 10,800 af/yr) to baseline conditions shows that in and around the proposed well field site, wet and dry year elevations in Aquifer 1 would be approximately 10 to 15 feet lower than baseline conditions, which may begin to negatively



impact the shallow domestic wells of adjacent landowners. Piezometric surface elevations in Aquifer 2 in wet and dry years would be approximately 40 feet lower than baseline conditions. Lowering of the piezometric surface elevation would primarily result from extraction of groundwater from Aquifer 2. However, the impact on the piezometric surface of Aquifer 2 does not have the same significance as an impact of similar magnitude on groundwater elevations in Aquifer 1 because municipal wells, which extract groundwater from Aquifer 2, are drilled sufficiently deep to withstand groundwater level fluctuations of the magnitude envisioned under this scenario. Further, the magnitude of the impact diminishes rapidly with distance from the proposed well field site in both Aquifer 1 and Aquifer 2.

If groundwater (Aquifer 1) levels decline by more than 10 feet during groundwater extraction activities, potentially significant groundwater resource impacts could occur. A drop of groundwater elevations of 10 feet or more could adversely affect nearby shallow domestic wells in and around the proposed well field because pumping costs could increase.

Under Demand Scenario 2 and 3, the physical effect of the proposed project is the lowering of groundwater levels in and around the proposed well field by 10 to 15 feet. The economic consequence of this physical impact is that nearby landowners with shallow domestic wells may experience increased groundwater pumping costs or may have to deepen their wells in order to continue to extract groundwater. Therefore, the Proposed Project Alternative impacts under Demand Scenarios 2 and 3 are considered a cumulatively considerable contribution to lowered groundwater elevations in and around the proposed well field.

#### **DEMAND SCENARIO 4 ANALYSIS**

Under Demand Scenario 4, groundwater elevations and piezometric surface elevations in and around the proposed well field would be about 30 feet lower in dry years as compared to wet years. A small cone of depression would form in Aquifer 2 centered on the proposed well field. The magnitude of these fluctuations is the same as that estimated under the baseline condition.

Comparison of Demand Scenario 4 to baseline conditions shows that in and around the proposed well field site wet and dry year groundwater elevations would be approximately 25 feet and 20 feet lower than baseline conditions, respectively. Groundwater extraction proposed in Demand Scenario 4 could lower groundwater levels in Aquifer 1 to the point where approximately 130 local shallow domestic wells could be taken out of operation and/or would require deepening to continue operation. Piezometric surface elevations would be approximately 70 feet lower than baseline conditions in both wet and dry years under Demand Scenario 4. This impact on the piezometric surface of Aquifer 2 does not have the same significance as an impact of similar magnitude on Aquifer 1 because municipal wells, which extract groundwater from Aquifer 1, are drilled sufficiently deep to withstand groundwater level fluctuations of the magnitude envisioned under this scenario. However, a consequence of lowering the piezometric surface elevation by 70 feet in Aquifer 2 would be the approximate 20-foot lowering of groundwater elevations in Aquifer 1. The lowering of piezometric surface elevation in Aquifer 2 would induce recharge (downward flow of water) from Aquifer 1 in and around the proposed well field site.

Similar to Demand Scenarios 2 and 3, this scenario would cause physical groundwater level changes (decline by 20 to 25 feet) that result in economic impacts to surrounding land owners. Specifically, approximately 130 shallow domestic wells may be taken out of service or require deepening to continue groundwater pumping. In addition, this decline in groundwater elevation also exceeds the groundwater stabilization levels identified in the Water Forum Plan. Therefore, the Proposed Project Alternative impacts under Demand Scenario 4 are a cumulatively considerable contribution to lowered groundwater elevations in and around the proposed well field.

## **DEMAND SCENARIO 5 ANALYSIS**

Under Demand Scenario 5, groundwater in Aquifer 1 would be about 30 feet lower in the vicinity of the proposed well field in dry years as compared to wet years. Piezometric surface elevations in Aquifer 2 show a 20-foot difference under the same conditions. A small cone of depression would form in Aquifer 2 centered around the proposed well field. The magnitude of these fluctuations between wet and dry years is the same as that estimated under the baseline condition.

Comparison of Demand Scenario 5 to baseline conditions shows that in and around the proposed well field site wet year groundwater elevations would be over 45 feet lower than baseline conditions. In fact, groundwater impacts are regional in nature under Scenario 5. Dry year groundwater elevations would be approximately 35 feet lower than baseline conditions. Groundwater extraction under the amounts proposed in this scenario could lower groundwater levels to the point where 790 local shallow domestic wells would be taken out of service and/or would require deepening to continue pumping groundwater.

Piezometric surface elevations in Aquifer 2 would be more than 110 feet lower than baseline conditions in both wet and dry years. A decline of this magnitude could lower the piezometric surface elevations below the base of the aquaclude. The impact on the piezometric surface of Aquifer 2 does not have the same significance as an impact on groundwater elevations in Aquifer 1 because municipal wells, which extract groundwater from Aquifer 2, are drilled sufficiently deep to withstand groundwater level fluctuations of the magnitude envisioned under this scenario. However, lowering of the piezometric surface elevation by over 110 feet in Aquifer 2 would induce recharge from Aquifer 1, causing the approximate 45-foot lowering of groundwater levels in Aquifer 1.

Similar to Demand Scenarios 2, 3, and 4, this scenario would cause physical groundwater level changes that result in economic impacts to surrounding land owners. Specifically, approximately 790 shallow domestic wells would be taken out of service and/or would require deepening to continue operation. In addition, this decline in groundwater elevation also exceeds the groundwater stabilization levels identified in the Water Forum Plan. Therefore, the Proposed Project Alternative impacts under Demand Scenario 5 are a cumulatively considerable contribution to lowered groundwater elevations in and around the proposed well field.

## **DEMAND SCENARIO 4A ANALYSIS**

Under Demand Scenario 4a, groundwater elevations in Aquifer 1 would be about 40 feet lower in the vicinity of the proposed well field in dry years as compared to wet years. Aquifer 2 shows a 60-foot difference under the same conditions. The magnitude of these fluctuations between wet and dry years is greater than estimated under baseline conditions for all alternatives. This is primarily due to the groundwater “mounding” that results from delivery of surface water to the area.

Wet year groundwater elevations in Aquifer 1 under Demand Scenario 4a would be higher than those under the baseline condition. An increase in groundwater elevation over 10 feet is observed in and around the proposed well field. Similarly, dry year groundwater elevations in Aquifer 1 are approximately 1 foot higher than under baseline conditions. Piezometric surface elevations in Aquifer 2 under this scenario are also substantially higher (approximately 35 feet) in wet years. In dry years, the piezometric surface elevations would be approximately 3 feet lower. Because groundwater elevations are consistent with stabilization levels identified in the Water Forum Plan, impacts under this scenario would not be considered a cumulatively considerable contribution to lowered groundwater elevations in and around the proposed well field.

## DEMAND SCENARIO 5A ANALYSIS

Under Demand Scenario 5a, groundwater elevations of Aquifer 1 would be about 40 feet lower in the vicinity of the proposed well field in dry years as compared to wet years. Aquifer 2 shows a 50- to 60-foot difference under the same conditions. The magnitude of these fluctuations between the wet and dry years is greater than that estimated under the baseline condition for all alternatives. This is primarily due to the groundwater “mounding” during wet years that results from the delivery of surface water to the area.

Wet year groundwater elevations in Aquifer 1 under Demand Scenario 5a are similar to those under the baseline condition. However, a slight decrease of approximately 5 feet is centered at the well field. Dry year groundwater elevations in Aquifer 1 under Demand Scenario 5a result in an approximate 10-foot decrease at the well field, with minor areas subject to a 10-13 foot decrease.

Impacts to the piezometric surface elevations in Aquifer 2 under Demand Scenario 5a vary between wet and dry years. In wet years, Aquifer 2 piezometric surface elevations would be approximately 10 feet lower than those under baseline conditions. In dry years, a 15-foot decrease would be centered around the proposed well field. This results from the large volume of groundwater extracted in the dry year (up to 32,822 AF). In wet years, surface water would be delivered under the Zone 40 conjunctive use program. Because groundwater elevations are consistent with stabilization levels identified in the Water Forum Plan, impacts under Scenario 5a would not be considered a cumulatively considerable contribution to lowered groundwater elevations in and around the proposed well field.

### **Impact 3.3-5. Potential for changes in groundwater elevations in and around known contaminant plumes.**

The proposed North Vineyard Well Field would have no appreciable impacts on groundwater elevations in and around known contaminant plumes under Demand Scenarios 1, 2, 3, 4a, and 5a. Aquifer 1 groundwater elevations in and around known contaminant plumes remain largely unchanged under these scenarios. At some locations, minor impacts versus the baseline condition are predicted. Potential impacts would be addressed by ongoing and planned remediation efforts with coordination.

Aquifer 2 piezometric surface elevations in and around known contaminant plumes also evidence minor impacts. An increase in piezometric elevation could result in the migration of groundwater from Aquifer 2 to Aquifer 1; however, these impacts would be accommodated by ongoing and planned remediation efforts with coordination.

The proposed well field could have potentially significant impacts on groundwater and piezometric surface elevations around known contaminant plumes under Demand Scenarios 4 and 5, including changes in groundwater elevations in Aquifer 1 and piezometric surface elevations in Aquifer 2. Therefore, the Proposed Project Alternative impacts under Demand Scenarios 4 and 5 would be considered a cumulatively considerable contribution to groundwater elevations in and around known contaminant plumes. Under Scenarios 4a and 5a, the Zone 40 conjunctive use program prescribed by the Water Forum Plan would mitigate these impacts.

### **Impact 3.3-6. Potential for changes in the rate of contaminant plume migration.**

Under worst case conservative conditions (i.e., assuming no remediation of known contaminant plumes occurs) the average estimated travel times from known contaminant plumes to reach the proposed well

field site would be at least 50 years under Demand Scenarios 1, 2, 3, 4, 4a, and 5a, similar to what would occur under baseline conditions. Therefore, contaminant plume migration under these scenarios would not be significant. However, the average estimated travel times for known contaminant plumes to reach the proposed well field under Demand Scenario 5 would be decreased to 40 years. Therefore, the Proposed Project Alternative impacts under Demand Scenario 5 would be considered a cumulatively considerable contribution to the acceleration of contaminant plume migration compared to baseline conditions. The Zone 40 conjunctive use program prescribed by the Water Forum Plan would mitigate this impact, as demonstrated in Scenario 5a.

## **DEMAND SCENARIO 2, 3, 4, 4A, AND 5A ANALYSIS**

Based on the average flow rates, estimated travel times for contaminants originating from any of the known contaminant plumes referenced above to the proposed well field would be greater than 50 years for Demand Scenarios 2, 3, 4, 4a, and 5a. Estimated travel times for plumes that are more distant are typically in excess of 100 years. Because these travel times are the same or slower than what would occur under baseline conditions, Proposed Project Alternative impacts would not be considered a cumulatively considerable contribution to the rate of contaminant plume migration.

## **DEMAND SCENARIO 5 ANALYSIS**

Based on the average flow rates, estimated travel times for contaminants originating from any of the known contaminant plumes referenced above to the proposed well field are greater than 40 years. Under this scenario, travel times of known contaminant plumes are decreased compared to baseline conditions. Therefore, the time that it takes for the contaminant plumes to migrate to the proposed well field could be reduced. Therefore, the Proposed Project Alternative impacts under Demand Scenario 5 would be considered a cumulatively considerable contribution to the acceleration of contaminant plume migration compared to baseline conditions. The Zone 40 conjunctive use program prescribed by the Water Forum Plan would mitigate this impact, as demonstrated in Scenario 5a.

### **Impact 3.3-9. Changes in groundwater elevation adjacent to the proposed well field.**

Groundwater elevations in the vicinity of the proposed North Vineyard Well Field would decline by 10 feet or more relative to the baseline under Demand Scenarios 2, 3, 4, and 5, and by 10 feet or less relative to the baseline under Demand Scenarios 4a and 5a.

#### Demand Scenarios 2, 3, 4, and 5

Groundwater elevations in Aquifer 1 in the vicinity of the proposed well field would decline by 10 feet or more relative to the baseline under Demand Scenarios 2, 3, 4, and 5, resulting in significant impacts. This impact, centered on the well fields, would range from a 10-15-foot decrease in Scenarios 2 and 3 (near the margin of acceptable impacts), up to a 25-45-foot decrease in Scenarios 4 and 5 (which substantially exceeds the 10-foot drop from the baseline significance threshold). The decline in groundwater elevations could result in substantial economic impacts to shallow domestic well operators in the vicinity of the proposed well field, due to increased pumping (energy) costs or the possible need to deepen existing wells to obtain water. It is anticipated that approximately 130 existing shallow domestic wells would be adversely affected under Scenario 4, and approximately 790 wells would be adversely affected under Scenario 5. In addition, the decline in groundwater elevations around the proposed well field exceeds the groundwater stabilization levels identified in the Water Forum Plan under Scenarios 4 and 5. These impacts are mitigated under Scenarios 4a and 5a, highlighting the need for implementation of the Zone 40 conjunctive use program prescribed by the Water Forum Plan.

### Demand Scenario 2 and 3 Analysis

Under Demand Scenarios 2 and 3, groundwater elevations in Aquifer 1 would be about 30 feet lower in the vicinity of the proposed well field in dry years as compared to wet years. Piezometric surface elevations in Aquifer 2 also show a 30-foot difference under the same conditions. A small cone of depression would form in Aquifer 2, centered around the proposed well field. The magnitude of this fluctuation between wet and dry years is the same as that estimated under the baseline condition.

Comparison of Demand Scenarios 2 and 3 (extraction of approximately 10,800 AF/yr) to baseline conditions shows that in and around the proposed well field site, wet and dry year elevations in Aquifer 1 would be approximately 10 to 15 feet lower than baseline conditions, which may begin to negatively impact the shallow domestic wells of adjacent landowners. Piezometric surface elevations in Aquifer 2 in wet and dry years would be approximately 40 feet lower than baseline conditions. Lowering of the piezometric surface elevation would primarily result from extraction of groundwater from Aquifer 2. However, the impact on the piezometric surface of Aquifer 2 does not have the same significance as an impact of similar magnitude on groundwater elevations in Aquifer 1 because municipal wells, which extract groundwater from Aquifer 2, are drilled sufficiently deep to withstand groundwater level fluctuations of the magnitude envisioned under this scenario. Further, the magnitude of the impact diminishes rapidly with distance from the proposed well field site in both Aquifer 1 and Aquifer 2.

If groundwater (Aquifer 1) levels decline by more than 10 feet during groundwater extraction activities, potentially significant groundwater resource impacts could occur. A drop of groundwater elevations of 10 feet or more could adversely affect nearby shallow domestic wells in and around the proposed well field because pumping costs could increase. Therefore, under Demand Scenarios 2 and 3, potentially significant impacts to groundwater elevations in and around the proposed well field would occur.

### Demand Scenario 4 Analysis

Under Demand Scenario 4, groundwater elevations and piezometric surface elevations in and around the proposed well field would be about 30 feet lower in dry years as compared to wet years. A small cone of depression would form in Aquifer 2 centered on the proposed well field. The magnitude of these fluctuations is the same as that estimated under the baseline condition.

Comparison of Demand Scenario 4 to baseline conditions shows that in and around the proposed well field site wet and dry year groundwater elevations would be approximately 25 feet and 20 feet lower than baseline conditions, respectively. Groundwater extraction proposed in Demand Scenario 4 could lower groundwater levels in Aquifer 1 to the point where approximately 130 local shallow domestic wells could be taken out of operation and/or would require deepening to continue operation. Piezometric surface elevations would be approximately 70 feet lower than baseline conditions in both wet and dry years under Demand Scenario 4. This impact on the piezometric surface of Aquifer 2 does not have the same significance as an impact of similar magnitude on Aquifer 1 because municipal wells, which extract groundwater Aquifer 1, are drilled sufficiently deep to withstand groundwater level fluctuations of the magnitude envisioned under this scenario. However, a consequence of lowering the piezometric surface elevation by 70 feet in Aquifer 2 would be the approximate 20-foot lowering of groundwater elevations in Aquifer 1. The lowering of piezometric surface elevation in Aquifer 2 would induce recharge (downward flow of water) from Aquifer 1 in and around the proposed well field site.

Similar to Demand Scenarios 2 and 3, this scenario would cause physical groundwater level changes (decline by 20 to 25 feet) that result in economic impacts to surrounding land owners. Specifically, approximately 130 shallow domestic wells may be taken out of service or require deepening to continue groundwater pumping. In addition, this decline in groundwater elevation also exceeds the groundwater

stabilization levels identified in the Water Forum Plan. Therefore, significant impacts to groundwater elevations in and around the proposed well field site would occur under Demand Scenario 4.

#### Demand Scenario 5 Analysis

Under Demand Scenario 5, groundwater in Aquifer 1 would be about 30 feet lower in the vicinity of the proposed well field in dry years as compared to wet years. Piezometric surface elevations in Aquifer 2 show a 20-foot difference under the same conditions. A small cone of depression would form in Aquifer 2 centered around the proposed well field. The magnitude of these fluctuations between wet and dry years is the same as that estimated under the baseline condition.

Comparison of Demand Scenario 5 to baseline conditions shows that in and around the proposed well field site wet year groundwater elevations would be over 45 feet lower than baseline conditions. In fact, groundwater impacts are regional in nature under Scenario 5. Dry year groundwater elevations would be approximately 35 feet lower than baseline conditions. Groundwater extraction under the amounts proposed in this scenario could lower groundwater levels to the point where 790 local shallow domestic wells would be taken out of service and/or would require deepening to continue pumping groundwater.

Piezometric surface elevations in Aquifer 2 would be more than 110 feet lower than baseline conditions in both wet and dry years. A decline of this magnitude could lower the piezometric surface elevations below the base of the aquaclude. The impact on the piezometric surface of Aquifer 2 does not have the same significance as an impact on groundwater elevations in Aquifer 1 because municipal wells, which extract groundwater from Aquifer 2, are drilled sufficiently deep to withstand groundwater level fluctuations of the magnitude envisioned under this scenario. However, lowering of the piezometric surface elevation by over 110 feet in Aquifer 2 would induce recharge from Aquifer 1, causing the approximate 45-foot lowering of groundwater levels in Aquifer 1.

Similar to Demand Scenarios 2, 3, and 4, this scenario would cause physical groundwater level changes that result in economic impacts to surrounding land owners. Specifically, approximately 790 shallow domestic wells would be taken out of service and/or would require deepening to continue operation. In addition, this decline in groundwater elevation also exceeds the groundwater stabilization levels identified in the Water Forum Plan. Therefore, under Demand Scenario 5, significant impacts to groundwater elevations in and around the proposed well field would occur.

#### Demand Scenario 4a Analysis

Under Demand Scenario 4a, groundwater elevations in Aquifer 1 would be about 40 feet lower in the vicinity of the proposed well field in dry years as compared to wet years. Aquifer 2 shows a 60-foot difference under the same conditions. The magnitude of these fluctuations between wet and dry years is greater than estimated under baseline conditions. This primarily due to the groundwater “mounding” that results from delivery of surface water to the area.

Wet year groundwater elevations in Aquifer 1 under Demand Scenario 4a would be higher than those under the baseline condition. An increase in groundwater elevation over 10 feet is observed in and around the proposed well field. Similarly, dry year groundwater elevations in Aquifer 1 are approximately 1 foot higher than under baseline conditions. Piezometric surface elevations in Aquifer 2 under this scenario are also substantially higher (approximately 35 feet) in wet years. In dry years, the piezometric surface elevations would be approximately 3 feet lower. Because groundwater elevations are consistent with stabilization levels identified in the Water Forum Plan, groundwater elevation impacts under this scenario would be considered less than significant.

### Demand Scenario 5a Analysis

Under Demand Scenario 5a, groundwater elevations of Aquifer 1 would be about 40 feet lower in the vicinity of the proposed well field in dry years as compared to wet years. Aquifer 2 shows a 50- to 60-foot difference under the same conditions. The magnitude of these fluctuations between the wet and dry years is greater than that estimated under the baseline condition. This is primarily due to the groundwater “mounding” during wet years that result from the delivery of surface water to the area.

Wet year groundwater elevations in Aquifer 1 under Demand Scenario 5a are similar to those under the baseline condition. However, a slight decrease of approximately 5 feet is centered at the well field. Dry year groundwater elevations in Aquifer 1 under Demand Scenario 5a result in an approximate 10-foot decrease at the well field, with minor areas subject to a 10-13 foot decrease.

Impacts to the piezometric surface elevations in Aquifer 2 under Demand Scenario 5a vary between wet and dry years. In wet years, Aquifer 2 piezometric surface elevations would be approximately 10 feet lower than those under baseline conditions. In dry years, a 15-foot decrease would be centered around the proposed well field. This results from the large volume of groundwater extracted in the dry year (up to 32,822 AF). In wet years, surface water would be delivered under the Zone 40 conjunctive use program. Because groundwater elevations are consistent with stabilization levels identified in the Water Forum Plan, groundwater elevation impacts under this scenario would be considered less than significant.

<b>Impact 3.3-10. Increased need for development of long-term regional surface and groundwater supplies.</b>
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Implementation of the Zone 40 WSMP, Zone 41 UWMP, and Zone 40 WSIP, will provide SCWA Zone 40 with long-term groundwater supplies. SCWA has secured (and is in the process of securing additional) surface water entitlements that would allow SCWA to meet its projected 2030 water demands. Under the Zone 40 Master Plan Update, Sacramento County proposes construction of a surface water diversion structure on the Sacramento River, treatment facilities, and a network of pipelines to convey surface water throughout the Zone 40 service area. The North Vineyard Well Field that would provide initial supplies to the project site would ultimately be integrated with the Zone 40 surface water facilities to provide conjunctively managed surface and groundwater to the region.

Because Zone 40 water is allocated on a first-come, first-served basis, the water available to the project under the Zone 40 WSMP and the Zone 41 UWMP could be affected by rapid development in other portions of Zone 40 or by expansion of the City of Elk Grove’s urban services area. The Elk Grove City Council voted in April 2010 to expand the City’s urban services boundary to the south and east (south of Kammerer Road and southeast of Grant Line Road), which would add 8,000 acres of developable land to the city limits (Kalb 2010). As development occurs, SCWA will track service demands in relation to available supplies. Specific projects that are planned for in the future would be served with water supplies as the necessary conveyance and treatment facilities to deliver water to the newly developing areas are developed.

The City conducted a water supply evaluation for the City General Plan that concluded that water supplies are currently available to meet the water demands associated with buildout of the City’s corporate limits, but the City would be required to secure additional water supplies to meet its projected 2050 demands (City of Ranch of Rancho Cordova, 2006). Increased water demands could result in increased groundwater pumping, an increased demand for new surface water supplies, an increased demand for recycling and water conservation programs, and/or an increased demand for local water purveyors to expand their service areas (City of Rancho Cordova, 2006). Potential projects to secure additional supplies could include the negotiation of new water right transfers; construction of new diversion

structures; expansion or construction of new water treatment plants; and construction of new potable-water and recycled-water distribution facilities (City of Rancho Cordova, 2006).

Because the project site is within the City's corporate limits, sufficient water supply is anticipated to be available in the long-term, at full buildout of the Specific Plan, and there is no adverse cumulative condition.

#### **4.3.2.3 SURFACE WATER QUALITY**

##### **Impact 3.3-2 - Potential for discharges that affect surface water quality.**

Even under compliance with the county grading and erosion ordinances, and county and state stormwater quality control requirements, the Proposed Project Alternative, in conjunction with other planned development, would result in a cumulatively considerable contribution to decreased surface water quality in Morrison and Laguna Creeks.

#### **4.3.2.4 AIR QUALITY**

##### **Impact 3.4-3 – Long-term increase in ROG, NO<sub>x</sub> and PM<sub>10</sub> emissions.**

Activities associated with new residents moving into the Proposed Project Alternative's 3,258 single family homes would result in increased air emissions of ROG, NO<sub>x</sub>, and PM<sub>10</sub>, substantially above the significance thresholds for these pollutants. Therefore, the Proposed Project Alternative, in conjunction with other planned development, would result in a cumulatively considerable contribution to long-term increases in ROG, NO<sub>x</sub>, and PM<sub>10</sub> emissions.

#### **4.3.2.5 TRAFFIC AND TRANSPORTATION**

##### **Impact 3.7-1 – Reduction of level of service**

Traffic data used to establish the environmental conditions in the study area were modeled and compiled in the 2001 SDCP/SRSP EIR (County of Sacramento, 2001), and the 2006 Rio del Oro Specific Plan Project DEIR/DEIS (RDOSPP, 2006). The SDCP/SRSP EIR evaluated Existing Conditions, Existing Conditions Plus Proposed Project, Cumulative Conditions (Without Proposed Project) and Cumulative Conditions Plus Proposed Project for the year 2015. The Rio del Oro Specific Plan Project DEIR/DEIS identified the Cumulative Conditions for the year 2030, incorporating roadway improvement projects associated with planned development projects in the area including the SDCP/SRSP. For the purposes of this EIS, the conditions anticipated under the Cumulative Conditions plus Proposed Project for the year 2015 as well as the Cumulative Conditions for the year 2030 govern the analysis.



## **SUNRISE-DOUGLAS COMMUNITY PLAN/SUNRIDGE SPECIFIC PLAN RESULTS OF CUMULATIVE PLUS PROJECT ANALYSIS**

According to the Cumulative Plus Project analysis illustrated in the SDCP/SRSP EIR, at the following locations project traffic would exacerbate or create conditions that exceed Sacramento County standards for daily or peak hour operations:

- US 50 between Mather Field Road and Sunrise Boulevard as well as ramps at Mather Field Road, Zinfandel Drive and Sunrise Boulevard
- Sunrise Boulevard from Folsom Boulevard to Coloma Road
- Zinfandel Drive from Folsom Boulevard to International Drive
- Operations at the following intersections:
  - Mather Field Road at International Drive (LOS F during the PM peak hour)
  - Zinfandel Drive at Douglas Road (from LOS B to LOS F during the PM peak hour)
  - Sunrise Boulevard at Douglas Road (from LOS D to LOS F during the PM peak hour)
  - White Rock Road at Sunrise Boulevard (LOS F during both peak hours)
  - Zinfandel Drive at Sunrise Boulevard (LOS F during both peak hours)
  - White Rock Road at Grant Line Road (LOS F during the PM peak hour)
  - Folsom Boulevard at Sunrise Boulevard (LOS F during both peak hours)

According to the Cumulative Plus Project analysis illustrated in the SDCP/SRSP EIR, for full development, traffic impacts would be significant even after implementation of mitigation measures.

## **RIO DEL ORO SPECIFIC PLAN PROJECT DEIR/DEIS CUMULATIVE CONDITIONS**

According to the Cumulative Plus Project analysis discussed in the Rio del Oro Specific Plan Project EIS/EIR, the following roadway segments, even with mitigation measures offered under the Rio del Oro Specific Plan will experience significant impacts from the Rio del Oro Specific Plan Project:

- International Drive between South White Rock Road and Zinfandel Drive
- Zinfandel Drive between US 50 Eastbound Ramps and White Rock Road
- Sunrise Boulevard between Gold Country Boulevard and Coloma Road
- Sunrise Boulevard between Coloma Road and US 50 Westbound Ramps
- Sunrise Boulevard between US 50 Eastbound ramps and Folsom Boulevard
- Sunrise Boulevard between Folsom Boulevard and White Rock Road
- Hazel Avenue between Winding Way and US 50 Westbound Ramps
- US 50 between Mather Field Road and Zinfandel Drive, between Sunrise Boulevard and Rancho Cordova Parkway, between Rancho Cordova Parkway and Hazel Avenue and between Hazel Avenue and Folsom Boulevard including merge, diverge and weave segments

- Sunrise Boulevard between Douglas Road and Chrysanthy Boulevard
- Rancho Cordova Parkway between Easton Valley Parkway and White Rock Road

According to the Cumulative Plus Project analysis illustrated in the Rio del Oro Specific Plan Project, the following intersections, even with mitigation measures offered under the Rio del Oro Specific Plan, will experience significant impacts from the Rio del Oro Specific Plan Project:

- SR 16 at Eagles Nest Road
- Grant Line Road at Sunrise Boulevard
- Grant Line Road at Kiefer Boulevard
- Sunrise Boulevard at Douglas Road
- Mather Field Road at US 50 Eastbound Ramps
- Mather Field Road at International Drive
- Zinfandel Drive at International Drive
- Zinfandel Drive at White Rock Road
- Zinfandel Drive at US 50 Eastbound Ramps
- Sunrise Boulevard at White Rock Road
- Sunrise Boulevard at Folsom Boulevard
- Sunrise Boulevard at US 50 Westbound Ramps
- Sunrise Boulevard at Zinfandel Drive
- Hazel Avenue at Folsom Boulevard
- Hazel Avenue at US 50 Eastbound Ramps
- Hazel Avenue at US 50 Westbound Ramps
- Grant Line Road at White Rock Road
- Sunrise Boulevard at International Drive
- Rancho Cordova Parkway at White Rock Road
- Rancho Cordova Parkway at US 50 Eastbound Ramps
- White Rock Road at Americanos Boulevard
- Hazel Avenue at Gold Country Boulevard

Based on the analyses described above, under the cumulative condition, the Proposed Project Alternative would increase peak-hour and daily traffic volumes, resulting in level of service decreases at various roadway segments, intersections, and freeway ramps, including roadways that are already at LOS E or F. Some of the affected roadways and intersections cannot be expanded to accommodate increased traffic. These decreases would result in a cumulatively considerable contribution to the current adverse levels of service.

#### **4.3.2.6 NOISE**

##### **Impact 3.8-4 – Project generated increases in traffic noise levels on area roadways**

The increase in housing results directly in increased daily vehicle trips. The increase in daily traffic volumes resulting from implementation of the Proposed Project Alternative would generate increased noise levels along nearby roadways. Therefore, the Proposed Project Alternative, in conjunction with other planned development, would result in a cumulatively considerable contribution of increased noise levels on area roadways.

#### **4.3.2.7 PUBLIC HEALTH**

##### **Impact 3.11-3 – Human health hazards associated with mosquito-borne disease**

Although the mosquito controls applied by the SYMVCD are considered to be appropriate and safe for human exposure, the project could result in a new risk of adverse health effects associated with vector-borne diseases or hazards associated with vector control, because new water-related sources of mosquito breeding habitat would be created, and the project currently does not have wetland mosquito management guidelines. Implementation of the Proposed Project Alternative would have a potentially significant impact on human health related to mosquito-borne diseases. Therefore, the Proposed Project Alternative, in conjunction with other planned development, would result in a cumulatively considerable contribution of human exposure to mosquito-borne disease.

#### **4.3.2.8 VISUAL RESOURCES**

##### **Impact 3.13-3 - Degradation of visual character Impact 3.13-5 - New light and glare effects Impact 3.13-6 - New skyglow effects**

The project would change 742 acres of rural, undeveloped, or agricultural land to urban land uses. With the development of other large planned projects in the vicinity, much of the remaining open space within Rancho Cordova is expected to be converted to other land uses. When considered along with past urban development and planned future development proposed in the city, the surrounding communities, and the county as a whole, the Proposed Project Alternative would result in a cumulatively considerable contribution to degradation of visual character, new light and glare effects, and new skyglow effects.

#### **4.3.2.9 CULTURAL RESOURCES**

##### **Impact 3.13-3 – Potential damage to undiscovered prehistoric sites or Native American burials**

The potential exists for undiscovered archaeological sites to be identified during preconstruction or construction ground-disturbing activities. If such resources were to represent “historical resources,” or “unique archaeological resources” any destruction of these resources would be considered a significant impact. Therefore, if construction of the Proposed Project Alternative, in conjunction with other planned

development, would intersect with as-yet-undiscovered sites, this would result in a cumulatively considerable contribution of potential damage to prehistoric sites or Native American burials.

#### **4.3.2.10 CLIMATE CHANGE**

**Impact 3.16-1 – Short-term increase in construction-related GHG emissions**

**Impact 3.16-2 – Long-term increase in GHG emissions**

Activities associated with the construction of single family homes and associated infrastructure may result in short-term increases in construction-related GHG emissions. These emissions would result from construction activities, including construction worker commute trips and mobile and stationary construction equipment exhaust. Activities associated with project build-out and operations in the project area may result in long-term increases in GHG emissions. Long-term direct and indirect emissions of GHGs from the project include area- and mobile-source emissions, and indirect emissions from in-state energy production and water consumption (energy for conveyance, treatment, distribution, and wastewater treatment). Implementation of the Proposed Project Alternative, in conjunction with worldwide GHG emissions, would result in a cumulatively considerable contribution to long-term increases in GHG emissions.

### **4.4 REQUIRED DISCLOSURES**

#### **4.4.1 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

NEPA requires that an environmental analysis include identification of “...any irreversible and irretrievable commitments of resources which would be involved in the Proposed Project Alternative should it be implemented.” Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that this use could have on future generations. Irreversible effects result primarily from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., extinction of a threatened or endangered species or the disturbance of a cultural resource).

There are several resources, both natural and built, that would be expended in the construction and operation of the project. These resources include the building materials used in construction of the project; energy in the form of natural gas, petroleum products, and electricity consumed during construction and operation of housing and commercial land uses; and the human effort required to develop and construct various components of the project. These resources are considered irretrievably committed because their reuse for some other purpose than the project would be impossible or highly unlikely.

The project constitutes an irreversible and irretrievable commitment of the site as a land resource, thereby rendering land use for other purposes infeasible. The Proposed Project Alternative represents a permanent change of land use. Such decisions are considered irreversible when their implementation would affect a resource that has deteriorated to the point that renewal can occur only over a long period of time or at great expense, or because they would cause the resource to be destroyed or removed. Thus, except to the extent minimized by the designation of the on-site wetland preserve, the losses resulting from this project to the identified vernal pool species and their habitat would be irreversible.

#### **4.4.2 SIGNIFICANT AND UNAVOIDABLE EFFECTS**

The amount of vernal pools in the Mather Core Area, in the Southeastern Sacramento Valley region within Sacramento County, and in the Central Valley vernal pool complexes have been substantially reduced in size from historical actions, continue to be degraded by current actions, and are continuously subject to loss, fragmentation, alteration, and degradation from conversions and encroachment by planned agricultural and urban developments.

Even with implementation of the proposed mitigation, the project would result in significant and unavoidable effects to the following resources:

- Impact 3.2-1 – An adverse effect on a population of threatened, endangered, or candidate species
- Impact 3.2-2 – A net loss in the habitat value of sensitive biological habitat
- Impact 3.2-3 – Substantial impedance to the movement or migration of fish or wildlife
- Impact 3.2-4 – Substantial population loss of any native fish, wildlife, or vegetation
- Impact 3.3-2 – Potential for discharges that affect surface water quality
- Impact 3.3-9 - Changes in groundwater elevation adjacent to the proposed well field
- Impact 3.3-10 – Increased need for development of long-term regional surface and groundwater supplies
- Impact 3.4-3 – Long-term increase in ROG, NO<sub>x</sub> and PM<sub>10</sub> emissions
- Impact 3.7-1 – Reduction of level of service
- Impact 3.8-4 – Project-generated increases in traffic noise levels on area roadways
- Impact 3.13-3 – Degradation of visual character
- Impact 3.13-5 – New light and glare effects
- Impact 3.13-6 – New skyglow effects
- Impact 3.16-1 – Short-term increase in construction-related GHG emissions
- Impact 3.16-2 – Long-term increase in GHG emissions

These cumulative impacts would be significant and unavoidable, because neither planned nor potential mitigation cannot avoid or substantially reduce these specific effects.

#### **4.4.3 RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY**

NEPA requires consideration of the relationship between short-term uses of the environment and long-term productivity associated with a project. This comparison is generally interpreted to recognize that a short-term (temporary) use of the environment may enable the advancement of long-term community needs. For example, construction of a school would negatively affect traffic and air quality in the short-term, but would fulfill a long-term community need to provide adequate educational facilities for its residents. A community might be willing to accept this trade-off.

#### **4.4.3.1 SHORT-TERM USES**

Implementation of the Proposed Project Alternative would result in temporary and short-term construction-related impacts. Temporary and short-term construction impacts would be associated predominantly with water quality, traffic, air quality emissions, and noise. The project applicant would implement mitigation measures identified in each resource section to reduce these impacts to a less-than-significant level wherever feasible. At the same time, however, construction of the project would create economic benefits during construction, in the form of jobs and the subsequent direct and indirect demand for goods and services.

#### **4.4.3.2 LONG-TERM USES**

Implementation of the Proposed Project Alternative would enhance the long-term economic productivity of the region, but would also result in long-term impacts related to the loss of vernal pool and species habitat; surface water quality depredation; a change in the visual character and quality of the project site; increased air quality emissions; and increased traffic and, the introduction of urban noise. Therefore, while the provision of housing would fulfill a long-term community need, the negative impact to the environment would also be long-term.

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## **5 COMPLIANCE WITH APPLICABLE LAWS, POLICIES, AND PLANS**

The Proposed Action must comply with the Federal, state, and local laws, policies, and plans described below. The EIS shall list all the Federal permits, licenses, and other entitlements which must be obtained in implementing the Proposed Action (40 CFR §1502.25). If there is uncertainty whether a Federal permit, license, and other entitlement is required, it will be stated in the discussion below. Sections 5.1, 5.2, and 5.3 summarize the Federal, state, and local laws, policies and plans, respectively, that are addressed either in this EIS or in a subsequent action by the permit applicant. Section 5.4 provides a listing of the compliance activity and method of compliance.

### **5.1 FEDERAL**

#### **NATIONAL ENVIRONMENTAL POLICY ACT**

The National Environmental Policy Act (NEPA) (42 United States Code [USC] 4321; 40 CFR §1500.1) applies to all Federal agencies that manage, regulate, or fund projects or programs that could have environmental effects. It requires Federal agencies to disclose and consider the environmental implications of their proposed actions. NEPA establishes environmental policies, provides an interdisciplinary framework for preventing environmental damage, and contains “action-forcing” procedures to ensure that Federal agencies take environmental factors into account when making decisions to approve a project or program. NEPA requires the preparation of an appropriate document to ensure that Federal agencies accomplish the law’s purposes.

#### **ENDANGERED SPECIES ACT**

The Endangered Species Act (ESA) of 1973, as amended (16 USC §1531 *et seq.*) provides for the conservation and recovery of endangered and threatened species and the ecosystems upon which they depend. Section 7 of the ESA requires federal agencies to aid in the conservation and recovery of listed species and to ensure that their activities will not jeopardize the continued existence of listed species or adversely modify designated critical habitat. The U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration are responsible for administration of the ESA.

#### **MIGRATORY BIRD TREATY ACT**

The Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 USC §703 *et seq.*) decrees that all migratory birds and their parts (including eggs, nests and feathers) are fully protected. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, and swallows). Under the MBTA, taking, killing or possessing migratory birds is unlawful, and projects that are likely to result in take of birds protected under the MBTA would require the issuance of take permits from the USFWS. Activities that would require such a permit would include destruction of migratory bird nesting habitat during the nesting season when eggs or young are likely to be present.



## **FISH AND WILDLIFE COORDINATION ACT**

The Fish and Wildlife Coordination Act of 1934, as amended (16 USC §661 *et seq.*) requires consultation with USFWS whenever the waters or channel of a body of water are modified by a department or agency of the United States (U.S.). The Act provides for wildlife conservation through planning, development, maintenance and coordination of wildlife conservation and rehabilitation.

## **EXECUTIVE ORDER 11990- PROTECTION OF WETLANDS**

Executive Order 11990, Protection of Wetlands (Federal Register (FR) 26961) was issued May 24, 1977, and directed Federal agencies to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out their responsibilities. Executive Order 11990 requires Federal agencies to “avoid to the extent possible the long-term and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.”

## **CLEAN WATER ACT**

The federal Water Pollution Control Amendments of 1972, as amended (33 USC §1251 *et seq.*, commonly known as the Clean Water Act) is the primary federal law in the U.S. governing water pollution. The CWA established the goals of eliminating releases to water of high amounts of toxic substances, eliminating additional water pollution by 1985, and ensuring that surface waters would meet standards necessary for human sports and recreation by 1983.

Under Section 404 of CWA, discharges of dredged or fill material into "waters" of the U.S. are prohibited without a permit from the USACE. Among other regulatory program requirements, an applicant for a Department of the Army (DA) permit involving a discharge must demonstrate under USEPA's 404(b)(1) guidelines that the proposed activity is the least environmentally damaging practicable alternative that achieves the project's overall purpose.

Section 401 of the CWA requires certification from the state to ensure compliance with state water quality standards for any activity that may result in a discharge to a water body. A project that would result in the discharge of any pollutant, including soil, into waters and wetlands requires coordination with the appropriate California Regional Water Quality Control Board to obtain Section 401 certification.

The CWA is also applicable to Hydrology, Water Supply, Water Quality, and Groundwater, as it requires states to adopt water quality standards and to submit those standards for approval by the USEPA. Clean Water Act Section 303(d) requires states to list surface waters not attaining (or not expected to attain) water quality standards after the application of technology-based effluent limits, and states must prepare and implement a total maximum daily load for all listed waters. For point source discharges to surface water, the Clean Water Act authorizes the USEPA or approved states to administer the National Pollutant Discharge Elimination System (NPDES) Program.

## **SAFE DRINKING WATER ACT**

The USEPA is responsible for developing and implementing drinking water regulations under the federal Safe Drinking Water Act (SDWA) of 1974. The SDWA applies to every public water system in the U.S. States can apply to the USEPA for “primacy,” the authority to implement SDWA within their jurisdictions, if they can show that they will adopt standards at least as stringent as the USEPA's and make sure water systems meet these standards. All states and territories, except Wyoming and the District of Columbia, have received primacy. California's implementation of the SDWA (CA SDWA) is

more stringent than the federal SDWA. The California Department of Public Health (CDPH), Office of Drinking Water, has been delegated the authority to implement drinking water regulations within the state. The California Code of Regulations (CCR) is the official compilation and publication of the regulations adopted, amended or repealed by California. The California regulations contain the state's requirements for production, discharge, distribution, and use of recycled water (22 CCR Division 4).

## **CLEAN AIR ACT**

The federal Clean Air Act (CAA), passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. Basic elements of the act include national ambient air quality standards for major air pollutants, hazardous air pollutants standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions.

In the 1990 CAA Amendments, Congress added specific provisions to the conformity requirements for transportation actions. "Conformity" requires that federal agencies demonstrate their actions' consistency with State Implementation Plans. These conformity requirements have been determined to apply to air quality also. A USEPA final rule states that a conformity determination of a federal action is required for "each pollutant where the total of direct and indirect emissions" caused by the action equals or exceeds the emissions limits established in the rule.

## **EXECUTIVE ORDER 12898 – ENVIRONMENTAL JUSTICE**

The 1994 Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires all Federal agencies to conduct "programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under, such programs, policies, and activities, because of their race, color, or national origin." Section 1-101 of the Order requires Federal agencies to identify and address "disproportionately high and adverse human health or environmental effects" of programs on minority and low-income populations.

## **NATIONAL HISTORIC PRESERVATION ACT**

The National Historic Preservation Act (NHPA), as amended, 16 SC. 470, directs Federal agencies to integrate historic preservation into all activities that either directly or indirectly involve land use decisions. The NHPA is administered by the National Park Service, the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Office (SHPO), and each Federal agency. Implementing regulations include 36 CFR Part 800: *Regulations of the Advisory Council on Historic Preservation Governing the NHPA Section 106 Review Process*. Section 106 of the NHPA requires Federal agencies to take into consideration the impact an action may have on historic properties that are included on, or are eligible for inclusion on, the NRHP. The Section 106 review process is usually carried out as part of a formal consultation with the SHPO, the ACHP, and other parties, such as Indian tribes, that have knowledge of, or a particular interest in, historic resources in the area of the undertaking.

## **ARCHEOLOGICAL AND HISTORIC PRESERVATION ACT**

The Archeological and Historic Preservation Act (AHPA) of 1974, 16 USC §469 *et seq.* provides for the preservation of cultural resources if an activity may cause irreparable loss or destruction of significant

scientific, prehistoric, or archeological data. In accordance with the AHPA, the responsible official or the Secretary of the Interior is authorized to undertake data recovery and preservation activities.

## **NATIONAL NATURAL LANDMARKS**

The Secretary of the Interior is authorized to designate areas as National Natural Landmarks for listing on the National Registry of Natural Landmarks pursuant to the Historic Act of 1935, 16 U.S. Code §461 *et seq.* In conducting the environmental review of the Proposed Action, USEPA is required to consider the existence and location of natural landmarks, using information provided by the National Park Service pursuant to 36 CFR 62.6(d).

## **FARMLAND PROTECTION POLICY ACT**

The Farmland Protection Policy Act (FPPA) (Public Law 97-98) was passed in 1981 to minimize the conversion of farmland to non-agricultural uses under Federal projects and programs. The U.S. Department of Agriculture (USDA) National Resources Conservation Service (NRCS) oversees the FPPA and maintains an inventory of prime farmland, unique farmland, and farmland of statewide or local importance within the U.S., its territories, and trust areas. The inventory is implemented in cooperation with other interested agencies at the national, state and local levels of government.

## **TOXIC SUBSTANCES CONTROL ACT**

The Toxic Substances Control Act (TSCA) of 1976 provides the USEPA with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. TSCA addresses the production, importation, use, and disposal of specific chemicals including PCBs, asbestos, radon and lead-based paint. Certain substances are generally excluded from TSCA, including, among others, food, drugs, cosmetics and pesticides. For the past decade, the USEPA has focused efforts on protecting citizens from existing chemicals by making basic screening-level toxicity information publicly available. In 2008, the USEPA expanded those efforts with the Chemical Assessment and Management Program, or "ChAMP."

## **RESOURCE CONSERVATION AND RECOVERY ACT**

The Resource Conservation and Recovery Act (RCRA), passed in 1976, regulates ongoing operations involving the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA gave the USEPA the authority to control hazardous waste from the "cradle-to-grave." RCRA was amended in 1984 by the Hazardous and Solid Waste Amendments, which established restrictions requiring the treatment of hazardous waste before disposal in landfills.

## **COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT**

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) provides a Federal "Superfund" to clean up uncontrolled or abandoned hazardous waste sites as well as accidents, spills, and other emergency releases of pollutants and contaminants into the environment. Through CERCLA, the USEPA was given power to seek out those parties responsible for any release and assure their cooperation in the cleanup.

The USEPA cleans up orphan sites when potentially responsible parties cannot be identified or located, or when they fail to act. Through various enforcement tools, the USEPA obtains private party cleanup through orders, consent decrees, and other small party settlements. The USEPA also recovers costs from

financially viable individuals and companies once a response action has been completed. The USEPA is authorized to implement the Act in all 50 states and U.S. territories. Superfund site identification, monitoring, and response activities in states are coordinated through the state environmental protection or waste management agencies.

The Superfund Amendments and Reauthorization Act (SARA) of 1986 reauthorized CERCLA to continue cleanup activities around the country. Several site-specific amendments, definitions clarifications, and technical requirements were added to the legislation, including additional enforcement authorities. Also, Title III of SARA authorized the Emergency Planning and Community Right-to-Know Act (EPCRA) Local Studies.

## **5.2 STATE**

### **CALIFORNIA ENDANGERED SPECIES ACT**

The California Department of Fish and Game (CDFG) is responsible for administration of the California Endangered Species Act (CESA) of 1984, as amended (Fish and Game Code 2050 *et seq.*). Unlike under the Federal ESA, there are no state agency consultation procedures under CESA. For projects that affect both a state and Federal listed species, compliance with the Federal ESA will satisfy CESA if CDFG determines that the Federal incidental take authorization is “consistent” with CESA. Projects that will result in a take of a state-only listed species require a take permit under CESA.

### **FISH AND GAME CODE**

CDFG has responsibility for protection of streams, water bodies, and riparian corridors through the Streambed Alteration Agreement process under §1601-1606 of the California Fish and Game Code. CDFG regulates activities that would alter the flow, bed, channel or bank of streams and lakes. Wetlands under jurisdiction of USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from CDFG.

### **PORTER-COLOGNE WATER QUALITY CONTROL ACT**

The Porter-Cologne Water Quality Control Act is the principal state law governing water quality regulation in California. The Porter-Cologne Act established a comprehensive program to protect water quality and the beneficial uses of water, and established the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCB)s which are charged with implementing its provisions, and which have primary responsibility for protecting water quality in California. The SWRCB provides program guidance and oversight, allocates funds, and reviews RWQCB decisions. The RWQCBs have primary responsibility for individual permitting, inspection, and enforcement actions within each of nine hydrologic regions. The Sacramento-San Joaquin Delta falls under the jurisdiction of the Central Valley RWQCB. The RWQCBs regulate point source discharges under the Porter-Cologne Act primarily through issuance of NPDES and waste discharge requirement permits. The SWRCB and RWQCBs also have numerous nonpoint source-related responsibilities.

A Storm Water Pollution Prevention Plan (SWPPP) is required by the RWQCB for most construction sites. Project applicants may prepare and file an SWPPP under the State’s General Industrial Activities Storm Water Permit. The SWPPP must describe how the project will minimize the short and long-term impacts on receiving water quality including potential hydromodification impacts. The SWPPP covers construction or operations that may affect the discharge of pollutants from the construction site to surface waters, groundwater, or the municipal separate storm sewer system. Among other requirements, the

SWPPP must identify (1) the locations of all authorized and/or unauthorized non-storm water discharges; (2) the location of sensitive habitats, watercourses or other features that are not to be disturbed; and, (3) erosion control measures.

## **CALIFORNIA DEPARTMENT OF PUBLIC HEALTH REQUIREMENTS**

The CDPH has requirements that specify the minimum distance, or the minimum “travel” time, between known contaminant plumes and municipal groundwater extraction well sites. The intent is to place municipal production wells a sufficient distance from known contaminant plumes to reduce or eliminate the possibility of contamination of extracted groundwater. This requirement would be enforced by implementation of the CDPH Drinking Water Source Assessment and Protection Program. Under the assessment program, all new and existing drinking water sources must undergo a drinking water source assessment prior to being permitted. The general elements of the assessment include: a) Delineation of an area around a drinking water source through which contaminants might move and reach the source, b) An inventory of possible contaminating activities that might lead to the release of microbiological or chemical contaminants within the delineated area, and c) A determination of the possible contaminating activity to which the drinking water source is most vulnerable.

## **SENATE BILLS 610 AND 221**

The State of California has enacted legislation that is applicable to the consideration of larger projects under CEQA. Senate Bill (SB) 610 (Chapter 643, Statutes of 2001) requires the preparation of water supply assessments (WSAs) for large developments (i.e., more than 500 dwelling units or nonresidential equivalent), such as the Sunridge Specific Plan (Public Resources Code §21151.9; Water Code §10910 et seq.). The WSAs prepared by “public water systems” responsible for serving project areas, address whether existing and projected water supplies are adequate to serve the project while also meeting existing urban and agricultural demands and the needs of other anticipated development in the service area in which the project is located. If the most recently adopted Urban Water Management Plan (UWMP) accounted for the projected water demand associated with the project, the public water system may incorporate the requested information from the UWMP. If the UWMP did not account for the project’s water demand, or if the public water system has no UWMP, the project’s WSA shall discuss whether the system’s total projected water supplies (available during normal, single-dry, and multiple-dry water years during a 20-year projection) would meet the project’s water demand in addition to the system’s existing and planned future uses, including agricultural and manufacturing uses.

Where a WSA concludes that insufficient supplies are available, the public water system must provide to the city or county considering the development project its plans for acquiring and developing additional water supplies. Based on all the information in the record relating to the project, including all applicable WSAs and all other information provided by the relevant public water systems, the city or county must determine whether sufficient water supplies are available to meet the demands of the project, in addition to existing and planned future uses. Where a WSA concludes that insufficient supplies are available, the WSA must lay out the steps that would be required to obtain the necessary supply. The WSA is required to include (but is not limited to) identification of the existing and future water supplies over a 20-year projection period. This information must be provided for average normal, single-dry, and multiple-dry years. The absence of an adequate current water supply does not preclude project approval, but it does require a lead agency to address a water supply shortfall in its project findings.

If the project is approved, additional complementary statutory requirements, SB 221 (2001), would apply to the approval of tentative subdivision maps for more than 500 residential dwelling units (Government Code §66473.7). This statute requires cities and counties to include, as a condition of approval of such tentative maps, the preparation of a “water supply verification.” The verification, which must be

completed by no later than the time of approval of final maps, is intended to demonstrate that there is a sufficient water supply for the newly created residential lots. The statute defines sufficient water supply as follows:

*... the total water supplies available during normal, single-dry, and multiple-dry years within a 20-year projection period that would meet the projected demand associated with the proposed subdivision, in addition to existing and planned future uses, including, but not limited to, agricultural and industrial uses.*

A number of factors must be considered in determining the sufficiency of projected supplies:

- The availability of water supplies over a historical record of at least 20 years;
- The applicability of an urban-water-shortage contingency analysis that includes action to be undertaken by the public water system in response to water supply shortages;
- The reduction in water supply allocated to a specific water-use sector under a resolution or ordinance adopted or a contract entered into by the public water system, as long as that resolution, ordinance, or contract does not conflict with statutory provisions giving priority to water needed for domestic use, sanitation, and fire protection; and
- The amount of water that the water supplier can reasonably rely on receiving from other water supply projects, such as conjunctive use, reclaimed water, water conservation, and water transfer, including programs identified under Federal, state, and local water initiatives.

## **THE CALIFORNIA CLEAN AIR ACT**

The California Clean Air Act (CCAA) establishes an air quality management process that generally parallels the federal process. The CCAA focuses on attainment of the state ambient air quality standards that are more stringent than the Federal standards for certain pollutants and measurement periods.

The CCAA requires that air districts prepare an air quality attainment plan if the district violates state air quality standards for CO, sulfur dioxide, NO<sub>x</sub>, and ozone, but does not require an attainment plan for exceedances in particulate matter 10 microns in diameter or smaller (PM<sub>10</sub>) standards. The CCAA requires that the state air quality standards be met as expeditiously as practicable, but it does not set precise attainment deadlines.

The air quality attainment plan requirements established by the CCAA are based on the severity of air pollution problems caused by locally generated emissions. Upwind air pollution control districts are required to establish and implement emission control programs commensurate with the extent of pollutant transport to downwind districts.

## **CALIFORNIA AIR RESOURCES BOARD AIR POLLUTANTS AND AMBIENT AIR QUALITY**

### **STANDARDS**

The State of California and the Federal government have established ambient air quality standards for several different pollutants. For some pollutants, separate standards have been established for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other standards, such as protection of crops, materials, or avoidance of nuisance conditions.

## **CALIFORNIA GOVERNMENT CODE- ENVIRONMENTAL JUSTICE**

California law defines environmental justice as the “fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies,” in Government Code §65040.12(e). §65040.12(a) designates the Governor’s Office of Policy and Regulation (OPR) as the coordinating agency in state government for environmental justice programs and requires OPR to develop guidelines for incorporating environmental justice into general plans.

## **CALIFORNIA PUBLIC RESOURCES CODE- HISTORIC AND CULTURAL RESOURCES**

The California State Office of Historic Preservation reviews state programs and projects pursuant to Sections 5024 and 5024.5 of the California Public Resources Code. Federal and Federally-sponsored programs and projects are reviewed pursuant to Sections 106 and 110 of the National Historic Preservation Act. Section 106 of the NHPA, as amended, requires federal agencies to consider the effects of proposed Federal undertakings on historic properties. NHPA’s implementing regulations found in 36 CFR Part 800, require Federal agencies (and their designees, permittees, licensees, or grantees) to initiate consultation with the State Historic Preservation Officer as part of the Section 106 review process.

## **FARMLAND MAPPING AND MONITORING PROGRAM**

At the state level, the California Department of Conservation administers the Farmland Mapping and Monitoring Program (FMMP), which was designed to document how much agricultural land in California was being converted to nonagricultural land or transferred into Williamson Act contracts. Farmland classification is based on soil quality, irrigation status, and land use. “Prime” farmland is considered to have the best features able to sustain long-term agricultural production.

## **WILLIAMSON ACT**

The Williamson Act, also known as the California Land Conservation Act of 1965, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. When the County enters into a contract with the landowners under the Williamson Act, the landowner agrees to limit the use of the land to agriculture and compatible uses for a period of at least ten years and the County agrees to tax the land at a rate based on the agricultural production of the land rather than its real estate market value.

## **5.3 PLANS AND POLICIES**

### **CONCEPTUAL-LEVEL STRATEGY FOR AVOIDING, MINIMIZING, AND PRESERVING AQUATIC RESOURCE HABITAT IN THE SUNRISE-DOUGLAS COMMUNITY PLAN AREA**

In 2004, the USEPA, USFWS, and USACE developed a Conceptual Strategy for the Sunrise-Douglas Community Plan area. The Conceptual Strategy sets forth ten principles and standards that would be followed during development of projects within the Sunrise-Douglas Community Plan area in order to achieve reasonable protection and conservation of federally threatened and endangered species while taking a regional approach to avoidance and minimization of impacts to waters of the U.S., including wetlands. The Conceptual Strategy also supports development of the South Sacramento County Habitat Conservation Plan which seeks to protect vernal pool habitat within the Sunrise-Douglas Community Plan Area. Along with the Conceptual Strategy, a map was developed to identify preserve areas that represent the minimum acceptable level of onsite preservation required to maintain species and connectivity of their habitat, while recognizing that development is planned in the area.

## **VERNAL POOL RECOVERY PLAN**

The USFWS's Vernal Pool Recovery Plan establishes an ecosystem-level strategy for the conservation and recovery of vernal pools. It covers 33 plant and animal species that occur exclusively or primarily within the vernal pool ecosystems of California and southern Oregon. The objectives of the plan are to address the threats to vernal pool species and to promote the conservation and preservation of vernal pool ecosystems.

## **SOUTH SACRAMENTO HABITAT CONSERVATION PLAN**

The South Sacramento Habitat Conservation Plan (SSHCP) serves as a Habitat Conservation Plan pursuant to Section 10(a)(1)(B) of the ESA and is a regional approach to protecting natural resources in areas of development. Currently in draft, the Plan is a large-scale consolidated effort to protect and enhance wetlands (primarily vernal pools), aquatic, and upland habitats to provide ecologically viable conservation areas (County of Sacramento, 2008). Covering 40 different plant and wildlife species, including 10 that are state- or Federally-listed as threatened or endangered, the SSHCP will also serve to support application for Federal and state incidental take permits under the ESA and CESA.

## **RANCHO CORDOVA GENERAL PLAN**

The City of Rancho Cordova General Plan sets forth goals, policies, and actions that are applicable to the proposed project with respect to the following resource categories:

- Biological Resources
- Land Use
- Population and Housing
- Traffic and Transportation
- Public Health and Safety
- Socioeconomics

## **ZONE 40 WATER SUPPLY MASTER PLAN**

Zone 40 of the SCWA was formed to manage groundwater resources within the influence area of the Elk Grove cone of depression by providing for the acquisition, construction, maintenance, and operation of facilities for the production, treatment, transmission, distribution, conservation, and sale of ground and surface water within the zone. Zone 40 facilities would be constructed to meet the long-term water needs of the project area by providing for the conjunctive use of groundwater and surface water.

## **SDCP/SRSP WATER SUPPLY MASTER PLAN**

Prior to City of Rancho Cordova incorporation, a project-level Water Supply Master Plan for the SDCP/SRSP was prepared by the applicant, agreed to by the Sacramento County Water Resources Division, and submitted to the County for approval by the Board of Supervisors, prior to tentative map approval.

The project level Water Supply Master Plan for the SDCP/SRSP area consists of five studies, which were included as Technical Appendices WS-1, WS-2, WS-3, WS-4 and WS-7 to the Sunrise-Douglas Community Plan/Sunridge Specific Plan EIR.



## **WATER FORUM PLAN**

The objectives of the Water Forum Plan are to: (1) Provide a reliable and safe water supply for the region's economic health and planned development through the year 2030; and (2) Preserve the fishery, wildlife, recreational, and aesthetic values of the Lower American River. The first objective is to be met by additional diversions of surface water, increased conjunctive use of surface water and groundwater, expanded water conservation, and water reclamation. The second objective includes development of responsible and feasible alternatives to improve fish flow patterns, reduce daily flow fluctuations, and improve in-stream harvest.

The Final EIR for the Water Forum Plan was prepared in October of 1999; the City of Sacramento and County of Sacramento, acting as co-lead agencies, certified the Final EIR and adopted the Water Forum Plan in late 1999. Each of the stakeholders' governing bodies subsequently adopted the WFP in early 2000. Upon adoption, the WFP became the Water Forum Agreement, which is embodied in a Memorandum of Understanding between the City of Sacramento, the County of Sacramento and the various stakeholder groups.

## **REGIONAL HOUSING NEEDS PLAN**

California's Housing Element Law (Government Code 65584) mandates that councils of government develop the Regional Housing Needs Plan (RHNP) for their service area. The Sacramento Area Council of Governments (SACOG) is the lead agency in developing the RHNP for the 22 cities and 6 counties that it serves, including Sacramento County and the City of Rancho Cordova.

Each city and county in the RHNP receives a Regional Housing Needs Allocation (RHNA) of total number of housing units that it must plan for within a 7.5 year time period. Within the total number of units, allocations are also made for the number of units within four economic categories: very low, low, moderate, and above moderate incomes. The allocations are intended to be used by jurisdictions when updating their housing elements as the basis for assuring that adequate sites and zoning are available to accommodate at least the number of units allocated under the RHNP.

## **CITY OF RANCHO CORDOVA TRANSIT MASTER PLAN**

The Transit Master Plan provides an approach to support transportation objectives detailed in the City's General Plan. The plan proposes a system of city, neighborhood and regional services to connect residents to businesses, shopping, recreation and regional destinations. Regional services focus on bus rapid transit routes and additional stations along the Light Rail Gold Line. Local plans include shuttle services in the short term and an initial three-mile streetcar route in the long term.

## **MATHER AIRPORT COMPREHENSIVE LAND USE PLAN AND MATHER AIRPORT POLICY AREA**

The Airport Land Use Commission for Sacramento, Sutter, Yolo and Yuba Counties adopted a Comprehensive Land Use Plan (CLUP) for Mather Airport. This CLUP includes regional policies for land use compatibility with respect to aircraft noise. For Mather Airport, the CLUP states: "As development is proposed in the area between the 60 and 65 dB Community Noise Equivalent Level (CNEL) noise contours, affected cities and counties should evaluate the impact of aircraft noise on proposed development and consider requiring noise reduction measures, aviation noise easements and buyer-renter notification. The CLUP also makes a finding confirming the California Airport Noise Regulation definitions of compatible land uses. In May 1997, the Airport Land Use Commission adopted the updated CLUP for Mather Airport. The CNEL contours in the updated CLUP reflect noise levels anticipated from the airport's build out use as a County-operated aviation facility. The Sacramento County Board of Supervisors adopted the CLUP into the County's General Plan in 1998, by adopting the

Mather Airport Policy Area (MAPA). The MAPA places development restrictions on residential uses within the MAPA area. The project site is outside the MAPA area.

## **FIRE CODES AND GUIDELINES**

Several requirements and guidelines established by the Sacramento Metropolitan Fire District are applicable to the proposed project with respect to Public Health and Safety.

## **5.4 METHODS OF COMPLIANCE**

Table 5-1 provides a listing of the applicable laws, policies, and permit requirements that need to be addressed as part of implementing any of the EIS alternatives that involves construction. Included is the method of compliance, which could be the assessment of a resource area in this EIS, obtaining a permit or approval from a county or local agency, or additional consultation with Federal or state agencies.

<b>Table 5-1 Compliance with Applicable Laws, Policies, Plans, and Permit Requirements</b>	
<b>Applicable Laws, Policies, Plans, and Permit Requirements</b>	<b>Method of Compliance</b>
<b>Federal</b>	
National Environmental Policy Act	Addressed by this EIS
Endangered Species Act	Consultation with USFWS; Amendment to existing Biological Opinions, if appropriate
Migratory Bird Treaty Act	Addressed in EIS
Fish and Wildlife Coordination Act	Consultation with USFWS, Coordination Act Report, if appropriate
Executive Order 11990 – Protection of Wetlands	Addressed in EIS, CWA 404 permits
Clean Water Act	DA permit under Section 404 of CWA; Water quality certification under Section 401 of CWA
Safe Drinking Water Act	Ongoing reporting to CDPH
Clean Air Act	Addressed in EIS
Executive Order 12898 – Environmental Justice	Addressed in EIS
National Historic Preservation Act	Addressed in EIS; Consultation with SHPO
Key: CDPH = California Department of Public Health, CWA = Clean Water Act, EIS = Environmental Impact Statement, NPDES = National Pollutant Discharge Elimination System, SHPO = State Historic Preservation Office, USFWS = United States Fish and Wildlife Service	

<b>Table 5-1</b> <b>Compliance with Applicable Laws, Policies, Plans,</b> <b>and Permit Requirements (continued)</b>	
Applicable Laws, Policies, Plans, and Permit Requirements	Method of Compliance
<b>Federal</b>	
National Natural Landmarks	Addressed in EIS
Farmland Protection Policy Act	Addressed in EIS
Toxic Substances Control Act	Addressed in EIS
Resource Conservation and Recovery Act	Addressed in EIS
Comprehensive Environmental Response, Compensation, and Liability Act	Addressed in EIS
<b>State</b>	
California Endangered Species Act	Unknown
California Fish and Game Code	Addressed in EIS
Porter-Cologne Water Quality Control Act	Addressed in EIS, CWA 401 permits
California Department of Public Health Requirements	Ongoing reporting to CDPH
Senate Bill 901/Sacramento County General Plan Policy CO-20	Addressed in the EIS
California Clean Air Act	Addressed in EIS
California Air Resources Board and Ambient Air Quality Standards	Addressed in EIS
California Government Code- Environmental Justice	Addressed in EIS
California Public Resources Code- Historic and Cultural Resources	Addressed in EIS
Farmland Mapping and Monitoring Program	Addressed in EIS
Williamson Act	Addressed in EIS
Key: CDPH = California Department of Public Health, CWA = Clean Water Act, EIS = Environmental Impact Statement, NPDES = National Pollutant Discharge Elimination System, SHPO = State Historic Preservation Office, USFWS = United States Fish and Wildlife Service	

<b>Table 5-1</b> <b>Compliance with Applicable Laws, Policies, Plans,</b> <b>and Permit Requirements (continued)</b>	
Applicable Laws, Policies, Plans, and Permit Requirements	Method of Compliance
<b>Local</b>	
Vernal Pool Recovery Plan	Consultation with USFWS, Amendment to existing Biological Opinions, if appropriate
South Sacramento Habitat Conservation Plan	Consultation with USFWS, Amendment to existing Biological Opinions, if appropriate
Rancho Cordova General Plan	Addressed in EIS
Zone 40 Water Supply Master Plan	Addressed in EIS
Project Level Water Supply Master Plan	Subdivision Map Approval
Water Forum Plan	Addressed in EIS
Regional Housing Needs Plan	Addressed in EIS
City of Rancho Cordova Transit Master Plan	Addressed in EIS
Mather Comprehensive Land Use Plan and Mather Airport Policy Area	Addressed in EIS
Fire Codes and Guidelines	Building Permit
Sacramento County Land Grading and Erosion Control Ordinance	NPDES Permit Compliance
Key: CDPH = California Department of Public Health, CWA = Clean Water Act, EIS = Environmental Impact Statement, NPDES = National Pollutant Discharge Elimination System, SHPO = State Historic Preservation Office, USFWS = United States Fish and Wildlife Service	

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## **6 CONSULTATION AND COORDINATION**

### **6.1 PUBLIC INVOLVEMENT**

This section describes the public involvement activities that have occurred during the development of this document.

### **6.2 PUBLIC SCOPING**

On July 20, 2009, the USACE published a Notice of Intent (NOI) in the Federal Register to prepare an EIS for the Sunridge Properties. The NOI provided information on the Proposed Project Alternative and EIS preparation, submitting scoping comments, and attending scoping meetings. The USACE also issued a public notice on July 20, 2009, which included the same information found in the NOI. The public notice was sent to individuals who previously requested to be notified when public notices for actions in Sacramento County were available.

On July 30, the USACE held two public scoping meetings at the Rancho Cordova City Hall to solicit input on the preparation of the EIS. The meetings were held at 5:00 p.m. and 7:00 p.m. Comments were accepted during both scoping meetings and throughout the comment period, which ended on August 31, 2009. Four written comments were received during the scoping period from Federal, state, and local agencies and the general public in addition to verbal comments. Refer to Appendix E for a summary of the meeting materials and comments provided during scoping.

The key comments submitted during the scoping period were: the protection of aquatic resources, including wetlands and creeks; the protection of vernal pool grasslands and endangered species habitat; the scope of the cumulative impacts analysis; the project description; the vernal pool habitat mitigation; alternatives screening criteria and alternatives selection process; and floodplain management building requirements.

### **6.3 AGENCY COORDINATION**

On July 2, 2009, the USACE requested the USEPA and USFWS cooperate in the preparation of the EIS. The USEPA and USFWS were asked to be cooperating agencies under NEPA for their expertise with regard to aquatic resources and endangered species, respectively. The USEPA declined the role of cooperating agency on September 3, 2009. The USFWS did not respond to the USACE request. Although the agencies did not cooperate formally under NEPA, both the USEPA and USFWS provided input during preparation of this DEIS.

### **6.4 DOCUMENT AVAILABILITY**

By July 2, 2010, this document will be posted on the USACE website found at:

<http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html>.

A hardcopy of this document will also be available to the public at the USACE address found below.

Comments on this document must be submitted within 45 days (by August 15, 2010). Comments shall be sent to:

Michael S Jewell  
Chief, Regulatory Division  
US Army Corps of Engineers, Sacramento District  
1325 J Street, Room 1480  
Sacramento, CA 95814-2922

Any questions or comments concerning this document may be sent by e-mail or fax to:

E-mail: [michael.s.jewell@usace.army.mil](mailto:michael.s.jewell@usace.army.mil)  
Fax: (916) 557-6877

# 7 DOCUMENT PREPARERS AND REVIEWERS

## 7.1 PREPARERS

Table 7-1 presents the list of preparers for this EIS.

<b>Table 7-1 Preparers</b>	
<b>John Wondolleck, CDM</b> Associate <ul style="list-style-type: none"> <li>- EIS Technical Lead</li> <li>- Document Preparation and Review</li> <li>- 40 years of experience in management of multidisciplinary environmental programs, resource development and NEPA compliance</li> </ul>	<b>Randy Marx, P.E.,</b> Brown and Caldwell Senior Associate <ul style="list-style-type: none"> <li>- EIS Project Manager</li> <li>- Civil Engineer</li> <li>- 30 years of experience in management of multidisciplinary environmental programs, NEPA and regulatory compliance</li> <li>- Document Preparation and Review</li> </ul>
<b>Jennifer Jones, CDM</b> Environmental Scientist <ul style="list-style-type: none"> <li>- Biological Resources</li> <li>- Cumulative Effects</li> <li>- Compliance</li> </ul>	<b>Carol Lazzarotto, Brown and Caldwell</b> Supervising Scientist <ul style="list-style-type: none"> <li>- 18 years of experience in water resources, NEPA/CEQA, and environmental documentation</li> <li>- Document Preparation</li> <li>- Hydrology, Water Quality, Water Supply, Groundwater</li> <li>- Utilities and Public Services</li> <li>- Recreation</li> <li>- Cumulative Effects</li> </ul>
<b>Peggy Bloisa, CDM</b> Environmental Scientist <ul style="list-style-type: none"> <li>- Land Use</li> <li>- Population and Housing</li> <li>- Transportation</li> <li>- Cultural and History</li> <li>- Environmental Justice</li> </ul>	<b>John Ayres, PG, CHG, Brown and Caldwell</b> Hydrogeologist <ul style="list-style-type: none"> <li>- 8 years of experience in environmental compliance programs</li> <li>- Document Preparation</li> <li>- Noise</li> <li>- Geology and Soils</li> </ul>
<b>Wellington Yee, Brown and Caldwell</b> Supervising Scientist <ul style="list-style-type: none"> <li>- Hazardous, Toxic and Radioactive Wastes</li> <li>- Air Quality</li> </ul>	<b>Chris Reichard, Brown and Caldwell</b> Natural Resource Specialist <ul style="list-style-type: none"> <li>- USACE 404 Permitting Program</li> <li>- NEPA Specialist</li> <li>- Document peer review</li> <li>- Alternatives Development</li> </ul>
<b>Gina Veronese, CDM</b> Environmental Planner <ul style="list-style-type: none"> <li>- Socioeconomics</li> <li>- Environmental Setting</li> </ul>	<b>John Clerici, CirclePoint</b> Public Participation Specialist <ul style="list-style-type: none"> <li>- 17 years of experience in NEPA/CEQA and environmental project public involvement</li> <li>- Scoping Meeting Management</li> </ul>



<b>Table 7-1</b> <b>Preparers (continued)</b>	
<b>Tina Cox</b> , Brown and Caldwell Environmental Engineer – Visual Resources	<b>Lisa Sherman</b> , CDM Transportation Analyst – Traffic and Transportation
<b>Daniel Hooper</b> , Brown and Caldwell Senior Engineer – Climate Change	

## 7.2 REVIEWERS

Table 7-2 presents the list of USACE contributors for this EIS.

<b>Table 7-2</b> <b>Reviewers</b>	
<b>Michael Jewell</b> Chief, Regulatory Division U.S. Army Corps of Engineers, Sacramento District	<b>Lisa Clay</b> Assistant District Counsel U.S. Army Corps of Engineers, Sacramento District
<b>John Suazo</b> Environmental Technical Lead U.S. Army Corps of Engineers, Sacramento District	<b>William Ness</b> Senior Project Manager U.S. Army Corps of Engineers, Sacramento District Regulatory Division

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## **APPENDICES**

- A A Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area, June 2004
- B Department of the Army Permit Decision Documents
- C Department of the Army Permits for Sunridge Properties
- D USFWS Biological Opinions for Sunridge Properties
- E Materials and Comments Provided during Scoping
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## **Appendix A**

### **A Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area, June 2004**

# **A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area**

June 2004

In March through May 2004, representatives of the US Fish and Wildlife Service, US Environmental Protection Agency, and the US Army Corps Engineers (Agencies) met to formulate a conceptual-level strategy for avoiding, minimizing, and preserving aquatic resource habitat in the Sunrise-Douglas Community Plan Area (SDCPA). The intended result of this effort was to achieve reasonable protection and conservation of federally threatened and endangered species under the Endangered Species Act, while taking a regional approach to avoidance and minimization of impacts to waters of the US, including wetlands, in accordance with Section 404 (b)(1) guidelines under the Clean Water Act. The strategy also endeavors to ensure a viable South Sacramento County Habitat Conservation Plan (HCP) can be developed, given that a large proportion of vernal pool habitat under consideration by the HCP planners is at risk in the SDCPA.

The conceptual-level strategy is represented by preserve areas shown on the map titled Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection dated March 2004 (see attached). To meet the goals of ESA and the Clean Water Act, the Agencies arrived at the boundaries of the "Preserve Areas" based on best professional judgment and a limited amount of information regarding regional and site-specific biology and hydro-geomorphology (such as wetland delineations, species accounts, and environmental impact reports), while recognizing that development is planned in the area. Of particular focus is the preservation of vernal pool complexes and corridors for Morrison Creek and Laguna Creek. The mapped boundaries are the smallest that would be acceptable to the Agencies and are predicated on ten principles and standards that would be followed by developers and planners as each element of the overall development proceeds.

The conceptual level strategy should be used by developers and planners to design and plan projects in the SDCPA. The Agencies will use the strategy to aid in the review of proposed development and evaluate the probable individual and cumulative effects on aquatic resources and sensitive species.

The Agencies anticipate that permit decisions and biological opinions will be completed on a case-by-case basis, using site-specific project and aquatic resource habitat information. Each proposed project would be evaluated on its own merits within the larger context of the SDCPA. Depending on the particular hydrology, habitat features, and development plans for a particular parcel, the conceptual preserve boundaries may need to be adjusted to minimize direct and indirect impacts to aquatic resources. Appropriate compensatory mitigation will be developed following demonstrated avoidance and minimization of project impacts.

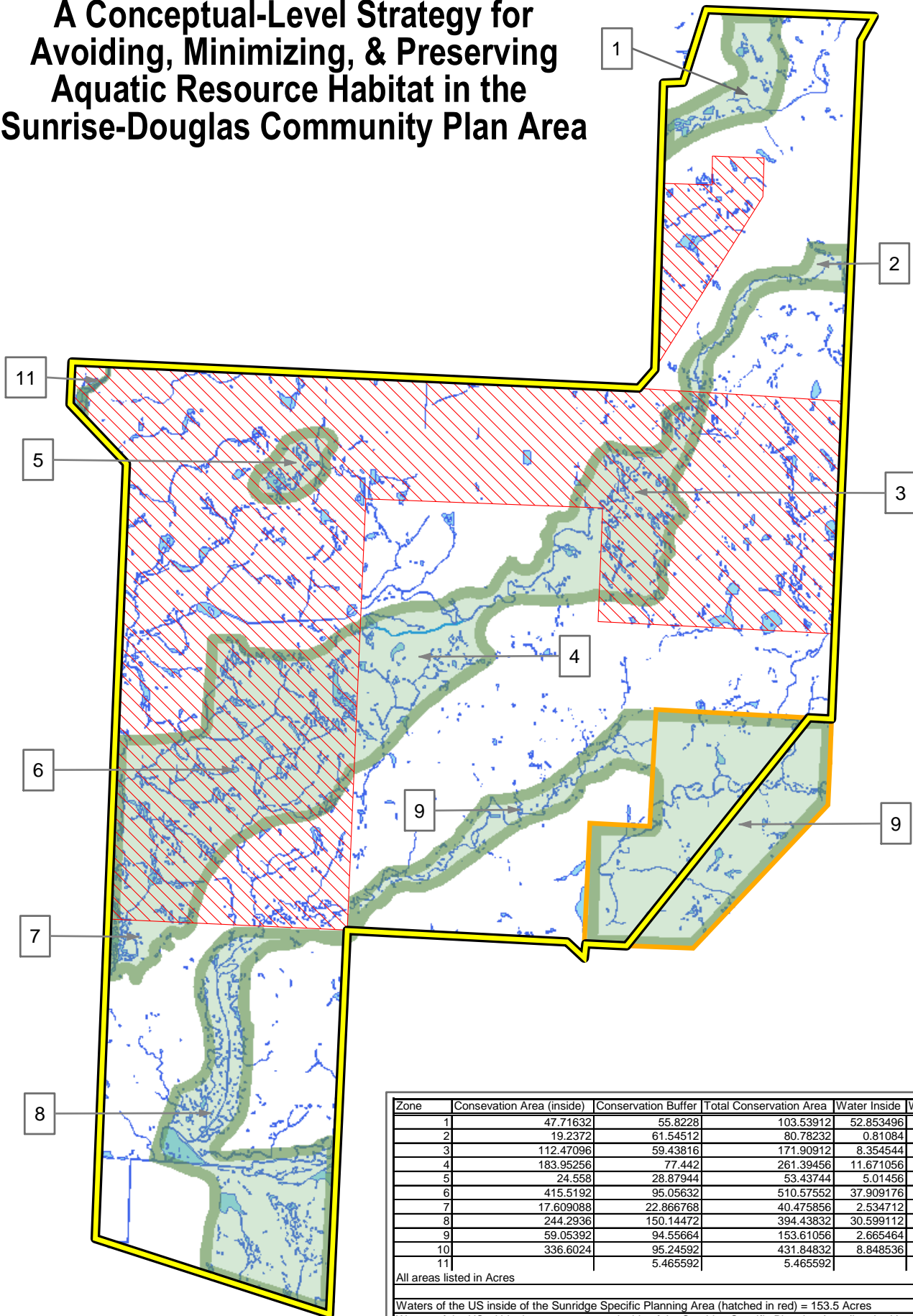
## **Strategy Principles and Standards:**

1. Maintain natural (existing) watershed integrity and flows to downstream reaches (distribution, frequency and duration), including restricting summer nuisance flows.
2. Maintain corridors and large areas for wildlife and the propagation of flora. Preserve vernal pool hydrology and integrity to benefit listed plants and invertebrates. Establish interconnected conservation areas that are managed in perpetuity and tie into existing local and regional planning efforts. Provide for meaningful conservation of sensitive plant habitats for species integrity and long-term survival.



3. Manage stormwater to retain the natural flow regime and water quality including not altering baseline flows in the receiving waters, not allowing untreated discharges to occur into existing aquatic resources, and not using existing aquatic resources for detention or transport of flows above current hydrology, duration, and frequency. All stormwater flows generated on-site and entering preserve boundaries would be pre-treated to reduce oil, sediment, and other contaminants.
4. Use elevated roads, arched crossings and other practices for transportation corridors that must traverse Preserve Areas to minimize direct and indirect impacts to aquatic resources and maintain the integrity of Preserve Areas. Hydrologic and biologic functions and values of the Preserve Areas would not be significantly impacted by road crossings.
5. Use conservation design elements. These elements include construction techniques such as using single-loaded roads where housing abuts Preserve Areas, designing roadside landscaping to drain (surface and subsurface) toward urban features and not toward the preserve boundary, and orienting houses such that the front living area faces the Preserve Area. Fences would be low and not restrict visibility into the Preserve Area. Impervious surfaces would be minimized. Stormwater/water runoff plans would be designed to maintain watershed integrity by employing such means as vegetated swales, infiltration trenches, and constructed wetland filter strips to treat stormwater and water runoff from the large increases in impervious surfaces.
6. Locate compatible land uses next to preserves. Acceptable land uses include parks, hiking trails, athletic fields, and other forms of open space. Developed trails would be outside the preserve boundary. Any irrigated fields or landscaping must not drain toward preserves. Cut and fill activities adjacent to the preserve boundaries would be minimized.
7. Mow-only firebreaks may be located at the outer edges of Preserve Areas. Mowing within the Preserve Areas should be conducted consistent with achieving the goals of the preserve management plan, including promoting native/discouraging non-native species. Firebreaks that necessitate herbicide application or tilling, plowing or other soil disturbance would be located outside of the Preserve Areas.
8. Ensure Preservation Areas are protected in perpetuity. This includes establishing buffers and not locating lot lines within the preserve boundary. Areas would be protected in perpetuity through conservation easement that is adequately funded for maintenance and managed by a conservation-oriented third-party. Preserve Areas would be fenced and signed.
9. Implement mitigation measures (avoidance, minimization, and compensation) that adequately offset direct and indirect impacts to aquatic resources and listed species. In general, establishing the Preserve Areas is considered a regional measure to achieve impact avoidance and minimization. Vernal pools that are directly impacted by projects should be mitigated at ratios equal to or greater than 2:1 for preservation and 1:1 for creation/restoration. Vernal pools indirectly affected should be mitigated at ratios equal to or greater than 1:1 for preservation and 1:1 for creation/restoration. Preservation and creation/restoration will generally be completed in the same watershed but not within, or in a way that would affect, existing wetland complexes. On a case-by-case basis, preservation credit may be given for vernal pools in the Preserve Areas (except for the 250-foot wide indirect impact zone). Excellent opportunities exist in or near the SDCPA for the establishment of a vernal pool conservation bank(s) and a wetland compensatory (i.e., restoration/creation) mitigation bank(s).
10. Recognize the realities and constraints placed on construction design due to infrastructure and market-driven forces.

# A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area



Zone	Conservation Area (inside)	Conservation Buffer	Total Conservation Area	Water Inside	Water Buffer	Water Total
1	47.71632	55.8228	103.53912	52.853496	1.840584	54.69408
2	19.2372	61.54512	80.78232	0.81084	1.897824	2.708664
3	112.47096	59.43816	171.90912	8.354544	3.8868504	12.2413944
4	183.95256	77.442	261.39456	11.671056	2.559408	14.230464
5	24.558	28.87944	53.43744	5.01456	0.858792	5.873352
6	415.5192	95.05632	510.57552	37.909176	8.056104	45.96528
7	17.609088	22.866768	40.475856	2.534712	3.708096	6.242808
8	244.2936	150.14472	394.43832	30.599112	11.204736	41.803848
9	59.05392	94.55664	153.61056	2.665464	2.604624	5.270088
10	336.6024	95.24592	431.84832	8.848536	2.31948	11.168016
11		5.465592	5.465592		2.511072	2.511072
All areas listed in Acres						
Waters of the US inside of the Sunridge Specific Planning Area (hatched in red) = 153.5 Acres						
Waters of the US within the preserve areas inside of the Sunridge Specific Planning Area (hatched in red) = 68.56 Acres						

Sources: Foothill Associates,  
Ecorp Consulting and USGS  
Projection: Region 9 Albers

0 1,000 2,000 3,000 4,000  
Feet



## **Appendix B**

### **Department of the Army Permit Decision Documents**

**DEPARTMENT OF THE ARMY PERMIT EVALUATION  
AND DECISION DOCUMENT**

Applicant: Sunridge, L.L.C., Mark Enes  
Application No: 199400210

This document constitutes my Environmental Assessment, Statement of Findings, and review and compliance determination according to the Section 404(b)(1) guidelines for the proposed work initially described in the attached Public Notice (Appendix A) as Anatolia IV (Application 200000336) (hereafter referred to as "Anatolia IV" or "Project"), and as revised subsequent to the Public Notice as described below.

Additionally, the Corps incorporates by reference the following documents: 1) Section 3.0, Environmental Setting, Impacts, and Mitigation Measures of the November 9, 2005, Anatolia IV Mitigated Negative Declaration (Appendix D); 2) November 2004 Regional Alternatives Information SunRidge Specific Plan Subarea, Sacramento County, California (Appendix E); 3) January 13, 2005 Clean Water Act 404(b)(1) Alternatives Analysis and On-site Minimization Measures, Sunrise Douglas Anatolia IV Property, Sacramento County, California (Appendix F); July 29, 2005 Addendum to the Alternatives Analysis, Sunrise Douglas Anatolia IV Property, Sacramento County, California (Appendix G).

I. Proposed Project: The proposed project is located within the SunRidge Specific Plan Area, which is within the larger Sunrise Douglas Community Plan Area, in Sections 3, 8, & 10, Township 8 North, Range 7 East, M.D.B.&M., in Sacramento County, California. The maps of the site and the description of the proposed work are in the attached Public Notice, and further described below.

The Project would consist of filling 1.36 acres of waters of the U.S. to construct 134 single-family homes (19.20 acres), a neighborhood park (2.57 acres), and road improvements (2.11 acres) on a 25-acre parcel. Anatolia IV lies within the County's approved 6,042-acre Sunrise Douglas Community Plan (Community Plan) area and approved 2,632-acre SunRidge Specific Plan (Specific Plan) area.

The site is comprised of level to gently rolling terrain, consisting mainly of non-native grasslands. Vernal pools lie within the grasslands. The majority of the site has been used historically as grazing land. There are no structures situated on the site.

**Prior Environmental Review in the Sunrise Douglas Area**

The Sunrise Douglas area in southeast Sacramento County is generally comprised of the area bounded by Douglas Road to the north, Sunrise Boulevard to the west, Grant Line Road to

the east and the Jackson Highway to the south. This area has been the subject of extensive land use planning and attendant environmental review processes under the California Environmental Quality Act ("CEQA") and, to a lesser degree, the National Environmental Policy Act ("NEPA").

Beginning in 1987, the Sammis Company ("Sammis") initiated a development project in the Sunrise Douglas area that became known as the Sunrise Douglas Project (herein referred to as the "SD Project"). The SD Project was originally planned as an industrial project covering approximately 1,225.5 acres of land owned/controlled by Sammis, bounded on the west by Sunrise Boulevard, and on the north and south by Douglas Road and Keifer Boulevard, respectively. Sammis applied for County approvals for the industrial development, but changed its proposal to a predominantly residential project about two years later (in 1989), after the announcement of the potential closure of adjacent Mather Field. The residential project required a General Plan amendment, zoning change, and permit from the Corps for fill of jurisdictional areas within the SD Project area. Sammis' request for General Plan amendment was the last of its kind in the Sunrise Douglas area because the County subsequently imposed a moratorium on general plan amendments pending its 1993 revision of the County General Plan.

The Corps and the County identified potentially significant environmental impacts associated with the SD Project, and as Lead Agencies, prepared a joint Environmental Impact Statement/Environmental Impact Report for the project under NEPA and CEQA, respectively (the "SD Project EIS/EIR").

#### A. The SD Project EIS/EIR

The Final SD Project EIS/EIR, published in January, 1992, evaluated the impacts of a primarily residential project on approximately 1,225 acres. According to the EIS/EIR, the information therein was intended for use by all agencies concerned with major developments in the County. The EIS/EIR determined the project area contained 82.14 acres of jurisdictional waters, including 68.06 acres of vernal pools. The development as proposed would impact approximately 38.15 acres, including 26.97 acres of vernal pools. The Corps considered this a substantial impact without appropriate mitigation. The SD Project EIS/EIR proposed a combination of avoidance and on-site creation of wetlands and vernal pools within a 482-acre reserve in the SD Project area, and an off-site preservation and creation component. All told, the SD Project EIS/EIR required a minimum of 27.01 acres of vernal pool creation (3.8 acres on-site and 23.2 acres off-site) and 14.08 acres of wetland creation on- and off-site. The SD Project EIS/EIR concluded that these on-site and off-site measures, together with provisions of the Wetlands Compensation Plan authorized for the wetland/vernal pool reserve, would at least maintain wetland and vernal pool functions and values in the area, thus sufficiently mitigate impacts to wetlands and vernal pools on site.

The SD Project EIS/EIR considered all other potentially substantial impacts from the development of the project and proposed mitigation measures to reduce all but a few impacts to below substantial levels. As the SD Project EIS/EIR noted, for this particular project, the

Corps limited its jurisdiction to waters of the United States, and analysis of direct, indirect and cumulative impacts and required mitigation associated with the Corps' action, the section 404 permit. (Final SD Project EIS/EIR, p. B-16). For other potentially substantial impacts, the County as CEQA lead agency analyzed and enacted sufficient mitigation measures to reduce potential impacts to below levels of significance in all but eight categories. The SD Project has been substantially constructed.

#### B. Sunrise Douglas Community Plan Sunridge Specific Plan EIR

In 1993, at about the same time as the certification of the SD Project EIS/EIR, the County initiated a Specific Plan process for the greater Sunrise Douglas area, encompassing over 5,000 acres of land, including the SD Project. The County then modified its approach and adopted a more conceptual Community Plan for the greater Sunrise Douglas area, encompassing approximately 6,042 acres, while reducing the area covered by the detailed Specific Plan to include approximately 2,632 acres, including the SD Project already covered by the SD Project EIS/EIR. The County prepared the Sunrise Douglas Community Plan/SunRidge Specific Plan EIR (herein, "Community Plan/Specific Plan EIR"). For the Community Plan area, the Community Plan/Specific Plan EIR analyzed an overall conceptual framework and policy direction for urbanization of the area covered by the Community Plan. Conceptual land uses were assumed for the Community Plan area outside of the Specific Plan area in order to evaluate the cumulative impacts of future urban development of this area. For the Specific Plan area, the EIR analyzed detailed land use and public facilities plans and corresponding zoning for near-term urban development within the Specific Plan area. The Community Plan/Specific Plan EIR also considered the findings and mitigation measures of the SD Project 404 permit because the SD Project is within the boundaries of the Specific Plan area. Thus, after the certification of the Community Plan/Specific Plan EIR in 2002, development proposed for 1,255 of the 2,632 total acres of the Specific Plan had been covered by the Corps' EIS/EIR and the entirety had been covered by a subsequently prepared EIR.

The City of Rancho Cordova issued the Mitigated Negative Declaration (MND) for the Anatolia IV on November 9, 2005. The City relied on the Sunrise Douglas Community Plan/SunRidge Specific Plan Final Environmental Impact Report, which was certified by the Sacramento Board of Supervisors on June 19, 2002.

#### C. Conceptual-Level Strategy for Avoiding, Minimizing and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area

In May 2002, prior to its certification of the Community Plan/Specific Plan EIS/EIR, the County initiated meetings regarding potential wetlands and endangered species permitting strategies for the entire Community Plan area. The U.S. Fish and Wildlife Service, the Corps and U.S. Environmental Protection Agency (the "Federal Agencies" or "Agencies"), the California Department of Fish and Game, and a majority of landowners and interested developers within the Specific Plan area attended these meetings. No resolution was reached. On July 17, 2002, the County approved both the Community Plan and the

SunRidge Specific Plan. The conditions of approval for the Specific Plan require individual applicants to obtain any necessary Corps permit for fill of waters of the United States. On July 1, 2003, with the incorporation of the City of Rancho Cordova ("City"), the Community Plan area came under the City's land use jurisdiction.

In early 2004, Congressman Doug Ose asked that all parties come together for further meetings among the stakeholders. The goal of these meetings was to cooperatively develop a conceptual on-site avoidance and off-site mitigation strategy that would satisfy the mandates of federal law administered by the Federal Agencies while allowing for development of the Specific Plan according to existing land use plans. As a result, the Corps, US Fish and Wildlife Service and the US Environmental Protection Agency developed a strategy that in concept would result in a workable framework for the planned development in the Community Plan and be consistent with the requirements under the Clean Water Act, the Endangered Species Act and other applicable laws.

The Conceptual-Level Strategy for Avoiding, Minimizing and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area dated June 12, 2004 (herein, "Conceptual Strategy," incorporated by this reference) sets out 10 principles and standards to assist property owners in identifying alternatives that minimize individual and cumulative effects on aquatic resources and sensitive species. Together with the 10 standards and principles, the Agencies released a Conceptual Strategy map for the Community Plan area. This map and the existing preserve established within the SD Project area, creates a concept for managing aquatic resource habitat within the Community Plan/Specific Plan area. The Conceptual Strategy preserve area would be protected and managed in perpetuity according to an Agencies-approved preserve management plan. The map, together with the 10 principles and standards and an agency approved preserve management plan, is a mitigation strategy designed to ensure that the functions of preserved aquatic resource habitat will be maintained. These measures were designed to protect the conditions of aquatic resource habitat within the Specific Plan, and to minimize both the project-by-project and cumulative effects associated with the development of the Specific Plan.

As part of the Conceptual Strategy process, the Corps addressed its approach to NEPA compliance within the Community Plan area. For the unpermitted area of the SunRidge Specific Plan (the Sunridge Specific Plan area excluding the SD Project), the permit applicants prepared an analysis of potential cumulative impacts and an evaluation of the practicability of different preserve designs. This information applied to seven individual applications for permits that were pending before the Corps, including four projects noticed together in the same Public Notice as the Project. (see Public Notice No. 200000336).

The City of Rancho Cordova and the Corps are in the process of preparing an EIS/EIR for the SunCreek Specific Plan portion of the Community Plan.

Based on implementation of the Conceptual Strategy and Regional Alternatives Information (discussed below), the US Environmental Protection Agency (US EPA) by letter dated April 26, 2004, and the US Fish and Wildlife Service (US FWS) by their Biological Opinion for

the Anatolia IV Project dated December 9, 2004, confirmed their decision not to elevate the Corps' 404 permit decisions on Anatolia IV and other applications pending in the SunRidge Specific Planning Area, pursuant to the 404(q) Memorandum of Agreement between the Federal Agencies. The Corps confirmed its concurrence of the Conceptual Strategy by letter dated October 29, 2004, to Mr. John Hodgson in response to his summary of the negotiations.

The Regional Alternatives Information SunRidge Specific Plan Subarea, Sacramento County, California, dated November 2004 (referred to herein as the "Alternatives Information Document") addresses regional and sub-regional cumulative impacts that may occur from the plan developed by the Agencies. The Alternatives Information Document analyzes the Conceptual Strategy map and eight other alternative reserve configurations according to criteria for minimizing jurisdictional impacts and providing connected reserve area(s), in light of cost, logistics and existing technology. The Corps incorporates the Alternatives Information Document into, and makes it a part of, this Environmental Assessment by reference.

## II. Environmental and Public Interest Factors Considered:

A. Purpose and need: The overall project purpose is to construct a small residential development in southeast Sacramento County. Construction resultant from the fill would provide additional housing to accommodate job growth and help address the existing housing shortage within Sacramento County.

### B. Alternatives [33 CFR 320.4(b)(4), 40 CFR 230.10]

The applicant submitted an alternatives analysis (dated August 27, 2004) and addendum to the alternatives analysis (dated July 29, 2005) for the Project prepared pursuant to the 404(b)(1) guidelines, incorporated by reference. In summary, the analysis first reviewed the potential alternative project locations within the Specific Plan area. All alternative locations within the Specific Plan area that met the acreage requirement of the applicant also contained at least as much, but typically greater, acreage of jurisdictional wetlands than Anatolia IV. In addition, as part of its analysis of potential alternate locations for the project, the analysis reviewed the conclusions of the Alternatives Information Document as applicable to the proposed project. The Alternatives Information Document concluded there were no practicable alternative locations for construction of the remaining Specific Plan Area projects; including Anatolia IV, that would meet the project purpose of constructing residential subdivisions within the southeast Sacramento area with any less damaging result for aquatic ecosystems.

The applicant provided alternatives information for three on-site design alternatives, including the proposed Project. The alternatives information discussed the multi-agency Conceptual Strategy as it applies to the project. The applicant discussed the project within the framework of the ten principles and standards discussed in the Conceptual Strategy, and



analyzed its level of compliance with the principles and the associated preserve map created for the entire Specific Plan area.

1. No action. The no permit alternative is the same as the no fill alternative discussed in the applicant's alternatives analysis. To avoid direct and indirect impacts to wetlands, the no permit alternative would require avoidance of all waters of the U.S., including a 250-foot buffer. This would require avoidance of 19.07 acres of land area (out of the 25 acres total), with 6.07 acres remaining for development. The remaining developable acreage would be further constrained by the size and sprawling pattern of the wetlands, including vernal pools, across the site. This alternative would not leave sufficient contiguous land to feasibly construct a residential development. In considering alternatives that would avoid all jurisdictional waters, the applicant considered the use of bridges and Conspan-type structures to avoid fill of waters, yet issues of maintaining safe and efficient circulation patterns still remain, making this alternative logistically infeasible and therefore not a practicable alternative.

2. Other project designs (smaller, larger, different, etc.). The applicant provided information on three different avoidance alternatives, of varying levels of avoidance, between the proposed Project, a conceptual partial avoidance alternative and no-fill alternative. The applicant did not provide a specific partial avoidance alternative, but instead provided a conceptual analysis of the practicability of on-site avoidance of wetlands. The applicant determined that any on-site preserve configuration would result in an isolated preserve. Additionally, the applicant indicated that any on-site preserve consistent with the principles and standards of the Conceptual Strategy would reduce the acreage available for development to a point that would preclude construction of a development consistent with the project purpose.

The applicant also participated in extensive discussions with the Federal Agencies in developing the Conceptual Strategy and accompanying Map for projects within the Specific Plan area. The Conceptual Strategy and Map identify: (1) wetlands and vernal pool avoidance areas within the Specific Plan, and (2) ten principles and strategies necessary to create an aquatic resource habitat avoidance and preserve area within the Specific Plan area that ensures overall project consistency with the requirements of the Endangered Species Act and Clean Water Act. The applicant has demonstrated that, as proposed, Anatolia IV complies with the Conceptual Strategy and Map.

3. Other sites available to the applicant: The applicant was unable to identify any sites within the Specific Plan area which were available and of sufficient size.

4. Other sites not available to the applicant (40 CFR 230.10): The 404(b)(1) Alternatives Analysis for Anatolia IV considered eight potential alternative sites within the Specific Plan area. As discussed in the Regional Alternatives Document, these sites did not meet the availability criterion because they were currently under development by other owners, and/or did not meet the environmental criterion because they were not less environmentally damaging as they were likely to have equal or greater impacts to aquatic

ecosystems on their sites.

5. Corps selected alternative: The Corps' selected alternative is the applicant's preferred alternative with inclusion of the following special conditions:

1. The Project shall comply with the provisions of the Conceptual-Level Strategy for Avoiding, Minimizing and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area dated June, 2004.
2. This Corps permit does not authorize you to take any threatened or endangered species, in particular the vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardii*), or designated critical habitat. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (e.g., and Endangered Species Act Section 10 permit, or a Biological Opinion under Endangered Species Act Section 7, with incidental take provisions with which you must comply). The enclosed Fish and Wildlife Service Biological Opinion (Number 1-1-04-F-0339, dated December 9, 2004), contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with incidental take that is also specified in the Biological Opinion. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached Biological Opinion, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the Biological Opinion, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The Fish and Wildlife Service is the appropriate authority to determine compliance with the terms and conditions of its Biological Opinion, and with the Endangered Species Act. The permittee must comply with all conditions of this Biological Opinion, including those ascribed to the Corps.
3. You shall develop a final comprehensive mitigation and monitoring plan, which must be approved by the Army Corps of Engineers prior to initiation of construction activities. The plan shall include mitigation location and design drawings, vegetation plans, including target species to be planted, and final success criteria, presented in the format of the Sacramento District's Habitat Mitigation and Monitoring Proposal Guidelines, dated December 30, 2004. The purpose of this requirement is to insure replacement of functions and values of the aquatic environment that would be lost through project implementation.
4. To mitigate for the loss of 1.36 acres of waters of the United States, you shall construct at least 1.36 acres of vernal pool and swale habitat at a Corps approved location.
5. You shall construct the required compensatory mitigation concurrently with, or in advance of, the start of construction of the permitted activity.
6. You shall complete construction of the compensatory mitigation no later than October 1, 2006.

7. To insure that mitigation is completed as required, you shall notify the District Engineer of the date you start construction of the authorized work and the start date and completion date of the mitigation construction in writing and no later than ten (10) calendar days after each date.
8. To provide a permanent record of the completed mitigation work, you shall provide two complete sets of as-builts of the completed work within the off-site mitigation area(s) to the Corps of Engineers. The as-builts shall indicate changes made from the original plans in indelible red ink. These as-builts shall be provided to this office no later than 60 days after the completion of construction of the mitigation area wetlands.
9. You shall establish and maintain, in perpetuity, preserve(s) containing the 1.36 acres of created/restored vernal pool habitat required by "Special Condition 4" and 2.72 acres of preserved vernal pool habitat at a Corps and U.S. Fish and Wildlife Service approved location(s).
10. To minimize external disturbance to preserved or created/restored waters of the United States, you shall establish an adequate buffer, consisting of native upland vegetation surrounding the entire perimeter of all created, preserved, and avoided waters of the United States, including wetlands within the proposed off-site preserves. This buffer shall be proposed within the compensatory mitigation and monitoring plan and the preserve management plans. These buffer widths shall be explicitly approved in writing by the Corps prior to any work in waters.
11. To insure that the preserves are properly managed, you shall develop a specific and detailed preserve management plan for the off-site mitigation, preservation, and avoidance areas. This plan shall be submitted to and specifically approved, in writing, by the Corps of Engineers prior to engaging in any work authorized by this permit. This plan shall describe in detail any activities that are proposed within the preserve area(s) and the long term funding and maintenance of each of the preserve areas.
12. To protect the integrity of the preserve and avoid unanticipated future impacts, no roads, utility lines, trails, benches, equipment or fuel storage, grading, firebreaks, mowing, grazing, planting, discing, pesticide use, burning, or other structures or activities shall be constructed or occur within the off-site mitigation, preservation, and avoidance areas without specific, advance written approval from the Corps of Engineers.
13. To prevent unauthorized access and disturbance, you shall, prior to December 31, 2006, install fencing and appropriate signage around the entire perimeter of the off-site preserves. All fencing surrounding mitigation, preservation, avoidance, and buffer areas shall allow unrestricted visibility of these areas to discourage vandalism or disposing of trash or other debris in these areas. Examples of this type of fencing include chain link and wrought iron.
14. Prior to initiating any activity authorized by this permit, you shall, to insure long-term

viability of mitigation, preservation, and avoidance areas:

- a. Establish a fully-funded endowment to provide for maintenance and monitoring of the off-site mitigation, preservation, and avoidance areas.
- b. Designate a Corps approved conservation-oriented third part entity to function as preserve manager and to hold the required conservation easements.
- c. Record permanent conservation easements and deed restrictions maintaining all mitigation, preservation, and avoidance areas as wetland preserve and wildlife habitat in perpetuity. Copies of the proposed deed restriction and conservation easement language shall be approved by the Corps of Engineers prior to recordation.
- d. Provide copies of the recorded documents to the Corps of Engineers no later than 30 days prior to the start of construction of any of the activities authorized by this permit.

15. To assure success of the preserved and created waters of the United States, you shall monitor compensatory mitigation, avoidance, and preservation areas for five years or until the success criteria described in the approved mitigation plan are met, whichever is greater. This period shall commence upon completion of the construction of the mitigation wetlands. Additionally, continued success of the mitigation wetlands, without human intervention, must be demonstrated for three consecutive years, once the success criteria have been met. The mitigation plan will not be deemed successful until this criterion has been met.

16. You shall submit monitoring reports to this office for each year of the five-year monitoring period, and for each additional year, if remediation is required, by October 1 of each year. You shall submit an additional monitoring report at the end of the three-year period demonstrating continued success of the mitigation program without human intervention.

17. You must allow representatives from the Corps of Engineers to inspect the authorized activity and any mitigation, preservation, or avoidance areas at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

C. Physical/chemical characteristics and anticipated changes (check applicable blocks and provide concise description of impacts).

(X) Substrate: The substrate primarily consists of Red Bluff loam (2-5% slopes) and Redding gravelly loam (0-8% slopes). These are well to moderately well drained soils found on high terraces and terrace remnants. Both of these soils contain a single unnamed hydric inclusion found in depressional areas. The project would affect all soils on the 25.14-acre site, including all 1.36 acres of waters of the U.S. (vernal pools). This fill does not

constitute a substantial impact because it will be mitigated through the creation of 1.36 acres of waters of the U.S. and the preservation of 2.72 acres. The impact on substrate overall is adverse but considered minor.

(X) Currents, circulation or drainage patterns: Site drainage flows into the vernal pool swale and flows off the western portion of the project site. Filled areas will be developed as part of the Corps Selected Alternative and drainage from these areas will be re-routed to the extent necessary to comply with post-construction stormwater plans for the Project site. Runoff from the Corps Selected Alternative will be re-routed to a storm water detention basin to be located within the Project and conveyed off-site via storm drain. The applicant is expected to comply with all post-construction storm water treatment requirements as set out in the City of Rancho Cordova's MS-4 permit and implement necessary water quality Best Management Practices to avoid the potential for substantial adverse nuisance flows from the Project to enter into waters of the United States. As a result, off-site impacts will be avoided.

(X) Suspended particulates; turbidity: Wetlands on-site likely have slightly turbid water during the rainy season. There is potential for increased turbidity during and after project construction. This potential will be minimized through compliance with the City of Rancho Cordova's MS-4 permit. Water quality BMPs required under the City's MS-4 permit will avoid substantial adverse impacts resultant from the entrance of suspended particulates and turbid runoff into waters of the United States. Only minimal impacts are expected provided the applicant complies with State Water Quality Certification (Appendix B).

(X) Water quality (temperature, salinity patterns and other parameters): Filled areas developed as part of the Project have the potential to contribute urban pollutants to runoff from the site into waters of the United States. These pollutants could include hydrocarbons, nitrates and ammonia, and heavy metals. As with turbidity, the Project is required to implement construction and operational BMPs that will avoid substantial adverse effects from polluted urban runoff into waters of the United States. Minimal impacts are expected provided the applicant complies with State Water Quality Certification (Appendix B).

( ) Flood control functions: None

( ) Storm, wave and erosion buffers: None

( ) Erosion and accretion patterns: None

(X) Aquifer recharge: Limited groundwater recharge in the Project area occurs on the Project site. Soils and underlying hardpan on the Project site result in little infiltration from the remaining, undeveloped portions of the Project area. Aquifer recharge from the Project site is minimal because of these site conditions. Runoff from new impervious

surfaces created as a result of the permitted fill would be collected and diverted through on-site drainage controls and ultimately released downstream. Some infiltration from these features would occur. Recharge would probably still occur, but at different locations and at different rates than under existing conditions, however no substantial adverse effects would likely occur.

( ) Baseflow: None

Additionally, for projects involving the discharge of dredged material:

( ) Mixing zone, in light of the depth of water at the disposal site; current velocity, direction and variability at the disposal site; degree of turbulence; water column stratification discharge vessel speed and direction; rate of discharges per unit of time; and any other relevant factors affecting rates and patterns of mixing.

D. Biological characteristics and anticipated changes (check applicable blocks and provide concise description of impacts)

(X) Special aquatic sites (wetlands, mudflats, coral reefs, pool and riffle areas, vegetated shallows, sanctuaries and refuges, as defined in 40 CFR 230.40-45): The project site currently contains 1.36 acres of vernal pools. The project, as proposed, will impact all 1.36 acres of vernal pools.

Compensatory mitigation will consist of restoration/creation of 1.36 acres of vernal pools which provides a 1:1 ratio of impacted to created wetlands. Areas restored or created will retain similar functions as wetland areas impacted in the Project site, assuring no net loss of wetland acreage and functions as a result of the permitted fill.

The proposed preservation component will consist of preserving a minimum 2.72 acres of high functioning vernal pool habitat. As discussed above, the functions associated with wetlands, including vernal pools on this site are similar or greater than those permitted for fill under this decision document.

(X) Habitat for fish and other aquatic organisms: Wetland and vernal pool habitat for the Federally listed vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardii*) will be affected by the permitted fill.

The applicant has proposed mitigation measures designed to mitigate impacts to aquatic habitat from the proposed fill. Mitigation includes off-site preservation of high quality wetland and vernal pool habitat, in addition to creation of vernal pool and wetland habitat. The preserved habitat will be located geographically and hydrologically similar to those areas impacted. Mitigation ratios are 1:1 for off-site creation and 2:1 for off-site preservation. Finally, the preservation and creation sites in which mitigation acreage are to be established will be maintained and preserved in perpetuity as habitat resources. The funding and

management of these areas provides environmental benefits in the form of habitat restoration, creation, and preservation. Thus, these measures will mitigate the effects of the proposed fill on aquatic habitat to below substantial levels.

(X) Wildlife habitat (breeding, cover, food, travel, general): The areas of proposed fill provide minimal foraging habitat for raptors and other birds due to absence of suitable habitat. Impacts to these habitat types will be offset by off-site preservation and off-site restoration/creation of greater quality wetland foraging habitat for bird species, and thus will not affect wildlife habitat.

(X) Endangered or threatened species: As discussed previously, the vernal pools subject to fill are assumed by the applicant to contain the threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and the endangered vernal pool tadpole shrimp (*Lepidurus packardii*). The Service issued a no-jeopardy biological opinion (1-1-04-F-0339), dated December 9, 2004 on the proposed fill activities for the Anatolia IV project. The Service concluded that the fill activities of the Corps' Selected Alternative will not jeopardize the continued existence of the listed vernal pool crustaceans because mitigation proposed as part of the Project, plus compliance with the agencies' Conceptual Strategy and Map will offset impacts to the listed species and their habitats. The Biological Opinion requires that mitigation measures proposed by the applicant be implemented through the 404 permit, and the implementation of those mitigation measures is included as a condition of the permit issued. Based on the conclusions of the no-jeopardy opinion, and the likelihood of success of planned mitigation, the permitted fill will not have substantial effects on endangered or threatened species, as mitigated.

(X) Biological availability of possible contaminants in dredged or fill material, considering hydrography in relation to known or anticipated sources of contaminants; results of previous testing of material from the vicinity of the project; known significant sources of persistent pesticides from land runoff or percolation; spill records for petroleum products or designated (Section 311 of the CWA) hazardous substances; other public records of significant introduction of contaminants from industries, municipalities, or other sources: According to the City of Rancho Cordova's MND, on page \_\_\_\_, the project site has no known past hazardous materials involvement. Additionally, although there is documented groundwater contamination in the plan area, the project does not include the use of on-site wells. Therefore, the potential for the project to result in exposure to the groundwater contamination is unlikely.

E. Human use characteristics and impacts (check applicable blocks and provide concise description of impacts):

(X) Existing and potential water supplies; water conservation: Water present in

the areas of proposed fill consists of annual precipitation, and does not represent a potential water supply. The proposed fill would not have an effect on existing or potential water supplies, nor would it cause an effect with regard to water conservation.

( ) Recreational or commercial fisheries: No effect.

( ) Other water related recreation: No effect.

(X) Aesthetics of the aquatic ecosystem: Aesthetics of the aquatic ecosystem have the potential to be adversely affected by development in and around waters of the United States on the project site.

( ) Parks, national and historic monuments, national seashores, wild and scenic rivers, wilderness areas, research sites, etc.: No effect.

(X) Traffic/transportation patterns: Current traffic and transportation patterns in the area of the proposed project exhibit growth underway in Sacramento County. Small collector roads connect to large arterial roadways. Potential traffic impacts were addressed in the Traffic Circulation Section of the Sunrise Douglas Community Plan and Sunridge Specific Plan (SDCP/SRSP) Master Environmental Impact Review (EIR). The SRSP would increase A.M. and P.M. peak hours and daily vehicle trips compared to existing traffic conditions. The SDCP/SRSP EIR identified traffic and circulation mitigation measures for development projects to adopt. The traffic impacts resulting from the Corp's action may be adverse but are considered minor overall when incorporating mitigation measures.

(X) Energy consumption or generation: Fill of jurisdictional areas would require energy for grading and fill, and would require additional energy for construction, operation and maintenance of improvements directly associated with filled jurisdictional areas. There is adequate capacity available to serve these future energy needs, and the impacts are not substantial.

( ) Navigation: No effect.

(X) Safety: The project will implement construction safety measures such that there is no potential for a substantial effect to safety.

(x) Air quality: The proposed permit has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit will not exceed de minimis levels of direct emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps continuing



program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit action.

(x) Noise: Fill of these areas, and improvements directly associated with this fill, are not expected to generate noise impacts in any substantial amount. In this case, land uses proposed on all portions of the applicant's project, particularly those improvements directed associated with jurisdictional areas to be filled, are expected to meet the County Noise Level Performance Standards (NLPSS) and County Land Use Compatibility standards set by the County's General Plan Noise Element (Community Plan/Specific Plan EIR, pp. 12.9e). These indicators are a common threshold used for assessment of significant noise impacts, and indicate the permitted fill will not result in substantial noise impacts.

(X) Historic properties (Section 106 National Historic Preservation Act): The project site does not appear to contain any sites listed, or eligible for listing, on the National Register of Historic Places. No previously recorded prehistoric or historic resources exist within the project site. Therefore, the proposed action is not expected to have an effect on historic properties.

(X) Land use classification: The proposed fill activity will occur in conjunction with construction of residential development on lands previously used for agricultural activities. These lands are located within the General Plan Urban Policy Area and are shown as a new Urban Growth Area in the Sacramento County General Plan, indicating the County's intent to plan for the urbanization of this area within the 20-year time frame of the General Plan.

(X) Economics: Construction associated with the project will provide jobs and may generate revenue for the local economy. In the long term, the project will help to address growing housing demand in the Sacramento County area. Housing shortage in the area has the potential to negatively affect continued economic growth in the southeast County area, and the greater Sacramento County area as a whole.

(X) Prime and unique farmland (7 CFR Part 658): The California Department of Conservation's Farmland Mapping and Monitoring Program designated the project site as grazing land and farmland of local importance, not as prime or unique farmland. According to the City of Rancho Cordova's MND, neither the grazing or farmland of local importance designation qualifies the project site as prime and unique farmland.

( ) Food and fiber production: No effect.

(X) General water quality: The existing quality of water in wetlands and other

waters of the United States on the Project site results from local precipitation, drainage from adjacent areas and residues of agricultural applications on site. Fill of wetlands and construction of the applicant's proposed project has the potential to add urban pollutant runoff.

Pursuant to Section 401 of the Clean Water Act, the applicant has obtained certification from the Central Valley Regional Water Quality Control District, issued December 30, 2004 (File No. 5A34CR00182). The 401 Certification concluded that the proposed project has proposed sufficient measures to adequately protect the identified beneficial uses of surrounding and downstream water courses. The applicant will comply with all post-construction storm water treatment requirements as set out in the City of Rancho Cordova's MS-4 permit and implement necessary water quality Best Management Practices to prevent substantial impacts to the water quality of surrounding and downstream areas.

(X) Mineral needs: Current activities at the project site do not require mineral needs. Construction of the project will necessitate the importation of aggregate, concrete, and asphalt. These materials will likely be supplied locally. No negative impacts are expected.

(X) Consideration of private property: The project area is currently private property owned by the applicants. The project is being permitted as proposed and the applicant's use of private property has been given appropriate consideration.

(X) Minority and Low Income Populations: The proposed action has been evaluated in accordance with Title VI of the Civil Rights Act and Executive Order 12898 regarding environmental justice populations. Impacts to the minority and low-income populations in the permit area will not be disproportionately high.

() Other:

F. Summary of secondary and cumulative effects: The Service estimates that any jurisdictional wetland or vernal pool habitat within 250 feet of project development will be indirectly impacted due to increased human presence, changes to hydrology or other created conditions. Habitat to the east is divided from the Project Site by a major roadway and therefore indirect impacts are not anticipated. Because lands to the north, west, and south are within the approved Sunrise Douglas Community Plan/SunRidge Specific Plan area, habitat in these areas would be directly removed and offset by adjacent proposed development. Therefore, separate Section 7 consultation will be initiated on lands adjacent to the project site and indirect impacts to these areas are expected to be offset through this process. The Service did not include indirect wetland impacts in its issuance of its no-

jeopardy Biological Opinion for the permitted fill, and concluded that the applicant's proposed mitigation measures sufficiently offset direct impacts to wetland and vernal pool habitat.

Cumulative effects are the incremental effects of the agency's proposed action, and past, present and reasonably foreseeable future actions in the locale of the agency's action. For analysis of cumulative impacts, the Corps has focused on the larger 1,345 acre subarea of the SunRidge Specific Plan area because a number of actions are currently pending in this area that could have potentially substantial cumulative effects. The City of Rancho Cordova has completed the land use entitlement process for each of these projects within this area, and the proposed actions are well-defined and the potential impacts are foreseeable. Moreover, each of the 404 permit applications pending in the SunRidge subarea are for geographically contiguous jurisdictional features and the permitted actions are planned to occur roughly during the same time frame. Because of the certainty of the land use entitlements, and the related geography and timing of the effects, they have the potential to be cumulative.

The Conceptual Strategy, and the detailed analysis in the Regional Alternatives Information address potential cumulative effects to both aquatic and non-aquatic resources in the subarea. The collaborative effort of the Federal Agencies and the numerous applicants participating in the Conceptual Strategy resulted in a plan to preserve wetlands and vernal pools in the area that collectively reduced direct loss of jurisdictional waters from almost 60 acres under the adopted Specific Plan, to just over 44 acres, while preserving 41.2% of vernal pool habitat within the Specific Plan. Each project has agreed to demonstrate consistency with the Conceptual Strategy and to incorporate mitigation that will ensure no net loss of wetlands. It is estimated that over 50% of the waters within the Community Planning Area will be protected under the conceptual preserve design. This is a substantial reduction of impacts to waters of the US as compared to the proposed level of development from the County of Sacramento. Thus, the Conceptual Strategy strives to avoid adverse cumulative effects by (1) increasing avoidance and preservation of wetlands and vernal pools within the subarea from what was initially proposed under the Specific Plan, (2) strategically identifying avoidance areas in a manner that minimizes edge effects and maximizes connectivity (3) coalescing these individual projects' avoidance and minimization efforts into a regional reserve designed to connect to the previously approved and existing Anatolia Preserve, thereby increasing connectivity between project avoidance areas and connectivity to downstream wetlands and vernal pools, and (4) creating large, intact corridors supporting the Morrison and Laguna Creek watersheds and associated vernal pools in the Specific Plan area. The Conceptual Strategy also sets out principles and standards for development surrounding the avoided wetlands and vernal pools that will reduce urban edge effects on these areas and to promote long-term retention of wetland and vernal pool functions. Last, the Conceptual Strategy areas are required to be monitored and managed in perpetuity according to preserve management plan to be submitted for the Federal Agencies' approval. The measures

specified in the Conceptual Strategy for the creation of a reserve according to the map will minimize cumulative impacts to jurisdictional wetlands and vernal pools within the Specific Plan area.

Future projects in the Sun Creek portion of the Community Plan area are as yet too uncertain to include within a cumulative impacts assessment at this time. The Corps has not received any applications for development in this area. However, the Corps and the City are planning to prepare a joint EIS/EIR for development in this area, which will further consider potential cumulative effects. The Community Plan/Specific Plan EIR does not provide more than conceptual information on jurisdictional impacts within the SunCreek area. The current EIS/EIR process will modify and refine land uses in this area, including the creation of a jurisdictional wetland and vernal pool preserve within the SunCreek area. Although impacts to wetlands are likely, because the EIS/EIR process is at an early stage it is not reasonably foreseeable to predict the impacts that could result from that future project. Subsequent applications for fill for projects within the Community Plan area will also be appropriately evaluated under NEPA and the conceptual strategy.

Together, past measures taken to reduce impacts at the Anatolia project (SD Project) combined with measures specified in the Conceptual Strategy for the SunRidge Specific Plan area, assure that adverse effects to jurisdictional wetland and vernal pool areas are not cumulatively substantial.

In addition to potential cumulative impacts to jurisdictional wetlands and vernal pools, the development of the Project, in conjunction with development of other projects noticed in Public Notice# 200000336 and others within the Specific Plan area, may have cumulative impacts to other categories of the human environment. The County's Community Plan/Specific Plan EIR discusses potentially substantial cumulative effects from development in the Specific Plan area. The County identified mitigation measures through the Specific Plan EIR, and incorporated land use planning policies within the Specific Plan that are designed to address cumulative impacts in these other categories such as traffic, noise, air quality and groundwater resources. The mitigation measures in the City of Rancho Cordova's MND for the Anatolia IV Project, in addition to measures implemented by the County's adoption of the SD Project EIS/EIR Mitigation and Monitoring Program, and future mitigation measures created for the SunCreek Specific Plan area, will assure adequate treatment of these categories of cumulative impacts.

The growth inducing effects of the permitted fill are expected to be minimal, due to the small size of the impacts resultant from the permitted fill, and more importantly because this area has already been designated as an urban growth area by the County's 1993 General Plan.

### III. Findings:

## A. Other authorizations:

1. Water quality certification: The applicant obtained water quality certifications from the Central Valley Regional Water Quality Control Board on December 28, 2004, File No. 5A34CR00182. The 401 certifications, including special conditions, are attached hereto as Appendix B.

Date: December 28, 2004

Issued: ☒ X ☐

Denied: ☐

Waived: ☐

Special Conditions Yes ☒ X ☐ No ☐ (If yes see attached)

2. State and/or local authorizations (if issued): None

B. A complete application was received on January 7, 2004. A public notice describing the project was issued on February 6, 2004, and sent to all interested parties (mailing list) including appropriate state and Federal agencies (Public Notice No. 200000336). All comments received on this action have been reviewed and are summarized below.

1. Summary of comments received.

a. Federal agencies:

1) U. S. Environmental Protection Agency (EPA):

EPA responded by letter dated April 26, 2004. EPA believed the 5 permit applications, as discussed in the Public Notice, would collectively cause unacceptable impacts to Aquatic Resources of National Importance (ARNI). However, EPA believed that implementation of the proposed Conceptual Strategy and creation of a large aquatic resource habitat reserve according to the Conceptual Reserve map created by the agencies would resolve Clean Water Act issues.

2) U. S. Fish and Wildlife Service (FWS):

FWS commented by letter dated April 26, 2004. The Service requested preparation of an Alternatives Analysis in compliance with the 404(b)(1) guidelines. The Service did not concur with the conclusions of the Sunrise Douglas Community Plan/SunRidge Specific Plan EIR regarding the identification of an environmentally superior alternative. The Service

commented on proposed recreated stream channels to be constructed within portions of the Specific Plan area. The Service believed impacts to water quality due to increased urban runoff were inadequately addressed. The Service recommended against in-stream storm water detention ponds. The Service believed proposed development within the Community Plan area would likely impact the Stone Lakes National Wildlife Refuge downstream of the Community Plan area. The Service commented on the potential of off-line water quality basins to impact the hydrology of streams running through the site. The Service commented that development within the Community Plan area would impact special status species. The Service commented that development within the Community Plan area would result in unacceptable impacts to ARNI. The Service commented that a comprehensive on-site mitigation strategy for wetlands and vernal pools in the Community Plan area was necessary. The Service commented that wetland mitigation and monitoring plan for the entire Community Plan area should be submitted to the federal agencies for their review. The Service believed that all interrelated projects receiving Nationwide Permits within the Community Plan area should instead be considered through the Individual Permit process. The Service recommended the adoption of the Conceptual Strategy and Conceptual Reserve map created by the agencies. The Service requested that the Corps initiate consultation under Section 7 of the Endangered Species Act.

- 3) National Marine Fisheries Service (NMFS): Not applicable.
- 4) Other: Not applicable.
- b. State and local agencies:

California Department of Transportation ("CalTrans") commented by letter dated March 25, 2004. CalTrans requested that any runoff from the proposed development not contribute a contaminant load to storm waters entering the State Highway System (SHS) right-of-way, and that all runoff entering the SHS meet Regional Board standards for clean water. CalTrans requested that increased flows to the SHS be mitigated. CalTrans requested the incorporation of environmental Best Management Practices to mitigate adverse drainage impacts.

- c. Organizations:

The California Native Plant Society (CNPS) commented by letter dated March 30, 2004. CNPS commented that the fill proposed under the Public Notice would impact an unusually high concentration and diversity of vernal pools in Sacramento County. CNPS commented it was inappropriate for the Corps to evaluate the proposed fill permits as individual actions because they are part of a single planning area (Specific Plan). CNPS commented that a piecemeal approach would discount significant cumulative project area effects on vernal pools. CNPS commented that an Environmental Impact Statement was needed to assess the

combined effect of Plan-area development and alternatives. CNPS commented that a County-wide study had shown the Community Plan area to have a high concentration and diversity of vernal pools. CNPS commented that the area hosted several listed species. CNPS requested that the permit applicants be required to include on-site preservation as part of their mitigation package for approved fill, and that it was not possible to fully mitigate for lost wetland area through preservation in distant areas of the County. CNPS requested that the Community Plan area contain a large core preserve area with inter-connected wildlife corridors. CNPS requested that vernal pool creation be avoided, especially within undisturbed vernal pool landscapes.

Stone Lakes National Wildlife Refuge Association (Stone Lakes) commented by letter on March 3, 2004. Stone Lakes made similar comments as CNPS, and commented that mitigation of impacts through preservation of vernal pools should preserve vernal pools with comparable geology, soil types, sizes, depths and densities. Stone Lakes requested that all rare plant occurrences be preserved, particularly Slender Orcutt Grass. Stone Lakes comments that the public has not had an opportunity to comment on a specific reserve mitigation plan for the SunRidge area until this point.

Barbara Vlamis, Executive Director of the Butte Environmental Council (BEC) commented by letter dated April 24, 2004. BUC commented that the applicants failed to provide alternatives to the project under 42 U.S.C. Part 4332(2)(c)(Vi), & (E). BEC commented that it was inappropriate for the Corps to evaluate the proposed permit actions noticed under the Public Notice as individual projects, and that such an approach would ignore the significant cumulative effects of the projects and others in the Community Plan area on the vernal pool ecosystem in Sacramento County. BEC commented that the Public Notice does not provide a cumulative impact analysis for public view. BEC requested that a more thorough mitigation and monitoring proposal be submitted for public review, and that preservation of intact vernal pools off-site was not adequate mitigation. BEC requested that permit processing be suspended until an EIS was prepared.

Citizens Committee to Complete the Refuge (CCCR) commented by letter dated April 26, 2004. CCCR commented that vernal pools in the Community Plan area should be considered ARNI. CCCR commented that fill proposals noticed in the Public Notice were for related and depended projects through their reliance on shared existing and proposed community infrastructure, and should therefore be considered as a single project. CCCR commented that the applicants should prepare an Alternatives Analysis under the 404(b)(1) guidelines to rebut the presumption that a practicable alternative exists to the proposed fill. CCCR commented that the applicants had made no attempt to minimize impacts. CCCR commented that the Corps should prepare an EIS prior to rendering a permit decision, and that impacts from the applicants' proposed fill be considered in concert. CCCR commented that minimal information regarding mitigation for impacts to jurisdictional waters had been provided to the

public.

d. Individuals: Many individuals submitted form comment letters regarding the proposed permits noticed under the Public Notice. The Corps reviewed and considered each letter, regardless of whether it was a form letter, but in the instance of a form letter, the comments set out by the first letter entered into the record for this Public Notice will be summarized and responded to herein, and the individual authors whom submitted version of each form letter are noted in Appendix C herein. Response to the first form letter shall be deemed response to each form received. Also noted in Appendix C are authors of numerous letters received in support of the Public Notice. Their comments have been reviewed and noted, if not specifically responded to herein.

Mr. David Wyatt commented by letter dated March 26, 2004. Mr. Wyatt commented that the fill applications covered in the Public Notice be considered cumulatively for significant impacts on natural communities in the impact area. Mr. Wyatt commented that sensitive species surveys should be conducted to determine the presence/absence of listed species within the areas proposed for fill. Mr. Wyatt commented that the Corps' no net loss policy for wetlands required the consideration of creation of large preserves. Mr. Wyatt suggested a 250-foot buffer for vernal pool preserve areas

Ms. Mary Beth Metcalf, M.D. commented by letter dated March 24, 2004. Ms. Metcalf requested that an EIS be prepared, that public hearings be arranged to disseminate additional information collected on environmental impacts.

Joan E. Berry commented by letter dated March 22, 2004. Ms. Berry commented that the Corps should preserve natural habitat in the Specific Plan area rather than approve development.

Irma Acevedo commented by letter dated March 26, 2004. The second page of Ms. Acevedo's letter was missing when admitted to the record. Ms. Acevedo commented that it is inevitable and logical to deduce that by evaluating their applications as individual projects the U.S. Army Corps of Engineers would fail to prove true protection. Ms. Acevedo requested an analysis of alternatives to development within the Specific Plan area and public hearings be held on the subject.

Rob Millberry commented by letter dated March 26, 2004. Mr. Millberry commented that the vernal pool habitat within the Community Plan area, despite its subtlety should be saved because of their rarity and high quality.

Sara M. Lee commented by letter dated March 26, 2004. Ms. Lee commented that 10 percent of the remaining vernal pools in Sacramento County are included in the Community



Plan area and the Corps should not approve their fill. Ms. Lee expressed concern that authorized fill of wetlands would result in negative impacts to water quality and greater demands on water supply. Ms. Lee commented that proposed fill would threaten the survival of vernal pool fairy shrimp. Ms. Lee requested that the Service be consulted on the proposed fill and that mitigation should not be in the form of creation. Ms. Lee expressed concern that the proposed fill for the Community Plan area would cause additional off-site impacts to hydrology of unfilled wetland areas.

M. Nasserri commented by letter dated March 12, 2004. M. Nasserri requested that the EPA, the Service and the Corps create a strategy for preserving wetlands and vernal pools in the SunRidge Specific Plan and Community Plan areas.

Elizabeth Kuehner commented by letter dated March 10, 2004. Ms. Kuehner commented that the vernal pool species in the Community Plan area were worthy of preservation.

Adrian A. Barnett commented by letter dated March 10, 2004. Mr. Barnett commented that the Corps should take action to preserve the Mather Field Vernal Pools.

Patricia Foulk commented by letter dated March 5, 2004. Ms. Foulk commented that potential fill of wetlands within the Specific Plan and Community Plan area would lead to irreversible fragmentation of vernal pools in these areas. Ms. Foulk commented that the fill proposed under the Public Notice would result in substantial loss of listed species. Ms. Foulk commented that development within the Community Plan area would impact hydrology in the Community Plan area and surrounding areas, and result in a loss of diversity of vernal pool types. Ms. Foulk commented that the success of creation mitigation is not scientifically supported and is not adequate mitigation for natural habitat. Ms. Foulk commented that the Specific Plan EIR did not sufficiently analyze wetland impacts and that an EIS should be prepared. Ms. Foulk commented that existing traffic conditions indicate the necessity of an EIS. Ms. Foulk commented that small, "vest pocket" preserves would not sufficiently preserve vernal pool habitat and species.

Jean V. Shepard commented by letter dated March 3, 2004. Ms. Shepard commented that all applications for fill covered by the Public Notice should be considered in concert as one application. Ms. Shepard requested that a large, connected wetland preserve be created in the area of the projects covered by the Public Notice.

Carin High commented by letter dated March 15, 2004. Ms. High submitted questions on behalf of Florence LaRiviere, Chairperson of Citizens Committee to Complete the Refuge, whose comments are summarized above.

Bonnie Tran commented by letter dated March 4, 2004. Ms. Tran submitted comments

regarding another application for fill, and requested that a vernal pool preserve be established in the Mather Field area.

Alexandra Lamb commented by letter dated March 22, 2004. Ms. Lamb commented that off-site preservation would not mitigate for potential impacts of the fill proposed in the Public Notice. Ms. Lamb commented that the Corps should preserve all vernal pools proposed for impact under the Public Notice and prepare an EIS covering the proposed fill.

Patricia Jones commented by letter dated March 1, 2004. Ms. Jones expressed concern over use of creation as a method for mitigating impacts to wetlands and vernal pools. Ms. Jones requested the preparation of an EIS for the fill proposed under the Public Notice.

## 2. Evaluation:

I have reviewed and evaluated, in light of the overall public interest, the documents and factors concerning this permit application as well as the stated views of other interested agencies and the concerned public. In doing so, I have considered the possible consequences of this proposed work in accordance with regulations published in 33 CFR Parts 320 to 330 and 40 CFR Part 230. The following paragraphs include my evaluation of comments received and how the project complies with the above cited regulations.

### a. Consideration of comments:

(1) US EPA responded by letter dated April 26, 2004. EPA believed the permit applications as discussed in the Public Notice would collectively cause unacceptable impacts to Aquatic Resources of National Importance (ARNI). Since 2002, the Corps, EPA, USFWS and other state and local agencies and landowners met to resolve the significant environmental concerns associated with the Sunrise Douglas Community Plan/SunRidge Specific Plan. As a result, the agencies produced a plan (A Conceptual-Level Strategy for Avoiding, Minimizing and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area, dated June 2004) and a map (Sunrise-Douglas Community Planning Area dated March 8, 2004) to significantly reduce impacts to waters by outlining large preserve areas along with a strategy for conservation. EPA stated in their letter dated that implementation of the conceptual-level strategy referenced above serves as a baseline for environmental protection. Properly implemented, it would resolve EPA's CWA issues through avoidance of aquatic resources and minimization of impacts. The proposed Anatolia IV project complies with the Conceptual Strategy created for the SunRidge Specific Plan Area.

Consistent with the Conceptual Strategy, the applicant proposes to compensate for impacts to wetlands through preservation off-site, and through restoration/creation of high quality wetlands. These actions will take place pursuant to a Mitigation and Monitoring Plan

prepared for and submitted to the Corps and the Service for review and approval. Thus, these measures offset any impacts to wetlands and vernal pools on the site and address EPA's concerns.

(2) The United States Fish and Wildlife Service (Service) commented by letter dated April 26, 2004. The Service requested preparation of an Alternatives Analysis in compliance with the 404(b)(1) Guidelines. The applicant has submitted an individual alternatives analysis for the Project, and has participated in the creation of the Regional Alternatives Document. The Alternatives Analysis submitted by the applicant determined that the Project site is the least environmentally damaging practicable alternative site of comparable size and availability within the Specific Plan area, and determined that the proposed Project design was the least environmentally damaging practicable, considering cost, logistics and existing technology.

The Service did not concur with the conclusions of the Sunrise Douglas Community Plan/SunRidge Specific Plan EIR regarding the identification of an environmentally superior alternative. However since their comment, the Service has participated in the finalization of the Conceptual Strategy and Conceptual Reserve map for the Specific Plan area.

The Service commented on proposed re-created stream channels to be constructed within portions of the Specific Plan area. This comment relates to development within the Community Plan area generally. Fill permitted pursuant to the Anatolia IV application will not be used to create any re-created stream channels, nor are there any proposed within the entire Project.

The Service believed impacts to water quality due to increased urban runoff were inadequately addressed. Impacts to water quality from the permitted fill for the Project will be minimal. The applicant will be required to comply with all requirements of the City's MS-4 permit in assuring adequate treatment of urban runoff, including implementation of water quality BMPs on the project site.

The Service recommended against in-stream storm water detention ponds. Fill permitted pursuant to the Anatolia IV application will not be used to create any in-stream detention ponds, nor are there any proposed within the entire Project.

The Service believed proposed development within the Community Plan area would likely impact the Stone Lakes National Wildlife Refuge downstream of the Community Plan area. Since Anatolia IV is not within the Upper Morrison Creek sub-watershed, any off-site flows resultant from fill permitted for the Project are not likely to reach the Stone Lakes Refuge, and therefore would have minimal impact on the Refuge.

The Service commented on the potential of off-line water quality basins to impact the hydrology of streams running through the site. Fill activities permitted pursuant to the Anatolia IV application will not contribute to the creation of any off-line water quality basins, nor are there any proposed within the entire project. The Project will otherwise implement adequate water quality BMPs to assure minimization of impacts to water quality from permitted fill for the Project.

The Service commented that development within the Community Plan area would impact special status species. The Service has subsequently issued a no-jeopardy biological opinion for proposed fill of the project, concluding that mitigation measures proposed for impacts to jurisdictional waters are sufficient to offset impacts to listed species and their habitat.

The Service commented that development within the Community Plan area would result in unacceptable impacts to ARNI. Please see our response to EPA's similar comment regarding ARNI, in d.(1) above. Subsequent to this comment, the Service has assisted in finalizing the Conceptual Strategy and accompanying Conceptual Reserve map, which enumerate protections necessary to adequately protect wetlands and vernal pools within the Specific Plan area.

The Service commented that a comprehensive on-site mitigation strategy for wetlands and vernal pools in the Community Plan area was necessary. Since this comment, the Service has assisted in finalizing the Conceptual Strategy and accompanying Conceptual Reserve Map for wetlands in the Specific Plan area. The Anatolia project complies with the principles and standards of the Conceptual Strategy and complies with the Conceptual Reserve Map through preservation. Landowners in the remaining area of the Community Plan outside the Specific Plan have agreed to prepare an EIS to further analyze impacts to wetlands in that portion of the Community Plan.

The Service commented that a wetland mitigation and monitoring plan for the Community Plan area should be submitted to the federal agencies for their review. The areas of permitted fill on the Anatolia project will be mitigated off-site at preserve areas approved by the Service.

The Service believed that all interrelated projects receiving Nationwide Permits within the Community Plan area should instead be considered through the Individual Permit process. In this case, the proposed fill related to the Anatolia Project is being considered under the individual permit process. Additionally, the applicant has requested authorization for all fill reasonably related to the Project, and therefore has complied with Corps regulations requiring the inclusion of fill activities necessary for a particular project under one permit application.

The Service recommended the adoption of the Conceptual Strategy and Conceptual Reserve map created by the agencies. Subsequent to this comment, the Service assisted in finalizing the Conceptual Strategy and Conceptual Reserve Map, and has been requiring compliance with them as a condition of its biological opinions, including the no-jeopardy opinion for Anatolia IV.

The Service requested that the Corps initiate consultation under Section 7 of the Endangered Species Act. The Corps has completed a section 7 consultation with the Service for the permitted fill on the Anatolia project, receiving a no-jeopardy biological opinion on December 9, 2004.

(3) Caltrans requested that any runoff from the proposed development not contribute a contaminant load to storm waters entering the State Highway System (SHS) right-of-way, and that all runoff entering the SHS meet Regional Board standards for clean water. Caltrans requested that increased flows to the SHS be mitigated. Caltrans requested the incorporation of environmental Best Management Practices to mitigate adverse drainage impacts.

The applicant will minimize impacts to water quality that could result from permitted fill through implementing applicable pre- and post-construction BMPs and otherwise complying with the requirements of the City's MS-4 permit. Additionally, the Anatolia IV project will abide by the conditions of the Clean Water Act Section 401 Water Quality Certifications for Anatolia IV, dated December 28, 2004.

(4) The California Native Plant Society (CNPS) commented that the fill proposed under the Public Notice would impact an unusually high concentration and diversity of vernal pools in Sacramento County. The proposed 404 permit for Anatolia IV will affect approximately 1.36 acres of vernal pools. These features are dispersed throughout the Project site, unlike other portions of the Specific Plan area that retain high concentrations of pools and wetlands in large vernal pool and wetland complexes. The site's off-site connections to the east have been cut off by the existing Jaeger Road. Given the small amount of vernal pool on the site, Anatolia IV does not provide a high concentration of high quality vernal pool habitat that may be characteristic of other areas of Sacramento County.

CNPS commented it was inappropriate for the Corps to evaluate the proposed fill permits as individual actions because they are part of a single planning area (the Specific Plan). The Anatolia project and the remaining Specific Plan development have been evaluated under the Conceptual Strategy.

The CEQ's NEPA regulations also require that federal agencies consider "connected" or "cumulative" actions under the same NEPA review, and grant the Corps discretion to consider similar actions together under a single review. (40 C.F.R. Part 1508.25.) Under

the guidelines, federal actions are connected if they, for example, automatically trigger other actions, cannot proceed unless other actions are taken previously or simultaneously, or are otherwise interdependent parts of a larger action and depend on the large action for their justification. Cumulative actions must also be included if, when viewed with other proposed actions, have cumulatively significant impacts that can be discussed in the same impact statement. Similar actions may be considered together when the best way to adequately assess the combined impacts of the similar actions would be to do so under one impact statement.

The Sacramento District uses an "independent utility" test to determine whether its actions are connected to other actions. An action is said to have independent utility, thus not connected, if it would take place with or without any other actions: Applying this standard, the fill necessary for Anatolia IV has independent utility since it could move forward regardless of whether the other applications under the Public Notice are approved or the associated projects constructed. The applicant has included all fill necessary to construct required roadway, potable water, wastewater disposal and other infrastructure that it cannot otherwise obtain from currently existing infrastructure in the area.

Under the CEQ NEPA regulations, separate federal actions that have a cumulatively significant impact should also be included under the same NEPA review. This requirement is subject to a rule of reason: where projects that may ultimately necessitate Corps' permit actions are insufficiently detailed to contribute to a meaningful analysis of their environmental impacts, the Corps is not required to include them. In this instance, all those activities within the Specific Plan area that have sufficient detail to be included in a cumulative analysis discussion, i.e., those that have submitted 404 permit applications, have been included within the cumulative impacts discussion of section V.F, above, in addition to earlier discussions of cumulative impacts in the area in the SD Project EIS/EIR and Community Plan/Specific Plan EIR. Using information from those previous studies as well as information in the current record, the cumulative impacts discussion in this Permit Evaluation concluded that this permit action would not result in cumulatively substantial impacts that would warrant the preparation of an EIS.

CNPS commented that a piecemeal approach would discount significant cumulative effects on vernal pools of proposed fill under the Public Notice, and that an Environmental Impact Statement was needed to assess the combined effect of development and alternatives. NEPA and its implementing regulations do not require an EIS for this permit decision. Under NEPA and federal law applying NEPA, a federal agency must review its proposed action to determine whether it will significantly affect the human environment, including cumulatively, and should prepare an EIS when, in the agency's determination, significant effects will occur that warrant the preparation of an intensive study of the agency's action and its effects, and when such an intensive study would provide additional meaningful information to the public

and the decision-making agency. The potentially significant cumulative impacts of development of the entire Specific Plan and Community Plan areas have already been addressed by the County's publicly available Specific Plan EIR, as discussed in these findings. Preparation of an EIS for effects occurring as the result of the permitted fill would not provide additional information to the public or to the Corps. The preparation of an EIS does not have the potential to provide the Corps with additional information on impacts that are within its authority or ability to control. Last, the Corps, EPA, Service and other state and local agencies and landowners met to resolve the significant environmental concerns associated with the Sunrise Douglas Community Plan/SunRidge Specific Plan. As a result, the agencies produced a plan (A Conceptual-Level Strategy for Avoiding, Minimizing and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area, dated June 2004) and a map (Sunrise-Douglas Community Planning Area dated March 8, 2004) to significantly reduce impacts to waters by outlining large preserve areas along with a strategy for conservation, thereby obviating the need to prepare an EIS.

CNPS commented that a County-wide study had shown the Community Plan area to have a high concentration and diversity of vernal pools. The applicant responded to the Service's similar comment in response to comment (2), above.

CNPS commented that the area hosted several listed species. However, the Service, through section 7 consultation with the Corps, has determined that mitigation proposed by the applicant will offset impacts to listed species from the permitted fill.

CNPS requested that the permit applicants be required to include on-site preservation as part of their mitigation package for approved fill, and that it was not possible to fully mitigate for lost wetland area through preservation in distant areas of the County. The Conceptual Strategy and Conceptual Reserve map creates a reserve system for the Specific Plan area that includes on-site avoidance through the Specific Plan. According to the Conceptual Reserve map, on-site avoidance is not necessary at Anatolia IV, particularly because the preservation of vernal pools on site would further degrade through time due to surrounding urban development, are small in acreage and lack habitat connectivity.

CNPS requested that the Community Plan area contain a large core preserve area with interconnected wildlife corridors. The Service, the Corps and EPA have collaborated to create such an area through the final Conceptual Strategy and Conceptual Reserve map.

CNPS requested that vernal pool creation be avoided, especially within undisturbed vernal pool landscapes. Anatolia proposes an off-site creation/restoration component to its mitigation proposal. The Corps and the Service both have final approval authority over mitigation proposal to assure that created wetlands and vernal pools do not damage existing features and are created and managed appropriately.

(5) Stone Lakes National Wildlife Refuge Association ( Stone Lākes ) submitted similar comments as CNPS. Responses to the CNPS comments, at section (4) above, are applicable to Stone Lakes' comments. In addition, Stone Lakes commented that mitigation of impacts through preservation of vernal pools should preserve vernal pools with comparable geology, soil types, sizes, depths and densities. The applicant intends to preserve existing high quality vernal pool habitat offsite.

Stone Lakes comments that the public has not had an opportunity to comment on a specific reserve mitigation plan for the SunRidge area until this point. However, specific mitigation proposals are not typically contained in the public notice or circulated for comment.

(6) Butte Environmental Council (BEC) commented that the applicants failed to provide alternatives to the project under 42 U.S.C. Part 4332(2)(c)(Vi), & (E). However, Corps regulations do not require publication of alternatives in a Public Notice. (33 C.F.R. Part 325.3.) Additionally, the Public Notice provides sufficient information for the public to consider and suggest possible fill alternatives to the Corps for consideration as part of the public interest review.

BEC commented that it was inappropriate for the Corps to evaluate the proposed permit actions noticed under the Public Notice as individual projects, and that such an approach would ignore the significant cumulative effects of the projects and others in the Community Plan area on the vernal pool ecosystem in Sacramento County. The applicant responded to similar comments from CNPS at section (4), above.

BEC commented that the Public Notice does not provide a cumulative impact analysis for public view. This document analyses potential cumulative impacts from the permitted fill. In addition, information on the cumulative impacts of proposed wetland and vernal pool fill has been available to the commenter through the Community Plan and Specific Plan EIR since 1998.

BEC requested that a more thorough mitigation and monitoring proposal be submitted for public review, and that preservation of intact vernal pools off-site was not adequate mitigation. The applicant responded to similar comments from CNPS and Stone Lakes at sections (4) and (5), above. The applicant's mitigation proposal for permitted fill has been reviewed by the Service, who determined that it offset impacts to listed vernal pool species and their habitats to be filled as part of the Project.

BEC requested that permit processing be suspended until an EIS was prepared. We responded to a similar comment from CNPS at section (4), above. We do not believe an EIS is warranted for this permit action.



(7) Citizens Committee to Complete the Refuge (CCCR) commented that vernal pools in the Community Plan area should be considered ARNI. EPA identified them as an ARNI.

CCCR commented that fill proposals noticed in the Public Notice were related by dependency on shared existing and proposed community infrastructure, and should therefore be considered as a single project. We have responded to a similar comment from CNPS, at section (4) herein. The Anatolia IV project was given full consideration under the Conceptual Strategy.

CCCR commented that the applicants should prepare an Alternatives Analysis under the 404(b)(1) guidelines to rebut the presumption that a practicable alternative exists to the proposed fill. We responded to a similar comment from the Service at section (2), above. The applicant has submitted an alternatives analysis, as discussed in section I of this decision document.

CCCR commented that the applicants had made no attempt to minimize impacts. The submitted 404(b)(1) analyzed seven on-site avoidance alternatives. As discussed in this decision document, the alternatives analysis concluded that the applicant's proposed project was the least environmentally damaging practicable alternative.

CCCR commented that the Corps should prepare an EIS prior to rendering a permit decision, and that impacts from the applicants' proposed fill be considered in concert. We responded to a similar comment from CNPS in section (4) above.

CCCR commented that minimal information regarding mitigation for impacts to jurisdictional waters had been provided to the public. The applicant has submitted a mitigation plan for review, which contains both an offsite creation and preservation component.

(8) Mr. David Wyatt commented that the fill applications covered in the Public Notice be considered cumulatively for significant impacts on natural communities in the impact area. The applicant responded to a similar comment from CNPS in section (4), above. In addition, this decision document has considered the potential cumulative impacts of the permitted fill, consistent with the request of the commenter.

Mr. Wyatt commented that sensitive species surveys should be conducted to determine the presence/absence of listed species within the areas proposed for fill. The applicant responded to a similar comment from CNPS at section (4) above. The Service has issued a no-jeopardy biological opinion concerning the permitted fill for the Project, and has concluded that the applicant's proposed mitigation offsets impacts to listed species and their habitats.

Mr. Wyatt commented that the Corps' no net loss policy for wetlands required the consideration of creation of large preserves. The agencies' Conceptual Strategy and Conceptual Reserve map is intended to create a large preserve of vernal pool and wetland habitat. As proposed, the Anatolia IV project complies with the Conceptual Strategy and Conceptual Reserve map.

Mr. Wyatt suggested a 250-foot buffer for vernal pool preserve areas. Comment noted. The Conceptual Strategy created by the agencies incorporates buffer requirements for the created reserve.

(9) Ms. Mary Beth Metcalf, M.D. requested that an EIS be prepared, that public hearings be arranged to disseminate additional information collected on environmental impacts. The applicant responded to similar comments from CNPS and Stone Lakes at sections (3) and (4), above.

(10) Joan E. Berry commented that the Corps should preserve natural habitat in the Specific Plan area rather than approve development. The Corps, together with EPA and the Service, have identified large blocks of vernal pool and wetland habitat to be preserved in the Specific Plan area through the Conceptual Strategy, while still allowing reasonable economic use of private land within the Specific Plan area.

(11) Irma Acevedo commented that it is inevitable and logical to deduce that by evaluating their applications as individual projects the U.S. Army Corps of Engineers would fail to provide true protection. We responded to similar comments from CNPS at section (4), above. The applicant has submitted an application which includes all fill necessary for its single and complete Project. Ms. Acevedo requested an analysis of alternatives to development within the Specific Plan area and that public hearings be held on the subject. We responded to similar comments from BEC and Stone Lakes, at sections (5) and (6) above.

(12) Rob Millberry commented that the vernal pool habitat within the Community Plan area, despite its subtlety should be saved because of their rarity and high quality. We responded to similar comments from Ms. Berry at section 10, above.

(13) Sara M. Lee commented that 10 percent of the remaining vernal pools in Sacramento County are included in the Community Plan area and the Corps should not approve their fill. We have responded to similar comments from Ms. Berry, in section (10) above. The Conceptual Strategy and Conceptual Reserve map was conceived in large part due to the agencies recognition of comments such as Ms. Lee's. The Strategy developed for the Specific Plan area permits compliance with Endangered Species Act and Clean Water Act protections for vernal pools in this area in conjunction with permitting reasonable

development on private lands within the Specific Plan area. In this case, the permitted fill for Anatolia IV will impact vernal pools that are not scheduled for protection under the agencies' Conceptual Reserve map.

Ms. Lee expressed concern that authorized fill of wetlands would result in negative impacts to water quality and greater demands on water supply. We have responded to similar comments from the Service regarding water quality at section (2), above. We did not conclude that the permitted fill would cause significant water quality or water supply impacts, and that the impact of the permitted fill for these categories of environmental impacts is adequately mitigated.

Ms. Lee commented that proposed fill would threaten the survival of vernal pool fairy shrimp. We responded to similar comments from the Service, at section (2), above, noting that the Service issued a no-jeopardy biological opinion for vernal pool fairy shrimp for the permitted fill covered by the Permit Evaluation, concluding that mitigation proposed by the applicant adequately offset impacts to fairy shrimp and its habitat resulting from the permitted fill.

Ms. Lee requested that the Service be consulted on the proposed fill and that mitigation should not be in the form of creation. We responded to similar comments from the Service at section (2) above.

Ms. Lee expressed concern that the proposed fill for the Community Plan area would cause additional off-site impacts to hydrology of unfilled wetland areas. The Service, in its no-jeopardy opinion, evaluated the potential for indirect impacts to wetlands and vernal pools into account.

(14) M. Nasserri requested that the EPA, the Service and the Corps create a strategy for preserving wetlands and vernal pools in the Specific Plan area. The Conceptual Strategy and Conceptual Reserve plan was designed to address this comment.

(15) Elizabeth Kuehner commented that the vernal pool species in the Community Plan area were worthy of preservation. We addressed similar comments from Ms. Lee and Ms. Berry at section (10) and (13), above.

(16) Adrian A. Barnett commented that the Corps should take action to preserve the Mather Field Vernal Pools. The permitted action will not impact vernal pools at Mather Field. The agencies are implementing the Conceptual Strategy to protect vernal pools in the Specific Plan area.

(17) Patricia Foulk commented that potential fill of wetlands within the Specific Plan and

Community Plan area would lead to irreversible fragmentation of vernal pools in these areas. Compliance with the agencies' Conceptual Strategy and Conceptual Reserve map will assure that large, intact areas of vernal pools and wetlands are preserved through the Specific Plan area. The Anatolia IV project is consistent with these plans.

Ms. Foulk commented that the fill proposed under the Public Notice would result in substantial loss of listed species. We have responded to similar comments from the Service in section (2), the CNPS in section (4), and Mr. Wyatt in section (8), above. The Corps has received a no-jeopardy biological opinion from the Service covering the permitted fill.

Ms. Foulk commented that development within the Community Plan area would impact hydrology in the Community Plan area and surrounding areas, and result in a loss of diversity of vernal pool types. As discussed in this decision document, the permitted fill for Anatolia IV does not have the potential to significantly impact vernal pool hydrology in the Community Plan area. The agencies' Conceptual Strategy is designed to reduce impacts to wetlands and vernal pools within the SunRidge Specific Plan unpermitted areas. For the remainder of the Community Plan area, to the south, the agencies and landowners have agreed to prepare an Environmental Impact Statement to address impacts to vernal pools and vernal pool species. Together, these actions will assure that permitting actions in the Community Plan area will not significantly impact wetlands hydrology.

Ms. Foulk commented that the success of creation mitigation is not scientifically supported and is not adequate mitigation for natural habitat. We have responded to similar comments from CNPS at section (4), above.

Ms. Foulk commented that the Specific Plan EIR did not sufficiently analyze wetland impacts and that an EIS should be prepared. We have addressed similar comments from CNPS at section (4) above. In this case, the permitted fill for the Montelena project will not result in significant impacts to wetlands, either individually or cumulatively. As discussed, the permitted fill is considered the least environmentally damaging practicable alternative for this site, and will not result in jeopardy to listed wetland and vernal pool species. It is also consistent with the Conceptual Strategy and will contribute to preservation of areas identified on the Conceptual Reserve map. These measures will assure that the permitted fill for the Project will not have a cumulative impact to wetlands in the area.

Ms. Foulk commented that existing traffic conditions indicate the necessity of an EIS. Traffic decision document addresses the potential impacts to traffic from the permitted fill. As discussed, the permitted fill is not expected to contribute to any roadways or intersections expected to be significantly impacted due to traffic.

Ms. Foulk commented that small, "vest pocket" preserves would not sufficiently preserve

vernal pool habitat and species. The permitted fill in this case would not contribute to the creation of wetland pocket preserves. The Conceptual Strategy further addresses this concern through the creation of a larger reserve stretching across multiple properties in the Specific Plan area.

(18) Jean V. Shepard commented that all applications for fill covered by the Public Notice should be considered in concert as one application. We addressed a similar comment from CNPS and the Service at sections (3) and (4), above. Ms. Shepard requested that a large, connected wetland preserve be created in the area of the projects covered by the Public Notice. We addressed a similar comment from Ms. Foulk in (17), above.

(19) Carin submitted questions on behalf of Florence LaRiviere, Chairperson of Citizens Committee to Complete the Refuge. Responses to the CCCR comments are set out above at section (7), above.

(20) Bonnie Tran submitted comments regarding another application for fill noticed in the Public Notice.

(21) Alexandra Lamb commented that off-site preservation would not mitigate for potential impacts of the fill proposed in the Public Notice. Ms. Lamb commented that the Corps should preserve all vernal pools proposed for impact under the Public Notice and prepare an EIS covering the proposed fill. We addressed similar comments from CNPS at section (4), above.

(22) Patricia Jones expressed concern over use of creation as a method for mitigating impacts to wetlands and vernal pools. Ms. Jones requested the preparation of an EIS for the fill proposed under the Public Notice. We responded to similar comments from CNPS at section (4), above.

b. Evaluation of Compliance with Section 404 (b)(1) guidelines (restrictions on discharge, 40 CFR 230.10). (A check in a block denoted by an asterisk indicates that the project does not comply with the guidelines.):

1) Alternatives test:

Yes ☐ No ☒ i) Based on the discussion in II B, are there available, practicable alternatives having less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharges into "waters of the United States" or at other locations within these waters?

Yes ☒ No ☐ ii) Based on II B, if the project is in a special aquatic site

and is not water dependent, has the applicant clearly demonstrated that there are no practicable alternative sites available?

Special restrictions. Will the discharge:

Yes\* ☐ No ☒

i) Violate state water quality standards?

Yes\* ☐ No ☒  
Act)?

ii) Violate toxic effluent standards (under Section 307 of the

Yes\* ☐ No ☒  
critical habitat?

iii) Jeopardize endangered or threatened species or their

Yes\* ☐ No ☒  
protect marine sanctuaries?

iv) Violate standards set by the Department of Commerce to

Yes ☐ No\* ☒

v) Evaluation of the information in II C and D above indicates that the proposed discharge material meets testing exclusion criteria for the following reason(s).

(X) based on the above information, the material is not a carrier of contaminants.

( ) the levels of contaminants are substantially similar at the extraction and disposal sites and the discharge is not likely to result in degradation of the disposal site and pollutants will not be transported to less contaminated areas.

( ) acceptable constraints are available and will be implemented to reduce contamination to acceptable levels within the disposal site and prevent contaminants from being transported beyond the boundaries of the disposal site.

3) Other restrictions. Will the discharge contribute to significant degradation of "waters of the United States" through adverse impacts to:

Yes\* ☐ No ☒

i) Human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife, and special aquatic sites?

Yes\* ☐ No ☒

ii) Life states of aquatic life and other wildlife?

Yes\* ☐ No ☒

iii) Diversity, productivity and stability of the aquatic ecosystem, such as loss of fish or wildlife habitat, or loss of the capacity of wetlands to

assimilate nutrients, purify water or reduce wave energy?

Yes\* ☐ No ☒ iv) Recreational, aesthetic and economic values?

4) Actions to minimize potential adverse impacts (mitigation).

Yes ☒ No\* ☐ Will all appropriate and practicable steps (40 CFR 230.70-77) be taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem?

Refer to Section II(b) (5) for special conditions.

c. General Evaluation [33 CFR 320.4 (a)]:

1) The relative extent of the public and private need for the proposed work. The project will address a public need for housing opportunities in an area with existing housing shortages. It will address the private need of the project proponent to realize the gain from project implementation.


2) The practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work. Alternative sites were considered, however these sites were found to be impracticable (see IV.B. above). Pursuant to these findings, the proposed fill is the least environmentally damaging practicable location and amount needed to affect the project purpose.

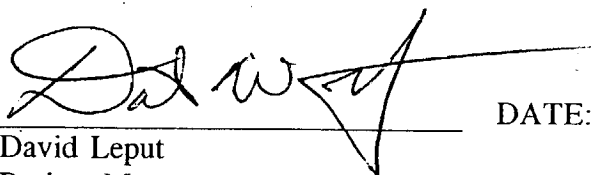
3) The extent and permanence of the beneficial and/or detrimental effects the proposed structures or work may have on the public and private uses to which the area is suited. The extent and permanence of the beneficial and/or detrimental effects of proposed structures or work may have on the public and private uses to which the area is suited. The loss of 1.36 acres of waters in the Project area will be effectively permanent and detrimental. The mitigation created by the applicant will be permanent, with dedication of conservation easement or other appropriate legal instruments over mitigation areas. As identified in the County's General Plan, Community Plan and Specific Plan, the area has been chosen for urban residential development as it is proximate to regional job centers and transportation. Permitted fill will have a beneficial effect on meeting housing demand, and on the public and private uses for which this area has been designated through the County's zoning and land use designations.

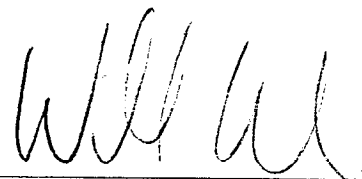
d. Significant National Issues: None.

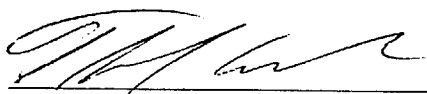
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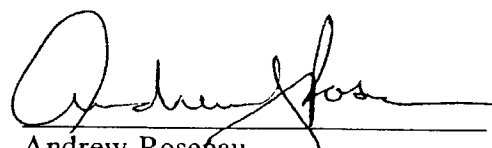
Parts 320 to 330, and 40 CFR Part 230 is not contrary / is contrary to the public interest.

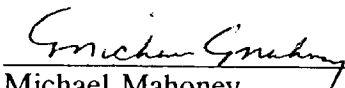
 DATE: 7 Feb 06  
Colonel Ronald N. Light  
District Engineer

PREPARED BY:  DATE: 3 Feb 2006  
David Leput  
Project Manager

REVIEWED BY:  DATE: 7 Feb 06  
Will Ness  
Chief, Sacramento Office

REVIEWED BY:  DATE: 3 Feb 06  
Thomas Cavanaugh  
Chief, Central California/Nevada Section

REVIEWED BY:  DATE: 3 Feb 06  
Andrew Rosebau  
Chief, Regulatory Branch

REVIEWED BY:  DATE: 3 Feb 06  
Michael Mahoney  
Chief, Construction-Operations Division

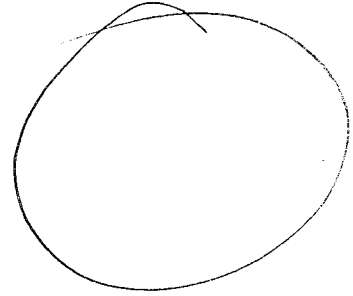


DEPARTMENT OF THE ARMY PERMIT

Permittee: Mark Enes  
Sunridge, L.L.C.  
7700 College Town Drive, Suite 101  
Sacramento, California 95826-2303

Permit Number: 199400210

Issuing Office: U.S. Army Engineer District, Sacramento  
Corps of Engineers  
1325 "J" Street  
Sacramento, California 95814-2922



NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below. A notice of appeal options is enclosed.

Project Description: To construct a residential subdivision, which contains 134 single-family homes (19.20 acres), a neighborhood park (2.57 acres), and roads including improvements (2.11 acres). The construction of the project will result in the permanent loss of 1.36 acres of waters of the United States (1.36 acres of vernal pools).

All work is to be completed in accordance with the attached plan(s).

Project Location: The project is located to the west of Jaeger Road and to the south of Douglas Road, in the SunRidge Specific Plan Area, in Sections 3, 8, & 10, Township 8 North, Range 7 East, M.D.B.&M, in Sacramento County, California.

Permit Conditions:

General Conditions:

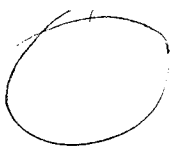
1. The time limit for completing the work authorized ends on December 31, 2010. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity

authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. The Project shall comply with the provisions of the Conceptual-Level Strategy for Avoiding, Minimizing and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area dated June, 2004.
2. This Corps permit does not authorize you to take any threatened or endangered species, in particular the vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardii*), or designated critical habitat. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (e.g., and Endangered Species Act Section 10 permit, or a Biological Opinion under Endangered Species Act Section 7, with incidental take provisions with which you must comply). The enclosed Fish and Wildlife Service Biological Opinion (Number 1-1-04-F-0339, dated December 9, 2004), contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with incidental take that is also specified in the Biological Opinion. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached Biological Opinion, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the Biological Opinion, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The Fish and Wildlife Service is the appropriate authority to determine compliance with the terms and conditions of its Biological Opinion, and with the Endangered Species Act. The permittee must comply with all conditions of this Biological Opinion, including those ascribed to the Corps.
3. You shall develop a final comprehensive mitigation and monitoring plan, which must be approved by the Army Corps of Engineers prior to initiation of construction activities. The plan shall include mitigation location and design drawings, vegetation plans, including target species to be planted, and final success criteria, presented in the format of the Sacramento District's Habitat Mitigation and Monitoring Proposal Guidelines, dated December 30, 2004. The purpose of this requirement is to insure replacement of functions and values of the aquatic environment that would be lost through project implementation.
4. To mitigate for the loss of 1.36 acres of waters of the United States, you shall construct at least 1.36 acres of vernal pool and swale habitat at a Corps approved location.
5. You shall construct the required compensatory mitigation concurrently with, or in advance of, the start of construction of the permitted activity.

- 
6. You shall complete construction of the compensatory mitigation no later than October 1, 2006.
7. To insure that mitigation is completed as required, you shall notify the District Engineer of the date you start construction of the authorized work and the start date and completion date of the mitigation construction, in writing and no later than ten (10) calendar days after each date.
8. To provide a permanent record of the completed mitigation work, you shall provide two complete sets of as-builts of the completed work within the off-site mitigation area(s) to the Corps of Engineers. The as-builts shall indicate changes made from the original plans in indelible red ink. These as-builts shall be provided to this office no later than 60 days after the completion of construction of the mitigation area wetlands.
9. You shall establish and maintain, in perpetuity, preserve(s) containing the 1.36 acres of created/restored vernal pool habitat required by "Special Condition 4" and 2.72 acres of preserved vernal pool habitat at a Corps and U.S. Fish and Wildlife Service approved location(s).
10. To minimize external disturbance to preserved or created/restored waters of the United States, you shall establish an adequate buffer, consisting of native upland vegetation surrounding the entire perimeter of all created, preserved, and avoided waters of the United States, including wetlands within the proposed off-site preserves. This buffer shall be proposed within the compensatory mitigation and monitoring plan and the preserve management plans. These buffer widths shall be explicitly approved in writing by the Corps prior to any work in waters.
11. To insure that the preserves are properly managed, you shall develop a specific and detailed preserve management plan for the off-site mitigation, preservation, and avoidance areas. This plan shall be submitted to and specifically approved, in writing, by the Corps of Engineers prior to engaging in any work authorized by this permit. This plan shall describe in detail any activities that are proposed within the preserve area(s) and the long term funding and maintenance of each of the preserve areas.
12. To protect the integrity of the preserve and avoid unanticipated future impacts, no roads, utility lines, trails, benches, equipment or fuel storage, grading, firebreaks, mowing, grazing, planting, discing, pesticide use, burning, or other structures or activities shall be constructed or occur within the off-site mitigation, preservation, and avoidance areas without specific, advance written approval from the Corps of Engineers.
13. To prevent unauthorized access and disturbance, you shall, prior to December 31, 2006, install fencing and appropriate signage around the entire perimeter of the off-site preserves. All fencing surrounding mitigation, preservation, avoidance, and buffer areas shall allow unrestricted visibility of these areas to discourage vandalism or disposing of trash or other debris in these areas. Examples of this type of fencing include chain link and wrought iron.
14. Prior to initiating any activity authorized by this permit, you shall, to insure long-term viability of mitigation, preservation, and avoidance areas:
- a. Establish a fully-funded endowment to provide for maintenance and monitoring of the off-site mitigation, preservation, and avoidance areas.
  - b. Designate a Corps approved conservation-oriented third part entity to function as preserve manager and to hold the required conservation easements.
  - c. Record permanent conservation easements and deed restrictions maintaining all mitigation, preservation, and avoidance areas as wetland preserve and wildlife habitat in perpetuity. Copies of the proposed

deed restriction and conservation easement language shall be approved by the Corps of Engineers prior to recordation.

d. Provide copies of the recorded documents to the Corps of Engineers no later than 30 days prior to the start of construction of any of the activities authorized by this permit.

15. To assure success of the preserved and created waters of the United States, you shall monitor compensatory mitigation, avoidance, and preservation areas for five years or until the success criteria described in the approved mitigation plan are met, whichever is greater. This period shall commence upon completion of the construction of the mitigation wetlands. Additionally, continued success of the mitigation wetlands, without human intervention, must be demonstrated for three consecutive years, once the success criteria have been met. The mitigation plan will not be deemed successful until this criterion has been met.

16. You shall submit monitoring reports to this office for each year of the five-year monitoring period, and for each additional year, if remediation is required, by October 1 of each year. You shall submit an additional monitoring report at the end of the three-year period demonstrating continued success of the mitigation program without human intervention.

17. You must allow representatives from the Corps of Engineers to inspect the authorized activity and any mitigation, preservation, or avoidance areas at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

( ) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.


a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal projects.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

- 
- a. Damages to ~~the~~ permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
  - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
  - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
  - d. Design or construction deficiencies associated with the permitted work.
  - e. Damage claims associated with any future modification, suspension, or revocation of this permit.
4. Reliance on Applicant's Data. The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant.

Circumstances that could require a reevaluation include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of this permit.
- b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

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Permittee

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Date

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

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Colonel Ronald N. Light,  
District Engineer

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Date

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

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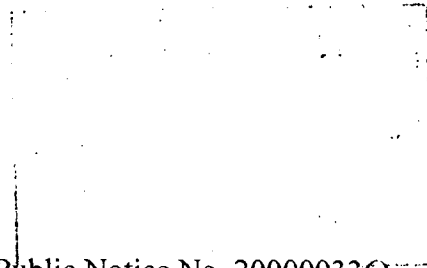
Transferee

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Date

July 29, 2005

Will Ness  
U.S. Army Corps of Engineers  
1325 J Street, Room 1444  
Sacramento, California 95814



Re: Anatolia IV Project; Corps Number 199400210 (Public Notice No. 200000336)

Dear Will:

On behalf of Sunridge, LLC, the enclosed On-site Addendum to the Alternatives Analysis is submitted for the Anatolia IV Project, Corps No. 199400210 (Public Notice No. 200000336.) This addendum is provided as a supplement to the Alternatives Analysis and On-Site Minimization Measures report provided to the Corps in November 2004, in support of the application for a Department of the Army Permit pursuant to Section 404 of the Clean Water Act.

This document provides an analysis of three on-site design alternatives, including the Proposed Project. This supplement applies the principles and standards of the Conceptual Strategy, as well as the Guidelines. Other documents previously provided include the Off-Site Alternatives outside the Specific Plan area, and a discussion of the Anatolia IV project with respect to the ten principles and standards set out in the Conceptual Strategy. The intention of the previously provided documents, and this one, is to assist the Corps in establishing the Least Environmentally Damaging Practicable Alternative, thereby complying with the Guidelines.

Please consider this addendum, along with the previously submitted documents, to complete the processing of the Anatolia IV permit application. Please call me if you require additional information, or for any questions.

Sincerely,

Peggy Lee

Enclosures

cc: Niki Doan, AKT Development  
Ellen Berryman, Berryman Ecological

**Clean Water Act §404(b)(1) Alternatives Analysis  
Addendum: On-Site Alternatives  
Anatolia IV Project; Corps File No. 199400210  
Public Notice 200000236  
Sacramento County, California**

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**Prepared for:**  
Army Corps of Engineers

**On Behalf of:**  
AKT Development  
7700 College Town Drive, Suite 101  
Sacramento, California 95826

**Submitted by:**  
Berryman Ecological  
985 Meadow Gate Road.  
Meadow Vista, California 95722  
(530) 852-4834





**404(b)(1) ALTERNATIVES ANALYSIS FOR THE  
ANATOLIA IV PROPERTY  
(Supplement)**

**SACRAMENTO COUNTY, CALIFORNIA**

**I.  
INTRODUCTION**

Section 404 of the Federal Water Pollution Control Act (the "Clean Water Act" or "CWA") regulates the discharge of dredged or fill materials into waters of the United States ("Waters"). The Clean Water Act vests authority in the Army Corps of Engineers ("Corps") to regulate such discharges via a program of reviewing and selectively permitting requests for fill authorization. (33 U.S.C. § 1344 (d).)

In the course of its permitting authority, the Corps must make a finding that its authorization to fill Waters complies with the environmental protection guidelines established by the Environmental Protection Agency at 40 CFR Part 230, known as the *Section 404(b)(1) guidelines*, ("Guidelines"). In part to address their responsibilities under the Guidelines, the Corps and EPA, together with the U.S. Fish and Wildlife Service (the "Service," together the "agencies"), crafted a Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving On-Site Aquatic Resource Habitat in the Sunrise Douglas Community Plan Area (herein the "Conceptual Strategy," submitted previously under separate cover).

The Conceptual Strategy is designed to result in a regional avoidance and preserve concept that meets the agencies' requirements under the Clean Water Act, the Endangered Species Act and other applicable laws, and provides a workable framework for the planned development in the Sunrise-Douglas Community Plan ("Community Plan") area and SunRidge Specific Plan ("Specific Plan") area. In conjunction with the Conceptual Strategy, the agencies prepared a Conceptual Reserve map of vernal pool and wetland avoidance within the Community Plan area designed to minimize direct and cumulative impacts to vernal pool and wetland functions and values within the area. The agencies' Conceptual Strategy also sets out 10 principles and standards to guide property owners in identifying project designs that minimize individual and cumulative effects on aquatic resources and sensitive species. Property owners within the unpermitted subarea of the Specific Plan area also prepared and submitted to the Corps a Regional Alternatives Information document that analyzed the Preserve identified by the Conceptual Strategy, and eight alternative preserve alignments, according to selection criteria including logistics, environmental, cost and compatibility with existing land use designations. Of the proposed alternative preserve alignments, the Conceptual Preserve alternative best met the requirements of the selection criteria.

This 404(b)(1) Alternatives Analysis document is provided as a supplement to the Conceptual Strategy and Regional Alternatives Information, as requested by the Corps.<sup>1</sup> This document provides an analysis of three on-site design alternatives, including the Proposed Project. This supplement applies the principles and standards of the Conceptual Strategy, as well as the Guidelines, to AKT Investments' 404 permit applications for its Anatolia IV project. Other documents previously provided include Off-Site Alternatives outside the Specific Plan area, and a discussion of the Anatolia IV project with respect to the ten principles and standards set out in the Conceptual Strategy. The intention of the previously provided documents, and this one, is to assist the Corps in establishing the Least Environmentally Damaging Practicable Alternative, thereby complying with the Guidelines.

## **II. PROPOSED PROJECT**

As proposed, Anatolia IV will develop approximately 19.20 acres of residential development, 2.11 acres of major roads, 1.26 acres of landscape corridors, and a 2.58 acre neighborhood park. Off-site improvements related to the project include widening the west side of Jaeger Road, and construction of Chrysanthy Boulevard. Anatolia IV lies within the County's approved Specific Plan area, and is compatible with the land use designations set out for the Sunridge Park site by the Specific Plan.

## **III IMPACTS TO WATERS OF THE UNITED STATES**

The Proposed Project will impact 1.36 acres of jurisdictional waters, which are all vernal pool. The project will have no on-site preservation.

## **IV. ANALYSIS OF ALTERNATIVE ON-SITE DESIGNS**

### **SCREENING CRITERIA FOR ON-SITE ALTERNATIVES**

Three on-site design alternatives, a no-fill alternative, the proposed project and a discussion of a partial avoidance alternative. Table 1, attached hereto, summarizes the costs, logistics, and environmental criterion of each alternative.

The following criteria are used to evaluate on-site designs for the Anatolia IV Project.

#### **Project Purpose**

- The alternative designs must accommodate the project purpose of a residential community including resident-serving public service components (a

<sup>1</sup> The Corps requested "on-site alternatives information to be provided by each applicant regarding the proposed steps to be taken on the project site to comply with the Conceptual Strategy." Letter from M. Jewell to J. Hodgeson, October 29, 2004.

neighborhood park), beginning in fall 2005, of approximately the same developable acreage as the proposed project.

- The alternative designs must comply with the principles and standards of the Conceptual Strategy

#### **Logistics**

- The alternative designs must provide for safe, efficient internal circulation, adequate access to adjacent road networks, and permit the necessary widening of adjacent Jaeger Road and construction of Chrysanthy Boulevard.
- The alternative designs must provide for adequate distribution of infrastructure and utilities.

#### **Cost**

- The alternative designs must have a cost per net developable acre that is approximately the same or less than that of the proposed Project.

#### **Environmental**

- The alternative designs must have significantly less impacts to aquatic resources than the proposed Project, without having other significant adverse environmental impacts.
- The alternative designs must have significantly less adverse impacts on federally-listed species than the Propose Project.
- The alternative designs must be consistent with the principles and standards of the Conceptual Strategy, which were conceived to create a viable Regional Preserve for vernal pool and wetland habitat designed to minimize the cumulative effects associated with developing the Plan Subarea. The principles and standards include:
  - Preserve designs with a low preserve perimeter to area ratio,
  - Preservation of contiguous vernal pool and wetland features that provide (or contribute to) large, contiguous open space areas,
  - Designs allowing for a minimum of 250' buffers between vernal pool and wetland features and adjacent development that limit potential indirect impacts.

#### **Overall**

- An alternative is not a practicable alternative unless it meets all of the above criteria.

## ANALYSIS OF ON-SITE ALTERNATIVES

### **Alternative One: No Fill Alternative**

The No Fill Alternative would avoid 1.36 acres of jurisdictional waters on the Anatolia IV site, consisting entirely of vernal pool. Incorporating adequate buffers of 250 feet to assure construction would not directly impact the avoided areas; the No Fill Alternative would leave 6.07 acres of developable area. Smaller buffers of 50 feet are also considered. The site with avoided area, showing buffers of 250 feet and 50 feet, is shown on Figure 3, attached.

### **Project Purpose**

The No Fill Alternative does not leave sufficient acreage to construct a residential project and a neighborhood park. The No Fill alternative, with 250-foot buffers, reduces the developable acreage to 6.07 acres out of the total 25.14 acres on the Project Site. The remaining net developable acreage is insufficient to fulfill the project purpose of a residential development and neighborhood park.

If the buffers are reduced to 50 feet, the amount of land required for avoidance is 7.57 acres, and the remaining acreage available for the project is 17.57 acres. The remaining developable acreage would be further constrained by the size and sprawling pattern of the wetlands across the site. The area in the center of the large central vernal pool would be inaccessible. The land remaining between the wetlands on the west border and the central vernal pool is very narrow and would have limited development potential. The land on the northeast section is likewise restricted. With the exception of the southeast portion of the site, build-out of the land surrounding the vernal pools results in isolated pockets of development requiring bridges or Conspan-type structures. The increase in costs due to the bridging would be prohibitive when measured against the gain in developable acreage. Therefore, this alternative would not leave sufficient contiguous land to feasibly construct a residential development which is similar in scope to the proposed project.

The No Fill Alternative does not comply with the Preserve design created under the Conceptual Strategy and does not fully comply with the principles and standards set out in the Conceptual Strategy, as discussed further in the Environmental Criterion section below. Therefore, the No Fill Alternative does not accomplish the Project Purpose.

### **Logistics**

Mitigation Measures included in the Sunrise Douglas Community Plan/Sunridge Specific Plan, (November 2001) require the construction of Chrysanthy Boulevard, and widening of Jaeger Road. The No Fill Alternative would require the use of bridges for the two road improvements to avoid impacts to jurisdictional features. With bridging, the No Fill Alternative could meet the logistics criterion.

### **Cost**

Because the No Fill Alternative would not fully comply with the Conceptual Strategy and would not be significantly less damaging to aquatic ecosystems, no specific cost numbers have been created for this analysis. Bridging required for the expansion of Jaeger Road, and construction of Chrysanthy Road under the No Fill Alternative will result in an increase in project costs. Additional bridging would be required to access development between the wetlands along the western border and the central vernal pool. The increase in costs and the reduction in the available net developable acreage under the No Fill Alternative result in a significant increase in the cost per net developable acreage over that of the proposed project.

### **Environmental**

As discussed below, avoidance of jurisdictional waters on the Anatolia IV site under the No Fill Alternative would not result in significantly less effects to aquatic ecosystems because of indirect impacts associated with development of the project.

The avoided areas remaining under the No Fill Alternative are not likely to continue to possess vernal pool and/or wetland functions and values in the long term, as they are vulnerable to indirect impacts from surrounding development, including altered hydrology, urban runoff, disturbance by residents and introduced exotic plant species. The 250 foot buffer No Fill Alternative leaves 6.07 acres net developable acreage, and is therefore impracticable. Reducing the buffers to 50 feet in order to increase the net developable acreage creates a preserve area that does not comply with the principles and standards for vernal pool habitat preservation set forth in the Conceptual Strategy. The vegetation in wetland areas bridged by the construction of Chrysanthy Boulevard and Jaeger Road would suffer impacts from severely reduced sunlight. Due to the sprawling shape of the wetlands, all of the vernal pools would have extremely high perimeter to area ratios leaving the pools vulnerable to edge effects and ruin the hydrology supporting the wetland functions.

Additionally, the avoided areas remaining under the No Fill Alternative are not likely to retain optimal functions and values in the long term as they are scattered throughout the site and generally not linked to the large, contiguous open space/preserve areas designed in the Conceptual Strategy. General sizing criterion for viable vernal pool avoidance areas—set both by federal resource agencies and widely accepted local studies of vernal pool preservation and management—favor large, densely populated avoidance areas since larger areas are more effective at preserving vernal pool ecosystem functions and values.<sup>2</sup> This qualitative criterion is reflected in the Conceptual Strategy and the Specific Plan EIR.<sup>3</sup> Left unconnected, the avoided areas remaining under the No Fill Alternative

<sup>2</sup> See Jones and Stokes Associates, Inc. 1990. *Sacramento County Vernal Pools: Their Distribution, Classification, Ecology and Management*. Prepared for the County of Sacramento, Planning and Community Development Department; and California Department of Fish and Game. 1998. California Vernal Pool Assessment Preliminary Report (available at [http://www.dfg.ca.gov/whdab/wetlands/vp\\_asses\\_rept/southeastern.htm](http://www.dfg.ca.gov/whdab/wetlands/vp_asses_rept/southeastern.htm) , last modified 1/31/05); and U.S. Fish and Wildlife Service, *Determining Vernal pool Preservation Credits Mainpage*, available at [http://sacramento.fws.gov/es/documents/vp\\_bank\\_cr.htm](http://sacramento.fws.gov/es/documents/vp_bank_cr.htm), last viewed on July 20, 2005.)

<sup>3</sup> Specific Plan EIR at p. 14.23: "Areas with dense concentrations of wetlands should be considered candidates for preservation. Preservation should be planned in relatively large contiguous blocks. Where

would not meet the acreage requirements for functioning vernal pool and wetland preserve areas, and would likely retain reduced functions and values as a result.

The small, unconnected avoided areas remaining under the No Fill Alternative are not likely to perform wetland ecosystem functions in the long term. The No Fill Alternative does not conform to the 10 principles and standards of the Conceptual Strategy and would not be consistent with the Conceptual preserve design. Therefore, the No Fill Alternative would not result in significantly less impacts on aquatic resources or listed vernal pool species.

### **Overall**

The No Fill Alternative would not meet the project purpose as it would not comply with the agencies' Conceptual Preserve design and would not fully comply with the 10 principles and standards of the Conceptual Strategies. The No Fill Alternative meets the logistics criterion if bridging were employed to avoid jurisdictional features. However, it fails to meet the cost criterion because the reduction in net developable acreage and the increase in costs for bridging for major roads and connections between separate development areas significantly increase the cost per net developable acre over those of the Proposed reject alternative. The No Fill Alternative would not meet the environmental criterion as the small, unconnected avoided areas on the project site would likely not remain viable in the long term. Thus avoidance would not result in significantly less impacts to aquatic ecosystems. Avoided areas under the No Fill Alternative would not be consistent with the Preserve created by the Conceptual Strategy or the principles and standards of the Strategy. Thus, the No Fill Alternative cannot be considered the least environmentally damaging practicable alternative.

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wetland acreage is diffuse and preservation is impractical, impacts should be mitigated by a combination of on-site construction to the extent appropriate and off-site/mitigation bank preservation."

## **Alternative Two: Partial Avoidance Alternative**

This Addendum does not provide a specific partial avoidance alternative, but instead provides a conceptual analysis of the practicability of partial on-site avoidance. Figure 3 shows the Project site wetlands with 50-foot and 250-foot buffers. There are three distinct groups of wetlands to consider avoiding: (1) the small circular vernal pools adjacent to the east border along Jaeger Road, (2) the singular vernal pool adjacent to the western border, and (3) the central vernal pool spanning the site from the north border south and southwest to the western border of the site.

A vernal pool is considered to be directly affected when a portion of it is filled. Therefore, the most logical scenario for a Partial Avoidance Alternative is to preserve the whole large, central vernal pool, and allow impacts to the wetlands on the west and east borders. However, preservation of the central pool would still fail to be the least environmentally damaging practicable alternative because it would be subject to the same indirect impacts listed above for the No Fill Alternative, and not be ecologically viable in the long term.

Chrysanthy Boulevard could be bridged over the north border of the preserve; however, a portion of the pool would be shaded in that section. If the buffer was 250 feet, consistent with the principles and standards listed in the Conceptual Strategy, the net developable acreage on the Project site would be insufficient to meet the project purpose of a residential community of a similar developable acreage to the Proposed Project. Further, the large decrease in developable acreage would substantially increase the cost per net developable acre over that of the Proposed Project.

Buffers of 50 feet would increase the net developable acreage, but the smaller buffers would not provide sufficient protection from surrounding land uses, and do not provide enough surrounding upland to maintain the hydrology necessary to sustain the ecological functions of the wetland. Due to the sprawling shape and narrow length on the southern portion, the pool has a high perimeter to area ratio, and would be highly vulnerable to edge effects from surrounding development. Left unconnected, the avoided areas remaining under a Partial Avoidance Alternative would not meet the acreage requirements for functioning vernal pool and wetland preserve areas, and would likely retain reduced functions and values as a result.

As with the No Fill Alternative, the small, unconnected avoided areas remaining under the Partial Avoidance Alternative are not likely to perform wetland ecosystem functions in the long term. The wetland is not contiguous with, and does not contribute to the Regional Preserve Area set out in the Conservation Strategy. It does not conform to the 10 principles and standards of the Conceptual Strategy and would not be consistent with the Conceptual preserve design. Therefore, the Partial Avoidance Alternative would not result in significantly less impacts on aquatic resources or listed vernal pool species.

### **Alternative Three: Proposed Project**

The Proposed Project Alternative design includes 19.20 acres of residential development, and a 2.57 acre neighborhood park site. There is no avoidance under the Proposed Project Alternative. The Proposed Project Alternative is shown on Figure Four, attached.

#### **Project Purpose**

The Proposed Project will fully develop the site in order to build the residential development and park site. It also provides land for the construction of Chrysanthy Boulevard and the widening of Jaeger Road. The Proposed Project retains 25.14 acres of developable acreage, including 19.20 acres for the residential subdivision, 2.11 acres for major road improvements, and a 2.57 acres neighborhood park. The Project Purpose criterion is met.

#### **Logistics**

The Proposed Project Alternative meets logistical requirements by providing for efficient internal circulation within the Project Area in accordance with the planned roadway alignments of the Specific Plan. The design allows for the widening of Jaeger Road, and construction of Chrysanthy Boulevard as required by the Community Plan EIR. Further, the Proposed Project meets the Specific Plan requirements for inclusion of the public service component of a neighborhood park.

#### **Environmental**

The wetland and vernal pool features impacted under the Proposed Project Alternative would result in the on-site loss of 1.36 acres of vernal pools. The vernal pools impacted under the Proposed Project Alternative retain a sprawling pattern and scattered distribution through the Project site. They do not meet the environmental criterion for low preserve perimeter to area ratios, and have no direct connection to any larger wetlands complexes set forth in the Conceptual Strategy Preserve Area. The on-site wetlands, including vernal pools, are not connected to the Regional Preserve, do not impact any tributaries or direct connections to vernal pools and wetlands within the Preserve area, and the on-site wetlands do not help to maintain or contribute to its ecological functioning.<sup>4</sup>

Wetlands to the east are divided from the Project Site by a major roadway; the land contiguous on the southern border has received a 404 permit, and is under construction. The Sunridge Ranch project borders the north and west boundaries of the Project Site, and is currently seeking a 404 permit in order to construct a residential development and other urban land uses. The Project Site is surrounded by land designated by the Sunridge Specific Plan as urban land use. Allowing impacts to the wetlands on the Project Site is consistent with the Conceptual Strategy objective

#### **Overall**

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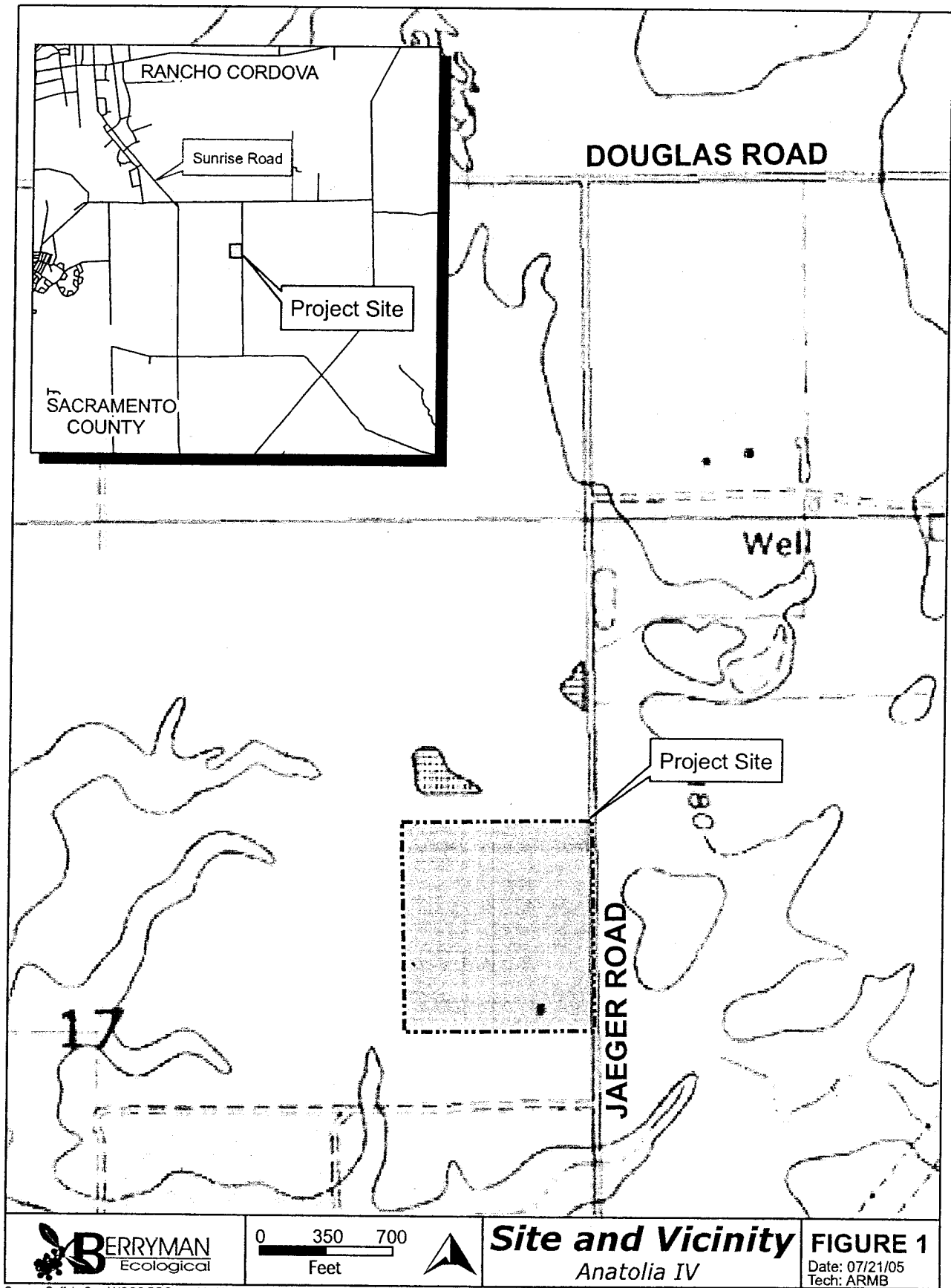
<sup>4</sup> The U.S. Fish and Wildlife Service has issued a no-jeopardy Biological Opinion for the Proposed Project.



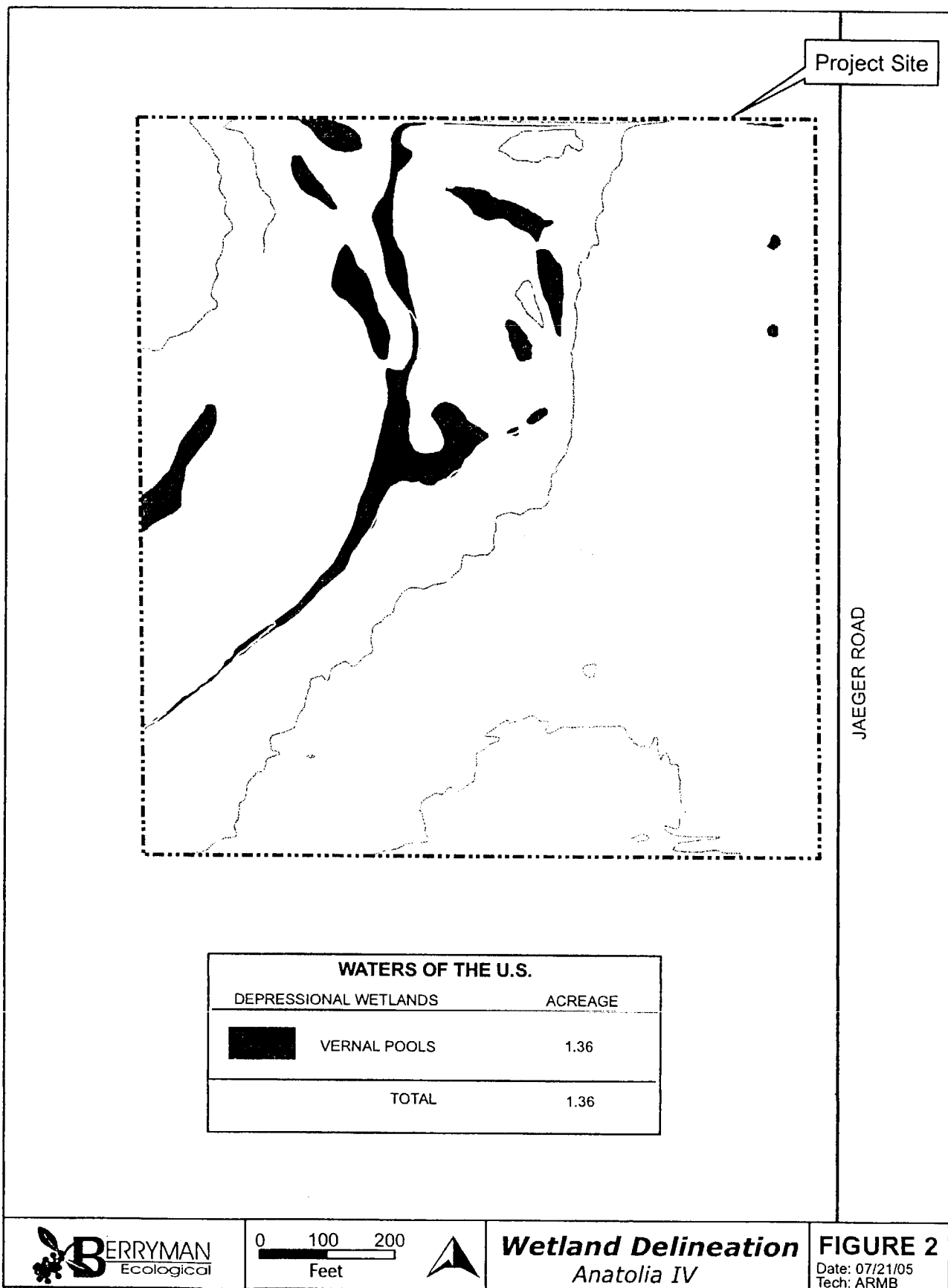
The Proposed Project meets the project purpose, logistics, costs and environmental criterion. It retains adequate developable area while providing for safe and efficient internal circulation, connection to regional roadways and required expansion of Jaeger Road and the construction of Chrysanthy Boulevard. The Proposed Project site has no connectivity to the any jurisdictional features necessary to maintain connectivity between portions of the Regional Preserve to the north, east and south of the Project. This avoidance assures that the Project is consistent with the regional preservation of wetland and vernal pool habitat within the Specific Plan Subarea pursuant to the Conceptual Strategy. Therefore, the Proposed Project is considered to be the least environmentally damaging practicable alternative.

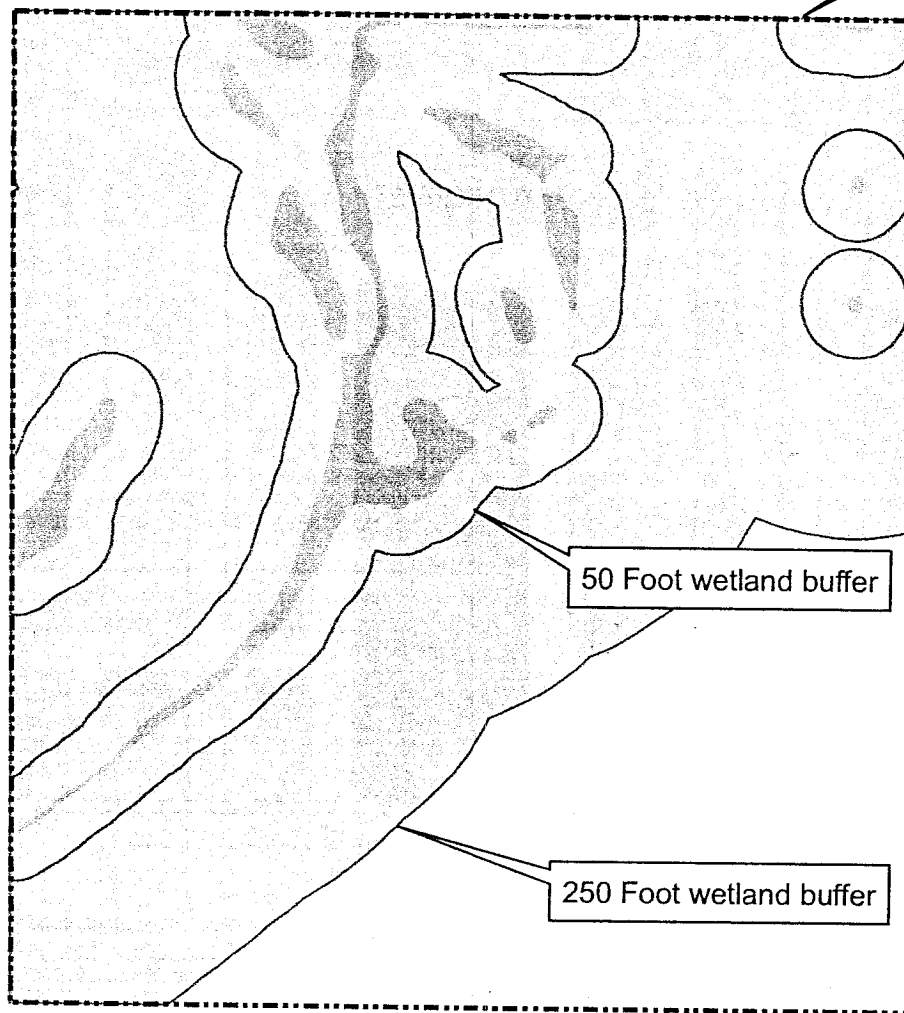
**Table 1. Assessment of On-Site Alternatives**

<b>DESIGN ALTERNATIVE</b>	<b>PROJECT PURPOSE</b> Does the alternative contain approximately 25 acres of developable area available for residential housing, a park and usable open space corridors and also comply with the Conceptual Strategy?	<b>COST</b> Does the alternative have a development cost per net developable acre that is approximately the same as or less than that of the Proposed Project Alternative?	<b>LOGISTICS</b> Does the alternative conform to the Land Use Plan infrastructure, internal circulation elements, and the widening of Jaeger Road, and Chrysanthy Blvd.?	<b>ENVIRONMENTAL</b> Does the alternative have significantly less impacts on aquatic resources than the Proposed Project Alternative and contribute to a viable Regional Preserve for vernal pool and wetland habitat?	<b>LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE</b>
<b>Proposed Project Alternative</b>	Yes	n/a	Yes	n/a	Yes
<b>Alternative 1:</b> Full avoidance alternative	No This alternative does not provide adequate developable acreage within the project for proposed uses, and the configuration of the on-site avoidance areas do not comply with the principles and standards of the Conceptual Strategy	No Increased costs due to the elevation of Jaeger Road and Chrysanthy Blvd to bridge wetlands, potential bridging in other areas of plan to provide adequate access and circulation, and reduction of net developable acreage	Yes Would meet logistics criterion with bridging for avoided areas associated with the road projects, and potential additional bridging to provide internal circulation and access within plan.	No Fails to contribute to a viable Regional Preserve as high -perimeter to area ratios indicate small, isolated features that lack connectivity to other preserve areas in the region.	No Not significantly less damaging. Not practicable. Avoided areas not likely to be ecologically viable in the long term, and would not contribute to planned preserves which support the Conceptual Strategy.
<b>Alternative 2:</b> Partial avoidance alternative	No The alternative does not provide adequate developable acreage for residential housing within the plan. It conforms with some but not all principles of the Conceptual Strategy.	No The overall reduction in developable acreage significantly increases the cost of developing the project.	Yes It complies with the logistics criteria listed above.	No While providing buffer areas around most of the avoided habitat and aquatic resources, the alternative does not contribute to a viable Regional Preserve and was not identified as a key preservation area on any of the Conceptual Strategy preserve maps.	No Not significantly less damaging. Not practicable.



Source: Buffalo Creek USGS DRG provided by Maptech. Property lies within T8N, R7E, Section 17, Mt. Diablo Meridian.





<div style="display: flex; align-items: center;"> <div style="width: 20px; height: 10px; background-color: #cccccc; margin-right: 5px;"></div> <div>Wetlands</div> <div>1.36 acres</div> </div>		
	Wetland Buffer Acreage	Remaining Acreage
<div style="display: flex; align-items: center;"> <div style="width: 20px; height: 10px; background-color: #f0f0f0; margin-right: 5px;"></div> <div>50 Foot Buffer</div> </div>	7.57	17.57
<div style="display: flex; align-items: center;"> <div style="width: 20px; height: 10px; background-color: #e0e0e0; margin-right: 5px;"></div> <div>250 Foot Buffer</div> </div>	19.07	6.07



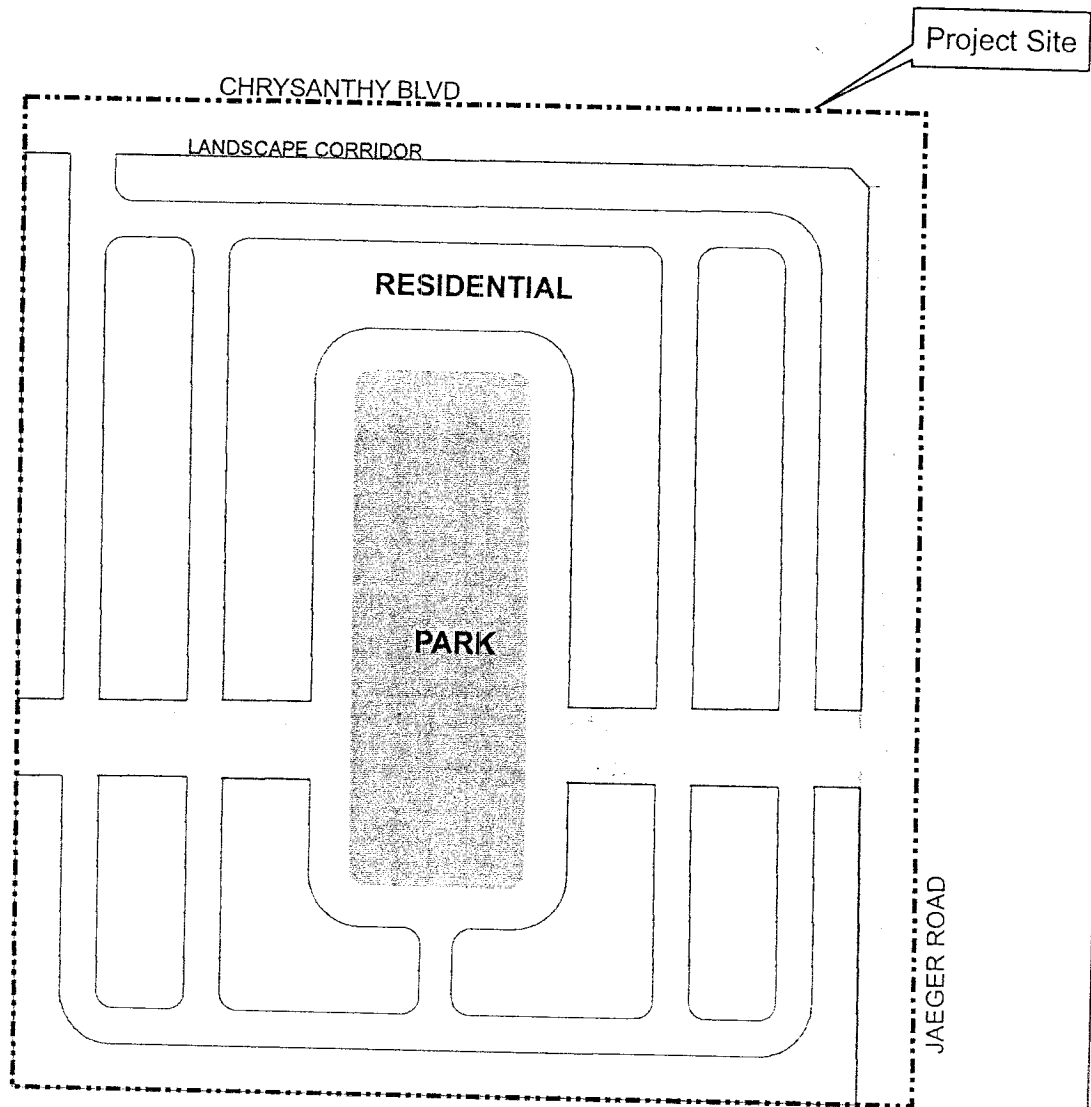
## Wetland Buffers



Anatolia IV

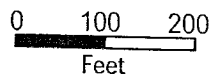
**FIGURE 3**

Date: 07/21/05  
Tech: ARMB

Source: Digital base data provided by Wood Rodgers.



ACREAGE CLASSIFICATION		
	Residential Development	19.20
	Park	2.57
	Landscape Corridors	1.26
	Major Roads	2.11
TOTAL ACREAGE		25.14



**Proposed Land Use**  
*Anatolia IV*

**FIGURE 4**

Date: 0721/05  
Tech: ARMB

Source: Digital base data provided by Wood Rodgers.

**DEPARTMENT OF THE ARMY PERMIT EVALUATION  
AND DECISION DOCUMENT**

Applicant: Cresleigh Homes Corporation

Application No: 200100230

This document constitutes my Environmental Assessment, Statement of Findings, and review and compliance determination according to the Section 404(b)(1) guidelines for the proposed work (applicant's preferred alternative) described in the public notice (Appendix A) as Sunridge Village J (Application No. 200100230) (hereafter referred to as "Sunridge Village J" or "Project"), and as revised subsequent to the Public Notice as described below.

Additionally, the Corps incorporates by reference the following documents: 1) Section 401 Water Quality Certification Permit, issued by the California Regional Water Quality Control Board on December 28, 2004 (Appendix B); 2) Biological Opinion (BO) issued by the U.S. Fish and Wildlife Service (USFWS) (1-1-02-F-0357, dated December 22, 2004) and Amendment (1-1-06-F-0232, dated August 30, 2006) (Appendix C); 3) SunRidge Park and SunRidge Jot J, Addendum to the Mitigated Negative Declaration (Appendix D); 4) November 2004 Regional Alternatives Information SunRidge Specific Plan Subarea, Sacramento County, California (Appendix E); 5) January 17, 2005 Clean Water Act 404(b)(1) Alternatives Analysis and On-site Minimization Measures, Sunridge Village J Property, Sacramento County, California (Appendix F); 6) January 13, 2006 Addendum to the Alternatives Analysis, Sunridge Village J Property, Sacramento County, California (Appendix G); 7) A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area (Appendix H).

I. Proposed Project: The proposed project is located within the SunRidge Specific Plan Area, which is within the larger Sunrise Douglas Community Plan Area, in Section 17, Township 8 North, Range 7 East, M.D.B.&M., in Sacramento County, California and can be seen on the U.S.G.S. "Buffalo Creek" 7.5' quadrangle. The maps of the site and the description of the proposed work are in the attached Public Notice, and further described below.

The Project would consist of filling 2.99 acres of waters of the U.S., including wetlands, to construct 369 single-family homes (68.23 acres), three (3) neighborhood parks (8.63 acres), and road construction/improvements (4.30 acres) on a 81.25-acre parcel. The Project lies within the County's approved 6,042-acre Sunrise Douglas Community Plan (Community Plan) area and approved 2,632-acre SunRidge Specific Plan (Specific Plan) area.

The site is comprised of level to gently rolling terrain, consisting mainly of non-native grasslands. Vernal pools, swales, and a pond lie within the grasslands. The majority of the site has been used historically as a rural residential with horse boarding facilities (watering areas, barns, and stables).

## Prior Environmental Review in the Sunrise Douglas Area

The Sunrise Douglas area in southeast Sacramento County is generally comprised of the area bounded by Douglas Road to the north, Sunrise Boulevard to the west, Grant Line Road to the east and the Jackson Highway to the south. This area has been the subject of extensive land use planning and attendant environmental review processes under the California Environmental Quality Act ("CEQA") and, to a lesser degree, the National Environmental Policy Act ("NEPA").

Beginning in 1987, the Sammis Company ("Sammis") initiated a development project in the Sunrise Douglas area that became known as the Sunrise Douglas Project (herein referred to as the "SD Project"). The SD Project was originally planned as an industrial project covering approximately 1,225.5 acres of land owned/controlled by Sammis, bounded on the west by Sunrise Boulevard, and on the north and south by Douglas Road and Keifer Boulevard, respectively. Sammis applied for County approvals for the industrial development, but changed its proposal to a predominantly residential project about two years later (in 1989), after the announcement of the potential closure of adjacent Mather Field. The residential project required a General Plan amendment, zoning change, and permit from the Corps for fill of jurisdictional areas within the SD Project area. Sammis' request for General Plan amendment was the last of its kind in the Sunrise Douglas area because the County subsequently imposed a moratorium on general plan amendments pending its 1993 revision of the County General Plan.

The Corps and the County identified potentially significant environmental impacts associated with the SD Project, and as Lead Agencies, prepared a joint Environmental Impact Statement/Environmental Impact Report for the project under NEPA and CEQA, respectively (the "SD Project EIS/EIR").

### A. The SD Project EIS/EIR

The Final SD Project EIS/EIR, published in January, 1992, evaluated the impacts of a primarily residential project on approximately 1,225 acres. According to the EIS/EIR, the information therein was intended for use by all agencies concerned with major developments in the County. The EIS/EIR determined the project area contained 82.14 acres of jurisdictional waters, including 68.06 acres of vernal pools. The development as proposed would impact approximately 38.15 acres, including 26.97 acres of vernal pools. The Corps considered this a substantial impact without appropriate mitigation. The SD Project EIS/EIR proposed a combination of avoidance and on-site creation of wetlands and vernal pools within a 482-acre reserve in the SD Project area, and an off-site preservation and creation component. All told, the SD Project EIS/EIR required a minimum of 27.01 acres of vernal pool creation (3.8 acres on-site and 23.2 acres off-site) and 14.08 acres of wetland creation on- and off-site. The SD Project EIS/EIR concluded that these on-site and off-site measures, together with provisions of the Wetlands Compensation Plan authorized for the wetland/vernal pool reserve, would at least maintain wetland and vernal pool functions and values in the area, thus sufficiently mitigate impacts to wetlands and vernal pools on site.



The SD Project EIS/EIR considered all other potentially substantial impacts from the development of the project and proposed mitigation measures to reduce all but a few impacts to below substantial levels. As the SD Project EIS/EIR noted, for this particular project, the Corps limited its jurisdiction to waters of the United States, and analysis of direct, indirect and cumulative impacts and required mitigation associated with the Corps' action, the section 404 permit. (Final SD Project EIS/EIR, p. B-16). For other potentially substantial impacts, the County as CEQA lead agency analyzed and enacted sufficient mitigation measures to reduce potential impacts to below levels of significance in all but eight categories. The SD Project has been substantially constructed.

#### B. Sunrise Douglas Community Plan Sunridge Specific Plan EIR

In 1993, at about the same time as the certification of the SD Project EIS/EIR, the County initiated a Specific Plan process for the greater Sunrise Douglas area, encompassing over 5,000 acres of land, including the SD Project. The County then modified its approach and adopted a more conceptual Community Plan for the greater Sunrise Douglas area, encompassing approximately 6,042 acres, while reducing the area covered by the detailed Specific Plan to include approximately 2,632 acres, including the SD Project already covered by the SD Project EIS/EIR. The County prepared the Sunrise Douglas Community Plan/SunRidge Specific Plan EIR (herein, "Community Plan/Specific Plan EIR"). For the Community Plan area, the Community Plan/Specific Plan EIR analyzed an overall conceptual framework and policy direction for urbanization of the area covered by the Community Plan. Conceptual land uses were assumed for the Community Plan area outside of the Specific Plan area in order to evaluate the cumulative impacts of future urban development of this area. For the Specific Plan area, the EIR analyzed detailed land use and public facilities plans and corresponding zoning for near-term urban development within the Specific Plan area. The Community Plan/Specific Plan EIR also considered the findings and mitigation measures of the SD Project 404 permit because the SD Project is within the boundaries of the Specific Plan area. Thus, after the certification of the Community Plan/Specific Plan EIR in 2002, development proposed for 1,255 of the 2,632 total acres of the Specific Plan had been covered by the Corps' EIS/EIR and the entirety had been covered by a subsequently prepared EIR.

The City of Rancho Cordova is reviewing their application for a Mitigated Negative Declaration (MND) (Appendix D) for the Project. The City relied on the Sunrise Douglas Community Plan/SunRidge Specific Plan Final Environmental Impact Report, which was certified by the Sacramento Board of Supervisors on June 19, 2002.

#### C. Conceptual-Level Strategy for Avoiding, Minimizing and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area (Appendix H)

In May 2002, prior to its certification of the Community Plan/Specific Plan EIS/EIR, the County initiated meetings regarding potential wetlands and endangered species permitting strategies for the entire Community Plan area. The U.S. Fish and Wildlife Service, the Corps and U.S. Environmental Protection Agency (the "Federal Agencies" or "Agencies"),

the California Department of Fish and Game, and a majority of landowners and interested developers within the Specific Plan area attended these meetings. No resolution was reached. On July 17, 2002, the County approved both the Community Plan and the SunRidge Specific Plan. The conditions of approval for the Specific Plan require individual applicants to obtain any necessary Corps permit for fill of waters of the United States. On July 1, 2003, with the incorporation of the City of Rancho Cordova ("City"), the Community Plan area came under the City's land use jurisdiction.

In early 2004, Congressman Doug Ose asked that all parties come together for further meetings among the stakeholders. The goal of these meetings was to cooperatively develop a conceptual on-site avoidance and off-site mitigation strategy that would satisfy the mandates of federal law administered by the Federal Agencies while allowing for development of the Specific Plan according to existing land use plans. As a result, the Corps, USFWS, and the U.S. Environmental Protection Agency (USEPA) developed a strategy that in concept would result in a workable framework for the planned development in the Community Plan and be consistent with the requirements under the Clean Water Act, the Endangered Species Act and other applicable laws.

The Conceptual-Level Strategy for Avoiding, Minimizing and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area dated June 12, 2004 (herein, "Conceptual Strategy," incorporated by this reference) sets out 10 principles and standards to assist property owners in identifying alternatives that minimize individual and cumulative effects on aquatic resources and sensitive species. Together with the 10 standards and principles, the Agencies released a Conceptual Strategy map for the Community Plan area. This map and the existing preserve established within the SD Project area, creates a concept for managing aquatic resource habitat within the Community Plan/Specific Plan area. The Conceptual Strategy preserve area would be protected and managed in perpetuity according to an Agencies-approved preserve management plan. The map, together with the 10 principles and standards and an agency approved preserve management plan, is a mitigation strategy designed to ensure that the functions of preserved aquatic resource habitat will be maintained. These measures were designed to protect the conditions of aquatic resource habitat within the Specific Plan, and to minimize both the project-by-project and cumulative effects associated with the development of the Specific Plan.

As part of the Conceptual Strategy process, the Corps addressed its approach to NEPA compliance within the Community Plan area. For the unpermitted area of the SunRidge Specific Plan (the Sunridge Specific Plan area excluding the SD Project), the permit applicants prepared an analysis of potential cumulative impacts and an evaluation of the practicability of different preserve designs. This information applied to seven individual applications for permits that were pending before the Corps, including four projects noticed together in the same Public Notice as the Project. (see Public Notice No. 200000336).

The City of Rancho Cordova and the Corps are in the process of preparing an EIS/EIR for the SunCreek Specific Plan portion of the Community Plan.

Based on implementation of the Conceptual Strategy and Regional Alternatives Information (discussed below), the USEPA by letter dated April 26, 2004, and the USFWS by their BO for the Project dated December 22, 2004, confirmed their decision not to elevate the Corps' 404 permit decisions on SunRidge Village J and other applications pending in the SunRidge Specific Planning Area, pursuant to the 404(q) Memorandum of Agreement between the Federal Agencies. The Corps confirmed its concurrence of the Conceptual Strategy by letter dated October 29, 2004, to Mr. John Hodgson in response to his summary of the negotiations.

The Regional Alternatives Information SunRidge Specific Plan Subarea, Sacramento County, California (Appendix E), dated November 2004 (referred to herein as the "Alternatives Information Document") addresses regional and sub-regional cumulative impacts that may occur from the plan developed by the Agencies. The Alternatives Information Document analyzes the Conceptual Strategy map and eight other alternative reserve configurations according to criteria for minimizing jurisdictional impacts and providing connected reserve area(s), in light of cost, logistics and existing technology. The Corps incorporates the Alternatives Information Document into, and makes it a part of, this Environmental Assessment by reference.

A. Changes to the proposed project since circulation of the public notice: No changes to the wetland impact areas were proposed. However, the road alignment and lot sizes were changed.

B. Specific activity that requires a Department of the Army permit: The applicant has proposed to place fill material in waters of the U.S., including wetlands, which would result in the loss of 2.99 acres of waters of the U.S., including wetlands.

## II. Environmental and Public Interest Factors Considered:

A. Purpose and need: The overall project purpose is to construct a residential development in the southeast Sacramento area. Construction resultant from the fill would address the existing housing demand within Sacramento County.

B. Alternatives [33 CFR 320.4(b)(4), 40 CFR 230.10]

The applicant submitted an alternatives analysis for the SunRidge Community Plan (Appendix E), alternatives analysis and on-site minimization measures analysis (Appendix F), dated January 18, 2005, and addendum to the alternatives analysis (Appendix G), dated January 30, 2006, for the Project prepared pursuant to the 404(b)(1) guidelines, incorporated by reference.

In summary, the analysis first reviewed the potential alternative project locations within the Specific Plan area. All alternative locations within the Specific Plan area that met the acreage requirement of the applicant also contained at least as much, but typically greater, acreage of jurisdictional wetlands than Sunridge Village J. In addition, as part of its analysis of potential alternate locations for the project, the analysis reviewed the conclusions of the

Alternatives Information Document as applicable to the proposed project. The Alternatives Information Document concluded there were no practicable alternative locations for construction of the remaining Specific Plan Area projects; including Sunridge Village J, that would meet the project purpose of constructing residential subdivisions within the southeast Sacramento area with any less damaging result for aquatic ecosystems.

The applicant provided alternatives information for on-site design alternatives, including the proposed Project. The alternatives information discussed the multi-agency Conceptual Strategy as it applies to the project. The applicant discussed the project within the framework of the ten principles and standards discussed in the Conceptual Strategy, and analyzed its level of compliance with the principles and the associated preserve map created for the entire Specific Plan area.

1. No action: No permit would be issued. The no permit alternative is the same as the no fill alternative discussed in the applicant's alternatives analysis. To avoid direct and indirect impacts to wetlands, the no permit alternative would require avoidance of all waters of the U.S., including a 250-foot buffer. This would require avoidance of 53.46 acres of land area, with 27.79 acres remaining for development. The remaining developable acreage would be further constrained by the size and sprawling pattern of the wetlands, including vernal pools, across the site. This alternative would not leave sufficient contiguous land to feasibly construct a residential development. In considering alternatives that would avoid all jurisdictional waters, the applicant considered the use of bridges and con-span-type structures to avoid fill of waters, yet issues of maintaining safe and efficient circulation patterns still remain, making this alternative logistically infeasible and therefore not a practicable alternative.

2. Other project designs (smaller, larger, different, etc.): The applicant provided information on two different avoidance alternatives, a partial avoidance alternative and no-fill alternative. The applicant determined that any on-site preserve configuration would result in an isolated preserve, which would result in indirect adverse effects to the wetland features in the preserve. Additionally, the applicant indicated that any on-site preserve consistent with the principles and standards of the Conceptual Strategy would reduce the acreage available for development to a point that would preclude construction of a development consistent with the project purpose.

The applicant also participated in extensive discussions with the Federal Agencies in developing the Conceptual Strategy and accompanying Map for projects within the Specific Plan area. The Conceptual Strategy and Map identify: (1) wetlands and vernal pool avoidance areas within the Specific Plan, and (2) ten principles and strategies necessary to create an aquatic resource habitat avoidance and preserve area within the Specific Plan area that ensures overall project consistency with the requirements of the Endangered Species Act and Clean Water Act. The applicant has demonstrated that, as proposed, Sunridge Village J complies with the Conceptual Strategy and Map.

3. Other sites: The applicant was unable to identify any sites within the Specific Plan area which were available and of sufficient size.

4. Other sites not available to the applicant (40 CFR 230.10): The 404(b)(1) Alternatives Analysis for Sunridge Village J considered 15 potential alternative sites within the Specific Plan area. As discussed in the Regional Alternatives Document, these sites did not meet the availability criterion because they were currently under development by other owners, and/or did not meet the environmental criterion because they were not less environmentally damaging as they were likely to have equal or greater impacts to aquatic ecosystems on their sites.

5. Corps selected alternative: The Corps' selected alternative is the applicant's preferred alternative with the inclusion of special conditions (see below).

C. Physical/chemical characteristics and anticipated changes (check applicable blocks and provide concise description of impacts for the proposed project, other evaluated alternatives, and the no action).

(X) Substrate: The substrate primarily consists of Red Bluff loam (2-5% slopes) and Redding gravelly loam (0-8% slopes). These are well to moderately well drained soils found on high terraces and terrace remnants. Both of these soils contain a single unnamed hydric inclusion found in depressional areas. The project would affect all soils on the 81.25-acre site, including all 2.99 acres of waters of the U.S. (vernal pools and seasonal drainage) on-site and indirectly affect 0.39 acres of waters to the south of the project site. This fill does not constitute a substantial impact because it will be mitigated through the creation of 2.99 acres of waters of the U.S. and the preservation of 9.18 acres. The impact on substrate overall is adverse but considered minor.

(X) Currents, circulation or drainage patterns: Site drainage flows into the riverine seasonal wetland and flows off the western portion of the project site. Filled areas will be developed as part of the Corps Selected Alternative and drainage from these areas will be re-routed to the extent necessary to comply with post-construction stormwater plans for the Project site. Runoff from the Corps Selected Alternative will be re-routed to a storm water detention basin to be located within the Project and conveyed off-site via a storm drain. The applicant is expected to comply with all post-construction storm water treatment requirements as set out in the City of Rancho Cordova's MS-4 permit and implement necessary water quality Best Management Practices to avoid the potential for substantial adverse nuisance flows from the Project to enter into waters of the United States. As a result, off-site impacts will be avoided.

(X) Suspended particulates; turbidity: Wetlands on-site likely have slightly turbid water during the rainy season. There is potential for increased turbidity during and after project construction. This potential will be minimized through compliance with the City of Rancho Cordova's MS-4 permit. Water quality BMPs required under the City's MS-4 permit will avoid substantial adverse impacts resultant from the entrance of suspended particulates and turbid runoff into waters of the United States. Only minimal impacts are expected provided the applicant complies with State Water Quality Certification (Appendix

B).

(X) Water quality (temperature, salinity patterns and other parameters): Filled areas developed as part of the Project have the potential to contribute urban pollutants to runoff from the site into waters of the United States. These pollutants could include hydrocarbons, nitrates and ammonia, and heavy metals. As with turbidity, the Project is required to implement construction and operational BMPs that will avoid substantial adverse effects from polluted urban runoff into waters of the United States. Minimal impacts are expected provided the applicant complies with State Water Quality Certification (Appendix B).

( ) Flood control functions: None.

( ) Storm, wave and erosion buffers: None.

( ) Erosion and accretion patterns: None.

(X) Aquifer recharge: Limited groundwater recharge in the project area occurs on the Project site. Soils and underlying hardpan on the Project site result in little infiltration from the remaining, undeveloped portions of the Project area. Aquifer recharge from the Project site is minimal because of these site conditions. Runoff from new impervious surfaces created as a result of the permitted fill would be collected and diverted through on-site drainage controls and ultimately released downstream. Some infiltration from these features would occur. Recharge would probably still occur, but at different locations and at different rates than under existing conditions, however no substantial adverse effects would likely occur.

( ) Baseflow: None.

Additionally, for projects involving the discharge of dredged material:

( ) Mixing zone, in light of the depth of water at the disposal site; current velocity, direction and variability at the disposal site; degree of turbulence; water column stratification discharge vessel speed and direction; rate of discharges per unit of time; and any other relevant factors affecting rates and patterns of mixing: No effect.

D. Biological characteristics and anticipated changes (check applicable blocks and provide concise description of impacts for the proposed project, other evaluated practicable alternatives, and the no action):

(X) Special aquatic sites (wetlands, mudflats, coral reefs, pool and riffle areas, vegetated shallows, sanctuaries and refuges, as defined in 40 CFR 230.40-45): The project site currently contains 0.22 acres of riverine seasonal wetland, 1.88 acres of vernal pools, and a 0.89-acre pond. The project, as proposed, will impact all 2.99 acres of wetland and also indirectly impact 0.36 acre of wetlands off-site.

Compensatory mitigation for direct and indirect impacts will consist of restoration/creation of 3.38 acres of vernal pools. Areas restored or created will retain similar functions as wetland areas impacted on the Project site, assuring no net loss of wetland acreage and functions as a result of the permitted fill.

The proposed preservation component will consist of preserving a minimum 9.18 acres of functioning wetland habitat. As discussed above, the functions associated with wetlands, including vernal pools on this site are similar or greater than those permitted for fill under this decision document.

(X) Habitat for fish and other aquatic organisms: Wetland and vernal pool habitat for the Federally listed vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardii*) will be affected by the permitted fill. The applicant has proposed mitigation measures designed to mitigate impacts to aquatic habitat from the proposed fill. Mitigation includes off-site preservation of high quality wetland and vernal pool habitat, in addition to creation of vernal pool and wetland habitat. Mitigation ratios are 1:1 for off-site creation (both indirect and direct impacts) and 4:1 for off-site preservation. Finally, the preservation and creation sites in which mitigation acreage are to be established will be maintained and preserved in perpetuity as habitat resources. The funding and management of these areas provides environmental benefits in the form of habitat restoration, creation, and preservation. These measures will mitigate the effects of the proposed fill on aquatic habitat to below substantial levels.

(X) Wildlife habitat (breeding, cover, food, travel, general): The site provides forage, cover, and nesting habitat for insects, songbirds, amphibians, reptiles, meso-mammals, and small mammals (including some foraging habitat for bats). The site also provides habitat for foraging raptors. Construction of the proposed project will permanently reduce most wildlife habitat at this location. The parks and open spaces (proposed in the project) may provide some habitat to wildlife, however most likely a mono-culture non-native grasses will be planted. Some trees may be planted which would provide perching structures and a food source for wildlife. The 80-acre site probably provides adequate habitat for smaller animals such as frogs and microtine rodents, however the site may be too small to meet the size requirements for populations of larger animals, such as coyotes (*Canis latrans*) and black-tailed jackrabbits (*Lepus californicus*).

The site is bordered by two roads (Jaeger Road to the west and Douglas Road to the north). These roads already inhibit dispersal and travel for larger animals, and cause increased mortality to both small and larger animals. A development (Sunridge Park) has been proposed east of the project area, and a preserve (Sunridge) will be established to the south of the project area. Thus, the site will be isolated and inhibit the usage as a wildlife travel corridor. Any preserves located within the project area would only provide limited habitat to meet most wildlife's biological requirements. Temporal impacts to these habitat types will be offset by off-site preservation of existing habitat and off-site restoration/creation of similar wetland and upland habitat. Only small temporal impacts are anticipated.

(X) Endangered or threatened species: As discussed previously, the vernal pools subject to fill are assumed by the applicant to contain the threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and the endangered vernal pool tadpole shrimp (*Lepidurus packardii*). The Service issued a no-jeopardy BO (1-1-02-F-0357, dated December 22, 2004) and Amendment (1-1-06-F-0232, dated August 30, 2006) on the proposed fill activities for the Sunridge Village J project. The Service concluded that the fill activities of the Corps' Selected Alternative will not jeopardize the continued existence of the listed vernal pool crustaceans because mitigation proposed as part of the Project, plus compliance with the agencies' Conceptual Strategy and Map will offset impacts to the listed species and their habitats. The Biological Opinion requires that mitigation measures proposed by the applicant be implemented through the 404 permit, and the implementation of those mitigation measures is included as a condition of the permit issued. Based on the conclusions of the no-jeopardy opinion, and the likelihood of success of planned mitigation, the permitted fill will not have substantial effects on endangered or threatened species, as mitigated.

(X) Biological availability of possible contaminants in dredged or fill material, considering hydrography in relation to known or anticipated sources of contaminants; results of previous testing of material from the vicinity of the project; known significant sources of persistent pesticides from land runoff or percolation; spill records for petroleum products or designated (Section 311 of the CWA) hazardous substances; other public records of significant introduction of contaminants from industries, municipalities, or other sources: According to the City of Rancho Cordova's MND, the project site has no known past hazardous materials involvement. Additionally, although there is documented groundwater contamination in the plan area, the project does not include the use of on-site wells. Therefore, the potential for the project to result in exposure to the groundwater contamination is unlikely.

E. Human use characteristics and impacts (check applicable blocks and provide concise description of impacts for the proposed project, other evaluated practicable alternatives, and the no action):

(X) Existing and potential water supplies; water conservation: Water present in the areas of proposed fill consists of annual precipitation, and does not represent a potential water supply. The proposed fill would not have an effect on existing or potential water supplies, nor would it cause an effect with regard to water conservation.

( ) Recreational or commercial fisheries: No effect.

( ) Other water related recreation: No effect.

(X) Aesthetics of the aquatic ecosystem: The project will have a permanent



negative effect on the aesthetics of the project. The site will be converted from an annual grassland with seasonal wetland features to a residential housing complex. The project has proposed three (3) small park sites. However, this will only provide minimal open space that will mitigate for the loss of most of the site's naturalness.

(X) Parks, national and historic monuments, national seashores, wild and scenic rivers, wilderness areas, research sites, etc.: Three (3) parks have been proposed for the site. This should provide limited recreation opportunities for local residences. Current recreational opportunities for the public are unknown.

(X) Traffic/transportation patterns: Current traffic and transportation patterns in the area of the proposed project exhibit growth underway in Sacramento County. Small collector roads connect to large arterial roadways. Potential traffic impacts were addressed in the Traffic Circulation Section of the Sunrise Douglas Community Plan and Sunridge Specific Plan (SDCP/SRSP) Master Environmental Impact Review (EIR). The SRSP would increase A.M. and P.M peak hours and daily vehicle trips compared to existing traffic conditions. The SDCP/SRSP EIR identified traffic and circulation mitigation measures for development projects to adopt. The traffic impacts resulting from the Corp's action may be adverse but are considered minor overall when incorporating mitigation measures.

(X) Energy consumption or generation: The proposed development would require energy for grading and fill, and would require additional energy for construction, operation and maintenance of improvements. There is adequate capacity available to serve these future energy needs, and the impacts are not substantial.

( ) Navigation: No effect.

(X) Safety: The project will implement safety measures such that there is relatively low potential for substantial effect to safety (temporarily and permanently).

(X) Air quality: The proposed permit has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit will not exceed de minimis levels of direct emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit action.

(X) Noise: The proposed construction is not expected to generate noise impacts in any substantial amount. In this case, land uses proposed on all portions of the applicant's project are expected to meet the County Noise Level Performance Standards (NLPSs) and

County Land Use Compatibility standards set by the County's General Plan Noise Element (Community Plan/Specific Plan EIR, pp. 12.9c). These indicators are a common threshold used for assessment of significant noise impacts, and indicate the permitted fill will not result in substantial noise impacts.

(X) Historic properties (Section 106 National Historic Preservation Act): During the pedestrian survey, one (1) historic resource was located. This office initiated consultation with the State Historic Preservation Officer. On April 7, 2006, we received concurrence that the project is not eligible for listing and that the proposed project would not impact a historic or pre-historic site.

(X) Land use classification: The proposed fill activity will occur in conjunction with construction of residential development on lands previously used for agricultural activities. These lands are located within the General Plan Urban Policy Area and are shown as a new Urban Growth Area in the Sacramento County General Plan, indicating the County's intent to plan for the urbanization of this area within the 20-year time frame of the General Plan.

(X) Economics: Construction associated with the project will provide temporary jobs and may generate revenue for the local economy. In the long term, the project will help to address growing housing demand in the Sacramento County area. Housing shortage in the area has the potential to negatively affect continued economic growth in the southeast County area, and the greater Sacramento County area as a whole.

(X) Prime and unique farmland (7 CFR Part 658): The California Department of Conservation's Farmland Mapping and Monitoring Program designated the project site as grazing land and farmland of local importance, not as prime or unique farmland. According to the City of Rancho Cordova's MND, neither the grazing or farmland of local importance designation qualifies the project site as prime and unique farmland.

( ) Food and fiber production: No effect.

(X) General water quality: The existing quality of water in wetlands and other waters of the United States on the Project site results from local precipitation, drainage from adjacent areas and residues of agricultural applications on site. Fill of wetlands and construction of the applicant's proposed project has the potential to add urban pollutant runoff.

Pursuant to Section 401 of the Clean Water Act, the applicant has obtained certification from the Central Valley Regional Water Quality Control District, issued December 28, 2004 (File No. 5A34CR00185). The 401 Certification concluded that the proposed project has

proposed sufficient measures to adequately protect the identified beneficial uses of surrounding and downstream water courses. The applicant will comply with all post-construction storm water treatment requirements as set out in the City of Rancho Cordova's MS-4 permit and implement necessary water quality Best Management Practices to prevent substantial impacts to the water quality of surrounding and downstream areas.

(X) Mineral needs: Current activities at the project site do not require mineral needs. Construction of the project will necessitate the importation of aggregate, concrete, and asphalt. These materials will likely be supplied locally. No negative impacts are expected.

(X) Consideration of private property: The project area is currently private property owned by the applicants. The project is being permitted as proposed and the applicant's use of private property has been given appropriate consideration.

(X) Environmental justice (Title VI of the Civil Rights Act and Executive Order 12898): The proposed action is not expected to negatively impact any community, and therefore is not expected to cause disproportionately high and adverse impacts to minority or low-income communities.

( ) Other:

F. Summary of secondary, indirect, and cumulative effects: Indirect impact from the fill of on-site wetlands over the southern boundary of the project site would include off-site impacts to an additional 0.03 acres of seasonal wetland and 0.36 acres of vernal pool (total of 0.39 acres of jurisdictional waters of the United States), as estimated by the USFWS's BO. The USFWS took these 0.39 acres into account in the issuance of its no-jeopardy BO for the permitted fill, and concluded that the applicant's proposed mitigation measures sufficiently offset direct and indirect impacts to wetland and vernal pool habitat. The USFWS estimates that any jurisdictional wetland or vernal pool habitat within 250 feet of project development will be indirectly impacted due to increased human presence, changes to hydrology or other created conditions. Habitat to the west and north is divided from the project site by major roadways and therefore indirect impacts are not anticipated. Because land to the east is within the approved Sunrise Douglas Community Plan/SunRidge Specific Plan area, habitat in these areas would be directly removed and offset by the adjacent proposed development.

Cumulative effects are the incremental effects of the agency's proposed action, and past, present and reasonably foreseeable future actions in the locale of the agency's action. For analysis of cumulative impacts, the Corps has focused on the larger 1,345 acre subarea of the SunRidge Specific Plan area because a number of actions are currently pending in this area

that could have potentially substantial cumulative effects. The City of Rancho Cordova has completed the land use entitlement process for each of these projects within this area, and the proposed actions are well-defined and the potential impacts are foreseeable. Moreover, each of the 404 permit applications pending in the SunRidge subarea are for geographically contiguous jurisdictional features and the permitted actions are planned to occur roughly during the same time frame. Because of the certainty of the land use entitlements, and the related geography and timing of the effects, they have the potential to be cumulative.

The Conceptual Strategy, and the detailed analysis in the Regional Alternatives Information address potential cumulative effects to both aquatic and non-aquatic resources in the subarea. The collaborative effort of the Federal Agencies and the numerous applicants participating in the Conceptual Strategy resulted in a plan to preserve wetlands and vernal pools in the area that collectively reduced direct loss of jurisdictional waters from almost 60 acres under the adopted Specific Plan, to just over 44 acres, while preserving 41.2% of vernal pool habitat within the Specific Plan. Each project has agreed to demonstrate consistency with the Conceptual Strategy and to incorporate mitigation that will ensure no net loss of wetlands. It is estimated that over 50% of the waters within the Community Planning Area will be protected under the conceptual preserve design. This is a substantial reduction of impacts to waters of the US as compared to the proposed level of development from the County of Sacramento. Thus, the Conceptual Strategy strives to avoid adverse cumulative effects by (1) increasing avoidance and preservation of wetlands and vernal pools within the subarea from what was initially proposed under the Specific Plan, (2) strategically identifying avoidance areas in a manner that minimizes edge effects and maximizes connectivity (3) coalescing these individual projects' avoidance and minimization efforts into a regional reserve designed to connect to the previously approved and existing Anatolia Preserve, thereby increasing connectivity between project avoidance areas and connectivity to downstream wetlands and vernal pools, and (4) creating large, intact corridors supporting the Morrison and Laguna Creek watersheds and associated vernal pools in the Specific Plan area. The Conceptual Strategy also sets out principles and standards for development surrounding the avoided wetlands and vernal pools that will reduce urban edge effects on these areas and to promote long-term retention of wetland and vernal pool functions. Last, the Conceptual Strategy areas are required to be monitored and managed in perpetuity according to preserve management plan to be submitted for the Federal Agencies' approval. The measures specified in the Conceptual Strategy for the creation of a reserve according to the map will minimize cumulative impacts to jurisdictional wetlands and vernal pools within the Specific Plan area.

Future projects in the Sun Creek portion of the Community Plan area are as yet too uncertain to include within a cumulative impacts assessment at this time. The Corps has received applications for development in this area. Currently, the Corps and the City are preparing a joint EIS/EIR for development in this area, which will further consider potential cumulative

effects. The Community Plan/Specific Plan EIR does not provide more than conceptual information on jurisdictional impacts within the SunCreek area. The current EIS/EIR process will modify and refine land uses in this area, including the creation of a jurisdictional wetland and vernal pool preserve within the SunCreek area. Although impacts to wetlands are likely, because the EIS/EIR process is at an early stage it is not reasonably foreseeable to predict the impacts that could result from that future project. Subsequent applications for fill for projects within the Community Plan area will also be appropriately evaluated under NEPA and the conceptual strategy.

Together, past measures taken to reduce impacts at the Sunridge Village J project (SD Project) combined with measures specified in the Conceptual Strategy for the SunRidge Specific Plan area, assure that adverse effects to jurisdictional wetland and vernal pool areas are not cumulatively substantial.

In addition to potential cumulative impacts to jurisdictional wetlands and vernal pools, the development of the Project, in conjunction with development of other projects noticed in Public Notice# 200000336 and others within the Specific Plan area, may have cumulative impacts to other categories of the human environment. The County's Community Plan/Specific Plan EIR discusses potentially substantial cumulative effects from development in the Specific Plan area. The County identified mitigation measures through the Specific Plan EIR, and incorporated land use planning policies within the Specific Plan that are designed to address cumulative impacts in these other categories such as traffic, noise, air quality and groundwater resources. The mitigation measures in the City of Rancho Cordova's MND for the Sunridge Village J Project, in addition to measures implemented by the County's adoption of the SD Project EIS/EIR Mitigation and Monitoring Program, and future mitigation measures created for the SunCreek Specific Plan area, will assure adequate treatment of these categories of cumulative impacts.

The growth inducing effects of the permitted fill are expected to be minimal, because this area has already been designated as an urban growth area by the County's 1993 General Plan.

G. Summary of proposed mitigation measures: The applicant has reduced impacts to the aquatic environment by following the "Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area".

The applicant has proposed to create 3.38 acres of vernal pools at a Corps-approved off-site location and preserve 9.18 acres of vernal pools at a Corps-approved location.

H. Special Conditions added to the permit:

1. The Project shall comply with the provisions of the Conceptual-Level Strategy for Avoiding, Minimizing and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area dated June, 2004.
2. This Corps permit does not authorize you to take any threatened or endangered species, in particular the vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardii*), or designated critical habitat. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (e.g., and Endangered Species Act Section 10 permit, or a Biological Opinion under Endangered Species Act Section 7, with incidental take provisions with which you must comply). The enclosed Fish and Wildlife Service Biological Opinion (Number 1-1-02-F-0357, dated December 22, 2004) and Amendment (1-1-06-F-0232, dated August 30, 2006), contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with incidental take that is also specified in the Biological Opinion. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached Biological Opinion, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the Biological Opinion, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The Fish and Wildlife Service is the appropriate authority to determine compliance with the terms and conditions of its Biological Opinion, and with the Endangered Species Act. The permittee must comply with all conditions of this Biological Opinion, including those ascribed to the Corps.
3. As compensatory mitigation for the direct loss of 2.99 acres of waters of the United States and indirect impacts to 0.39 acres (3.38 acres total), you shall construct at least 3.38 acres of vernal pool habitat at the Gill Ranch Mitigation Area (off-site mitigation area). Also, to fulfill wetland preservation requirements you shall purchase 9.18 acres of vernal pool crustacean habitat at the Bryte Ranch Conservation Bank.
4. You shall develop a final comprehensive compensatory mitigation and monitoring plan, which must be approved by the Army Corps of Engineers prior to initiation of any construction activities. The plan shall include mitigation location and design drawings, vegetation plans, including target species to be planted, and final success criteria, presented in the format of the Sacramento District's Habitat Mitigation and Monitoring Proposal Guidelines, dated December 30, 2004. The purpose of this requirement is to insure replacement of functions and values of the aquatic environment that would be lost through project implementation.
5. You shall construct the required compensatory mitigation concurrently with, or in advance of, the start of construction of the permitted activity.

6. You shall complete construction of the compensatory mitigation no later than November 15th of the year project construction is initiated.
7. To insure that the compensatory mitigation is completed as required, you shall notify the District Engineer of the date you start construction of the authorized work and the start date and completion date of the mitigation construction, in writing and no later than ten (10) calendar days after each date.
8. To provide a permanent record of the completed compensatory mitigation work, you shall provide two (2) complete sets of as-builts of the completed work within the off-site mitigation area to the Corps of Engineers. The as-builts shall indicate changes made from the original plans in indelible red ink. These as-builts shall be provided to this office no later than 60 days after the completion of construction of the mitigation area wetlands.
9. You shall establish and maintain, in perpetuity, a preserve (compensatory mitigation area) containing the 3.38 acres of created/restored aquatic habitat required by "Special Condition 4".
10. To minimize external disturbance to created/restored waters of the United States, you shall establish an adequate buffer, consisting of native upland vegetation surrounding the entire perimeter of all created/restored waters of the United States, including wetlands within the proposed off-site preserve. This buffer shall be proposed within the compensatory mitigation and monitoring plan and the preserve management plans. These buffer widths shall be explicitly approved in writing by the Corps prior to any work in waters.
11. To insure that the preserve (compensatory mitigation area) is properly managed, you shall develop a specific and detailed preserve management plan for the off-site compensatory mitigation area. This plan shall be submitted to and specifically approved, in writing, by the Corps of Engineers prior to engaging in any work authorized by this permit. This plan shall describe in detail any activities that are proposed within the preserve area and the long term funding and maintenance of each of the preserve area.
12. To protect the integrity of the compensatory mitigation area and avoid unanticipated future impacts, no roads, utility lines, trails, benches, equipment or fuel storage, grading, firebreaks, mowing, grazing, planting, disking, pesticide use, burning, or other structures or activities shall be constructed or occur within the off-site mitigation, preservation, and avoidance areas without specific, advance written approval from the Corps of Engineers.
13. To prevent unauthorized access and disturbance, you shall, within one (1) year of starting the compensatory mitigation construction, install fencing and appropriate signage around the entire perimeter of the compensatory mitigation area and the approved buffer.

All fencing shall allow unrestricted visibility of these areas to discourage vandalism or disposing of trash or other debris in these areas. Examples of this type of fencing include chain link and wrought iron.

14. Prior to initiating any activity authorized by this permit, you shall, to insure long-term viability of the compensatory mitigation area:

a. Establish a fully-funded endowment to provide for maintenance and monitoring of the off-site compensatory mitigation area.

b. Designate a Corps approved conservation-oriented third part entity to function as preserve manager and to hold the required conservation easements.

c. Record permanent conservation easements and deed restrictions maintaining all mitigation areas as wetland preserve and wildlife habitat in perpetuity. Copies of the proposed deed restriction and conservation easement language shall be approved by the Corps of Engineers prior to recordation.

d. Provide copies of the recorded documents to the Corps of Engineers no later than 30 days prior to the start of construction of any of the activities authorized by this permit.

15. To assure success of the created waters of the United States, you shall monitor the compensatory mitigation area for five (5) years or until the success criteria described in the approved mitigation plan are met, whichever is greater. This period shall commence upon completion of the construction of the mitigation wetlands. Additionally, continued success of the mitigation wetlands, without human intervention, must be demonstrated for three (3) consecutive years, once the success criteria have been met. The mitigation plan will not be deemed successful until this criterion has been met.

16. You shall submit compensatory mitigation area monitoring reports to this office for each year of the five-year monitoring period, and for each additional year, if remediation is required, by October 1st of each year. You shall submit an additional monitoring report at the end of the three-year period demonstrating continued success of the mitigation program without human intervention.

17. You must allow representatives from the Corps of Engineers to inspect the authorized activity and any mitigation areas at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

18. All terms and conditions of the December 28, 2004 Section 401 Water Quality



Certification are expressly incorporated as conditions of this permit.

### III. Findings:

#### A. Other authorizations or compliance determinations:

1. Water quality certification: The applicant obtained water quality certifications from the Central Valley Regional Water Quality Control Board on December 28, 2004, File No. 5A34CR00185. The 401 certifications, including special conditions, are attached (Appendix B).

Date: December 28, 2004

Issued:   X  

Denied:           

Waived:           

Special Conditions Yes   X   No            (If yes see attached)

2. Compliance with Section 106 of the National Historic Preservation Act: Concurrence was received by the SHPO on April 7, 2006.

3. Compliance with the Endangered Species Act: A BO (1-1-02-F-0357, on December 22, 2004) and Amendment (1-1-06-F-0232, dated August 30, 2006) were issued.

4. State and/or local authorizations (if issued):

B. We received a complete application on November 30, 2001. We issued a public notice describing the project on February 11, 2002, and sent the notice to all interested parties (mailing list) including appropriate state and Federal agencies. All comments received on this action have been reviewed and are summarized below.

1. Summary of comments received.

a. Federal agencies:

1) U. S. Environmental Protection Agency (EPA): EPA responded by letter dated April 26, 2004. EPA believed the 5 permit applications, as discussed in the Public Notice, would collectively cause unacceptable impacts to Aquatic Resources of National Importance (ARNI). However, EPA believed that implementation of the proposed Conceptual Strategy and creation of a large aquatic resource habitat reserve

according to the Conceptual Reserve map created by the agencies would resolve Clean Water Act issues.

2) U. S. Fish and Wildlife Service (USFWS): USFWS commented by letter dated April 26, 2004. They requested preparation of an Alternatives Analysis in compliance with the 404(b)(1) guidelines. The Service did not concur with the conclusions of the Sunrise Douglas Community Plan/SunRidge Specific Plan EIR regarding the identification of an environmentally superior alternative. The USFWS commented on proposed recreated stream channels to be constructed within portions of the Specific Plan area. The USFWS believed impacts to water quality due to increased urban runoff were inadequately addressed. The USFWS recommended against in-stream storm water detention ponds. The USFWS believed proposed development within the Community Plan area would likely impact the Stone Lakes National Wildlife Refuge downstream of the Community Plan area. The USFWS commented on the potential of off-line water quality basins to impact the hydrology of streams running through the site. The USFWS commented that development within the Community Plan area would impact special status species. The USFWS commented that development within the Community Plan area would result in unacceptable impacts to ARNI. The USFWS commented that a comprehensive on-site mitigation strategy for wetlands and vernal pools in the Community Plan area was necessary. The USFWS commented that wetland mitigation and monitoring plan for the entire Community Plan area should be submitted to the federal agencies for their review. The USFWS believed that all interrelated projects receiving Nationwide Permits within the Community Plan area should instead be considered through the Individual Permit process. The USFWS recommended the adoption of the Conceptual Strategy and Conceptual Reserve map created by the agencies. The USFWS requested that the Corps initiate consultation under Section 7 of the Endangered Species Act.

3) U. S. National Marine Fisheries Service (NMFS): Not applicable.

4) Other: Not applicable.

b. State and local agencies:

California Department of Transportation ("CalTrans") commented by letter dated March 25, 2004. CalTrans requested that any runoff from the proposed development not contribute a contaminant load to storm waters entering the State Highway System (SHS) right-of-way, and that all runoff entering the SHS meet Regional Board standards for clean water. CalTrans requested that increased flows to the SHS be mitigated. CalTrans requested the incorporation of environmental Best Management Practices to mitigate adverse drainage impacts.

c. Organizations and Individuals:

The California Native Plant Society (CNPS) commented by letter dated March 30, 2004. CNPS commented that the fill proposed under the Public Notice would impact an unusually high concentration and diversity of vernal pools in Sacramento County. CNPS commented it was inappropriate for the Corps to evaluate the proposed fill permits as individual actions because they are part of a single planning area (Specific Plan). CNPS commented that a piecemeal approach would discount significant cumulative project area effects on vernal pools. CNPS commented that an Environmental Impact Statement was needed to assess the combined effect of Plan-area development and alternatives. CNPS commented that a County-wide study had shown the Community Plan area to have a high concentration and diversity of vernal pools. CNPS commented that the area hosted several listed species. CNPS requested that the permit applicants be required to include on-site preservation as part of their mitigation package for approved fill, and that it was not possible to fully mitigate for lost wetland area through preservation in distant areas of the County. CNPS requested that the Community Plan area contain a large core preserve area with inter-connected wildlife corridors. CNPS requested that vernal pool creation be avoided, especially within undisturbed vernal pool landscapes.

Stone Lakes National Wildlife Refuge Association (Stone Lakes) commented by letter on March 3, 2004. Stone Lakes made similar comments as CNPS, and commented that mitigation of impacts through preservation of vernal pools should preserve vernal pools with comparable geology, soil types, sizes, depths and densities. Stone Lakes requested that all rare plant occurrences be preserved, particularly Slender Orcutt Grass. Stone Lakes comments that the public has not had an opportunity to comment on a specific reserve mitigation plan for the SunRidge area until this point.

Barbara Vlamis, Executive Director of the Butte Environmental Council (BEC) commented by letter dated April 24, 2004. BUC commented that the applicants failed to provide alternatives to the project under 42 U.S.C. Part 4332(2)(c)(Vi), & (E). BEC commented that it was inappropriate for the Corps to evaluate the proposed permit actions noticed under the Public Notice as individual projects, and that such an approach would ignore the significant cumulative effects of the projects and others in the Community Plan area on the vernal pool ecosystem in Sacramento County. BEC commented that the Public Notice does not provide a cumulative impact analysis for public view. BEC requested that a more thorough mitigation and monitoring proposal be submitted for public review, and that preservation of intact vernal pools off-site was not adequate mitigation. BEC requested that permit processing be suspended until an EIS was prepared.

Citizens Committee to Complete the Refuge (CCCR) commented by letter dated April 26, 2004. CCCR commented that vernal pools in the Community Plan area should be considered

ARNI. CCCR commented that fill proposals noticed in the Public Notice were for related and depended projects through their reliance on shared existing and proposed community infrastructure, and should therefore be considered as a single project. CCCR commented that the applicants should prepare an Alternatives Analysis under the 404(b)(1) guidelines to rebut the presumption that a practicable alternative exists to the proposed fill. CCCR commented that the applicants had made no attempt to minimize impacts. CCCR commented that the Corps should prepare an EIS prior to rendering a permit decision, and that impacts from the applicants' proposed fill be considered in concert. CCCR commented that minimal information regarding mitigation for impacts to jurisdictional waters had been provided to the public.

Many individuals submitted form comment letters regarding the proposed permits noticed under the Public Notice. The Corps reviewed and considered each letter, regardless of whether it was a form letter, but in the instance of a form letter, the comments set out by the first letter entered into the record for this Public Notice will be summarized and responded to herein.

Mr. David Wyatt commented by letter dated March 26, 2004. Mr. Wyatt commented that the fill applications covered in the Public Notice be considered cumulatively for significant impacts on natural communities in the impact area. Mr. Wyatt commented that sensitive species surveys should be conducted to determine the presence/absence of listed species within the areas proposed for fill. Mr. Wyatt commented that the Corps' no net loss policy for wetlands required the consideration of creation of large preserves. Mr. Wyatt suggested a 250-foot buffer for vernal pool preserve areas

Ms. Mary Beth Metcalf, M.D. commented by letter dated March 24, 2004. Ms. Metcalf requested that an EIS be prepared, that public hearings be arranged to disseminate additional information collected on environmental impacts.

Joan E. Berry commented by letter dated March 22, 2004. Ms. Berry commented that the Corps should preserve natural habitat in the Specific Plan area rather than approve development.

Irma Acevedo commented by letter dated March 26, 2004. The second page of Ms. Acevedo's letter was missing when admitted to the record. Ms. Acevedo commented that it is inevitable and logical to deduce that by evaluating their applications as individual projects the U.S. Army Corps of Engineers would fail to prove true protection. Ms. Acevedo requested an analysis of alternatives to development within the Specific Plan area and public hearings be held on the subject.

Rob Millberry commented by letter dated March 26, 2004. Mr. Millberry commented that

the vernal pool habitat within the Community Plan area, despite its subtlety should be saved because of their rarity and high quality.

Sara M. Lee commented by letter dated March 26, 2004. Ms. Lee commented that 10 percent of the remaining vernal pools in Sacramento County are included in the Community Plan area and the Corps should not approve their fill. Ms. Lee expressed concern that authorized fill of wetlands would result in negative impacts to water quality and greater demands on water supply. Ms. Lee commented that proposed fill would threaten the survival of vernal pool fairy shrimp. Ms. Lee requested that the Service be consulted on the proposed fill and that mitigation should not be in the form of creation. Ms. Lee expressed concern that the proposed fill for the Community Plan area would cause additional off-site impacts to hydrology of unfilled wetland areas.

M. Nasserri commented by letter dated March 12, 2004. M. Nasserri requested that the EPA, the Service and the Corps create a strategy for preserving wetlands and vernal pools in the SunRidge Specific Plan and Community Plan areas.

Elizabeth Kuehner commented by letter dated March 10, 2004. Ms. Kuehner commented that the vernal pool species in the Community Plan area were worthy of preservation.

Adrian A. Barnett commented by letter dated March 10, 2004. Mr. Barnett commented that the Corps should take action to preserve the Mather Field Vernal Pools.

Patricia Foulk commented by letter dated March 5, 2004. Ms. Foulk commented that potential fill of wetlands within the Specific Plan and Community Plan area would lead to irreversible fragmentation of vernal pools in these areas. Ms. Foulk commented that the fill proposed under the Public Notice would result in substantial loss of listed species. Ms. Foulk commented that development within the Community Plan area would impact hydrology in the Community Plan area and surrounding areas, and result in a loss of diversity of vernal pool types. Ms. Foulk commented that the success of creation mitigation is not scientifically supported and is not adequate mitigation for natural habitat. Ms. Foulk commented that the Specific Plan EIR did not sufficiently analyze wetland impacts and that an EIS should be prepared. Ms. Foulk commented that existing traffic conditions indicate the necessity of an EIS. Ms. Foulk commented that small, "vest pocket" preserves would not sufficiently preserve vernal pool habitat and species.

Jean V. Shepard commented by letter dated March 3, 2004. Ms. Shepard commented that all applications for fill covered by the Public Notice should be considered in concert as one application. Ms. Shepard requested that a large, connected wetland preserve be created in the area of the projects covered by the Public Notice.

Carin High commented by letter dated March 15, 2004. Ms. High submitted questions on behalf of Florence LaRiviere, Chairperson of Citizens Committee to Complete the Refuge, whose comments are summarized above.

Bonnie Tran commented by letter dated March 4, 2004. Ms. Tran submitted comments regarding another application for fill, and requested that a vernal pool preserve be established in the Mather Field area.

Alexandra Lamb commented by letter dated March 22, 2004. Ms. Lamb commented that off-site preservation would not mitigate for potential impacts of the fill proposed in the Public Notice. Ms. Lamb commented that the Corps should preserve all vernal pools proposed for impact under the Public Notice and prepare an EIS covering the proposed fill.

Patricia Jones commented by letter dated March 1, 2004. Ms. Jones expressed concern over use of creation as a method for mitigating impacts to wetlands and vernal pools. Ms. Jones requested the preparation of an EIS for the fill proposed under the Public Notice.

d. Requests for public hearings: Ms. Mary Beth Metcalf, M.D. requested a public hearing be arranged to provide additional information to disseminate information from the EIS, if conducted. Since an EIS was not required, thus request was not held. Ms. Irma Acevedo requested an alternatives analysis be conducted and public hearings be held for discussion. An alternatives analysis was conducted however it was determined that demand was not high enough to hold a public hearing.

## 2. Evaluation:

I have reviewed and evaluated, in light of the overall public interest, the documents and factors concerning this permit application as well as the stated views of other interested agencies and the concerned public. In doing so, I have considered the possible consequences of this proposed work in accordance with regulations published in 33 CFR Parts 320 to 330 and 40 CFR Part 230. The following paragraphs include my evaluation of comments received and how the project complies with the above cited regulations.

### a. Consideration of comments:

(1) US EPA responded by letter dated April 26, 2004. EPA believed the permit applications as discussed in the Public Notice would collectively cause unacceptable impacts to Aquatic Resources of National Importance (ARNI). Since 2002, the Corps, EPA, USFWS and other state and local agencies and landowners met to resolve the significant environmental concerns associated with the Sunrise Douglas Community Plan/SunRidge Specific Plan. As a result, the agencies produced a plan (A Conceptual-Level Strategy for Avoiding, Minimizing and

Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area, dated June 2004) and a map (Sunrise-Douglas Community Planning Area dated March 8, 2004) to significantly reduce impacts to waters by outlining large preserve areas along with a strategy for conservation. EPA stated in their letter dated that implementation of the conceptual-level strategy referenced above serves as a baseline for environmental protection. Properly implemented, it would resolve EPA's CWA issues through avoidance of aquatic resources and minimization of impacts. The proposed Anatolia IV project complies with the Conceptual Strategy created for the SunRidge Specific Plan Area.

Consistent with the Conceptual Strategy, the applicant proposes to compensate for impacts to wetlands through preservation off-site, and through restoration/creation of high quality wetlands. These actions will take place pursuant to a Mitigation and Monitoring Plan prepared for and submitted to the Corps and the Service for review and approval. Thus, these measures offset any impacts to wetlands and vernal pools on the site and address EPA's concerns.

(2) The United States Fish and Wildlife Service (Service) commented by letter dated April 26, 2004. The Service requested preparation of an Alternatives Analysis in compliance with the 404(b)(1) Guidelines. The applicant has submitted an individual alternatives analysis for the Project, and has participated in the creation of the Regional Alternatives Document. The Alternatives Analysis submitted by the applicant determined that the Project site is the least environmentally damaging practicable alternative site of comparable size and availability within the Specific Plan area, and determined that the proposed Project design was the least environmentally damaging practicable, considering cost, logistics and existing technology.

The Service did not concur with the conclusions of the Sunrise Douglas Community Plan/SunRidge Specific Plan EIR regarding the identification of an environmentally superior alternative. However since their comment, the Service has participated in the finalization of the Conceptual Strategy and Conceptual Reserve map for the Specific Plan area.

The Service commented on proposed re-created stream channels to be constructed within portions of the Specific Plan area. This comment relates to development within the Community Plan area generally. Fill permitted pursuant to the Project application will not be used to create any re-created stream channels, nor are there any proposed within the entire Project.

The Service believed impacts to water quality due to increased urban runoff were inadequately addressed. Impacts to water quality from the permitted fill for the Project will be minimal. The applicant will be required to comply with all requirements of the City's MS-4 permit in assuring adequate treatment of urban runoff, including implementation of

water quality BMPs on the project site.

The Service recommended against in-stream storm water detention ponds. Fill permitted pursuant to the Project application will not be used to create any in-stream detention ponds, nor are there any proposed within the entire Project.

The Service believed proposed development within the Community Plan area would likely impact the Stone Lakes National Wildlife Refuge downstream of the Community Plan area. Since the Project is not within the Upper Morrison Creek sub-watershed, any off-site flows resultant from fill permitted for the Project are not likely to reach the Stone Lakes Refuge, and therefore would have minimal impact on the Refuge.

The Service commented on the potential of off-line water quality basins to impact the hydrology of streams running through the site. Fill activities permitted pursuant to the Project application will not contribute to the creation of any off-line water quality basins, nor are there any proposed within the entire project. The Project will otherwise implement adequate water quality BMPs to assure minimization of impacts to water quality from permitted fill for the Project.

The Service commented that development within the Community Plan area would impact special status species. The Service has subsequently issued a biological opinion for proposed fill of the project, concluding that mitigation measures proposed for impacts to jurisdictional waters are sufficient to offset impacts to listed species and their habitat.

The Service commented that development within the Community Plan area would result in unacceptable impacts to ARNI. Please see our response to EPA's similar comment regarding ARNI, in d.(1) above. Subsequent to this comment, the Service has assisted in finalizing the Conceptual Strategy and accompanying Conceptual Reserve map, which enumerate protections necessary to adequately protect wetlands and vernal pools within the Specific Plan area.

The Service commented that a comprehensive on-site mitigation strategy for wetlands and vernal pools in the Community Plan area was necessary. Since this comment, the Service has assisted in finalizing the Conceptual Strategy and accompanying Conceptual Reserve Map for wetlands in the Specific Plan area. The Project complies with the principles and standards of the Conceptual Strategy and complies with the Conceptual Reserve Map through preservation. Landowners in the remaining area of the Community Plan outside the Specific Plan have agreed to prepare an EIS to further analyze impacts to wetlands in that portion of the Community Plan.

The Service commented that a wetland mitigation and monitoring plan for the Community



Plan area should be submitted to the federal agencies for their review. The areas of permitted fill on the Project will be mitigated off-site at preserve areas approved by the Service.

The Service believed that all interrelated projects receiving Nationwide Permits within the Community Plan area should instead be considered through the Individual Permit process. In this case, the proposed fill related to the Project is being considered under the individual permit process. Additionally, the applicant has requested authorization for all fill reasonably related to the Project, and therefore has complied with Corps regulations requiring the inclusion of fill activities necessary for a particular project under one permit application.

The Service recommended the adoption of the Conceptual Strategy and Conceptual Reserve map created by the agencies. Subsequent to this comment, the Service assisted in finalizing the Conceptual Strategy and Conceptual Reserve Map, and has been requiring compliance with them as a condition of its biological opinions, including the no-jeopardy opinion for the Project.

The Service requested that the Corps initiate consultation under Section 7 of the Endangered Species Act. The Corps has completed a section 7 consultation with the Service for the permitted fill on the Project, receiving a no-jeopardy biological opinion on December 22, 2004.

(3) Caltrans requested that any runoff from the proposed development not contribute a contaminant load to storm waters entering the State Highway System (SHS) right-of-way, and that all runoff entering the SHS meet Regional Board standards for clean water. Caltrans requested that increased flows to the SHS be mitigated. Caltrans requested the incorporation of environmental Best Management Practices to mitigate adverse drainage impacts.

The applicant will minimize impacts to water quality that could result from permitted fill through implementing applicable pre- and post-construction BMPs and otherwise complying with the requirements of the City's MS-4 permit. Additionally, the Project will abide by the conditions of the Clean Water Act Section 401 Water Quality Certifications for the Project, dated December 28, 2004.

(4) The California Native Plant Society (CNPS) commented that the fill proposed under the Public Notice would impact an unusually high concentration and diversity of vernal pools in Sacramento County. The proposed 404 permit for the Project will affect approximately 2.24 acres of vernal pools. These features are dispersed throughout the Project site, unlike other portions of the Specific Plan area that retain high concentrations of pools and wetlands in large vernal pool and wetland complexes. The site's off-site connections to the west have been cut off by the existing Jaeger Road. Given the small amount of vernal pool on the site,

Anatolia IV does not provide a high concentration of high quality vernal pool habitat that may be characteristic of other areas of Sacramento County.

CNPS commented it was inappropriate for the Corps to evaluate the proposed fill permits as individual actions because they are part of a single planning area (the Specific Plan). The Project and the remaining Specific Plan development have been evaluated under the Conceptual Strategy.

The CEQ's NEPA regulations also require that federal agencies consider "connected" or "cumulative" actions under the same NEPA review, and grant the Corps discretion to consider similar actions together under a single review. (40 C.F.R. Part 1508.25.) Under the guidelines, federal actions are connected if they, for example, automatically trigger other actions, cannot proceed unless other actions are taken previously or simultaneously, or are otherwise interdependent parts of a larger action and depend on the large action for their justification. Cumulative actions must also be included if, when viewed with other proposed actions, have cumulatively significant impacts that can be discussed in the same impact statement. Similar actions may be considered together when the best way to adequately assess the combined impacts of the similar actions would be to do so under one impact statement.

The Sacramento District uses an "independent utility" test to determine whether its actions are connected to other actions. An action is said to have independent utility, thus not connected, if it would take place with or without any other actions. Applying this standard, the fill necessary for the Project has independent utility since it could move forward regardless of whether the other applications under the Public Notice are approved or the associated projects constructed. The applicant has included all fill necessary to construct required roadway, potable water, wastewater disposal and other infrastructure that it cannot otherwise obtain from currently existing infrastructure in the area.

Under the CEQ NEPA regulations, separate federal actions that have a cumulatively significant impact should also be included under the same NEPA review. This requirement is subject to a rule of reason: where projects that may ultimately necessitate Corps' permit actions are insufficiently detailed to contribute to a meaningful analysis of their environmental impacts, the Corps is not required to include them. In this instance, all those activities within the Specific Plan area that have sufficient detail to be included in a cumulative analysis discussion, i.e., those that have submitted 404 permit applications, have been included within the cumulative impacts discussion of section V.F, above, in addition to earlier discussions of cumulative impacts in the area in the SD Project EIS/EIR and Community Plan/Specific Plan EIR. Using information from those previous studies as well as information in the current record, the cumulative impacts discussion in this Permit Evaluation concluded that this permit action would not result in cumulatively substantial

impacts that would warrant the preparation of an EIS.

CNPS commented that a piecemeal approach would discount significant cumulative effects on vernal pools of proposed fill under the Public Notice, and that an Environmental Impact Statement was needed to assess the combined effect of development and alternatives. NEPA and its implementing regulations do not require an EIS for this permit decision. Under NEPA and federal law applying NEPA, a federal agency must review its proposed action to determine whether it will significantly affect the human environment, including cumulatively, and should prepare an EIS when, in the agency's determination, significant effects will occur that warrant the preparation of an intensive study of the agency's action and its effects, and when such an intensive study would provide additional meaningful information to the public and the decision-making agency. The potentially significant cumulative impacts of development of the entire Specific Plan and Community Plan areas have already been addressed by the County's publicly available Specific Plan EIR, as discussed in these findings. Preparation of an EIS for effects occurring as the result of the permitted fill would not provide additional information to the public or to the Corps. The preparation of an EIS does not have the potential to provide the Corps with additional information on impacts that are within its authority or ability to control. Last, the Corps, EPA, Service and other state and local agencies and landowners met to resolve the significant environmental concerns associated with the Sunrise Douglas Community Plan/SunRidge Specific Plan. As a result, the agencies produced a plan (A Conceptual-Level Strategy for Avoiding, Minimizing and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area, dated June 2004) and a map (Sunrise-Douglas Community Planning Area dated March 8, 2004) to significantly reduce impacts to waters by outlining large preserve areas along with a strategy for conservation, thereby obviating the need to prepare an EIS.

CNPS commented that a County-wide study had shown the Community Plan area to have a high concentration and diversity of vernal pools. The applicant responded to the Service's similar comment in response to comment (2), above.

CNPS commented that the area hosted several listed species. However, the Service, through section 7 consultation with the Corps, has determined that mitigation proposed by the applicant will offset impacts to listed species from the permitted fill.

CNPS requested that the permit applicants be required to include on-site preservation as part of their mitigation package for approved fill, and that it was not possible to fully mitigate for lost wetland area through preservation in distant areas of the County. The Conceptual Strategy and Conceptual Reserve map creates a reserve system for the Specific Plan area that includes on-site avoidance through the Specific Plan. According to the Conceptual Reserve map, on-site avoidance is not necessary at the Project, particularly because the preservation of vernal pools on site would further degrade through time due to surrounding urban

development, are small in acreage and lack habitat connectivity.

CNPS requested that the Community Plan area contain a large core preserve area with inter-connected wildlife corridors. The Service, Corps and EPA have collaborated to create such an area through the final Conceptual Strategy and Conceptual Reserve map.

CNPS requested that vernal pool creation be avoided, especially within undisturbed vernal pool landscapes. The Project proposes an off-site creation/restoration component to its mitigation proposal. The Corps and the Service both have final approval authority over mitigation proposal to assure that created wetlands and vernal pools do not damage existing features and are created and managed appropriately.

(5) Stone Lakes National Wildlife Refuge Association ( Stone Lakes ) submitted similar comments as CNPS. Responses to the CNPS comments, at section (4) above, are applicable to Stone Lakes' comments. In addition, Stone Lakes commented that mitigation of impacts through preservation of vernal pools should preserve vernal pools with comparable geology, soil types, sizes, depths and densities. The applicant intends to preserve existing high quality vernal pool habitat offsite.

Stone Lakes commented that the public has not had an opportunity to comment on a specific reserve mitigation plan for the SunRidge area until this point. However, specific mitigation proposals are not typically contained in the public notice or circulated for comment.

(6) Butte Environmental Council (BEC) commented that the applicants failed to provide alternatives to the project under 42 U.S.C. Part 4332(2)(c)(Vi), & (E). However, Corps regulations do not require publication of alternatives in a Public Notice. (33 C.F.R. Part 325.3.) Additionally, the Public Notice provides sufficient information for the public to consider and suggest possible fill alternatives to the Corps for consideration as part of the public interest review.

BEC commented that it was inappropriate for the Corps to evaluate the proposed permit actions noticed under the Public Notice as individual projects, and that such an approach would ignore the significant cumulative effects of the projects and others in the Community Plan area on the vernal pool ecosystem in Sacramento County. The applicant responded to similar comments from CNPS at section (4), above.

BEC commented that the Public Notice does not provide a cumulative impact analysis for public view. This document analyses potential cumulative impacts from the permitted fill. In addition, information on the cumulative impacts of proposed wetland and vernal pool fill has been available to the commenter through the Community Plan and Specific Plan EIR since 1998.

BEC requested that a more thorough mitigation and monitoring proposal be submitted for public review, and that preservation of intact vernal pools off-site was not adequate mitigation. The applicant responded to similar comments from CNPS and Stone Lakes at sections (4) and (5), above. The applicant's mitigation proposal for permitted fill has been reviewed by the Service, who determined that it offset impacts to listed vernal pool species and their habitats to be filled as part of the Project.

BEC requested that permit processing be suspended until an EIS was prepared. We responded to a similar comment from CNPS at section (4), above. We do not believe an EIS is warranted for this permit action.

(7) Citizens Committee to Complete the Refuge (CCCR) commented that vernal pools in the Community Plan area should be considered ARNI. EPA identified them as an ARNI.

CCCR commented that fill proposals noticed in the Public Notice were related by dependency on shared existing and proposed community infrastructure, and should therefore be considered as a single project. We have responded to a similar comment from CNPS, at section (4) herein. The Project was given full consideration under the Conceptual Strategy.

CCCR commented that the applicants should prepare an Alternatives Analysis under the 404(b)(1) guidelines to rebut the presumption that a practicable alternative exists to the proposed fill. We responded to a similar comment from the Service at section (2), above. The applicant has submitted an alternatives analysis, as discussed in section I of this decision document.

CCCR commented that the applicants had made no attempt to minimize impacts. The submitted 404(b)(1) analyzed seven on-site avoidance alternatives. As discussed in this decision document, the alternatives analysis concluded that the applicant's proposed project was the least environmentally damaging practicable alternative.

CCCR commented that the Corps should prepare an EIS prior to rendering a permit decision, and that impacts from the applicants' proposed fill be considered in concert. We responded to a similar comment from CNPS in section (4) above.

CCCR commented that minimal information regarding mitigation for impacts to jurisdictional waters had been provided to the public. The applicant has submitted a mitigation plan for review, which contains both an offsite creation and preservation component.

(8) Mr. David Wyatt commented that the fill applications covered in the Public Notice be considered cumulatively for significant impacts on natural communities in the impact area. The applicant responded to a similar comment from CNPS in section (4), above. In

addition, this decision document has considered the potential cumulative impacts of the permitted fill, consistent with the request of the commenter.

Mr. Wyatt commented that sensitive species surveys should be conducted to determine the presence/absence of listed species within the areas proposed for fill. The applicant responded to a similar comment from CNPS at section (4) above. The Service has issued a no-jeopardy biological opinion concerning the permitted fill for the Project, and has concluded that the applicant's proposed mitigation offsets impacts to listed species and their habitats.

Mr. Wyatt commented that the Corps' no net loss policy for wetlands required the consideration of creation of large preserves. The agencies' Conceptual Strategy and Conceptual Reserve map is intended to create a large preserve of vernal pool and wetland habitat. As proposed, the Project complies with the Conceptual Strategy and Conceptual Reserve map.

Mr. Wyatt suggested a 250-foot buffer for vernal pool preserve areas. Comment noted. The Conceptual Strategy created by the agencies incorporates buffer requirements for the created reserve.

(9) Ms. Mary Beth Metcalf, M.D. requested that an EIS be prepared, that public hearings be arranged to disseminate additional information collected on environmental impacts. The applicant responded to similar comments from CNPS and Stone Lakes at sections (3) and (4), above.

(10) Joan E. Berry commented that the Corps should preserve natural habitat in the Specific Plan area rather than approve development. The Corps, together with EPA and the Service, have identified large blocks of vernal pool and wetland habitat to be preserved in the Specific Plan area through the Conceptual Strategy, while still allowing reasonable economic use of private land within the Specific Plan area.

(11) Irma Acevedo commented that it is inevitable and logical to deduce that by evaluating their applications as individual projects the U.S. Army Corps of Engineers would fail to provide true protection. We responded to similar comments from CNPS at section (4), above. The applicant has submitted an application which includes all fill necessary for its single and complete Project. Ms. Acevedo requested an analysis of alternatives to development within the Specific Plan area and that public hearings be held on the subject. We responded to similar comments from BEC and Stone Lakes, at sections (5) and (6) above.

(12) Rob Millberry commented that the vernal pool habitat within the Community Plan area,

despite its subtlety should be saved because of their rarity and high quality. We responded to similar comments from Ms. Berry at section 10, above.

(13) Sara M. Lee commented that 10 percent of the remaining vernal pools in Sacramento County are included in the Community Plan area and the Corps should not approve their fill. We have responded to similar comments from Ms. Berry, in section (10) above. The Conceptual Strategy and Conceptual Reserve map was conceived in large part due to the agencies recognition of comments such as Ms. Lee's. The Strategy developed for the Specific Plan area permits compliance with Endangered Species Act and Clean Water Act protections for vernal pools in this area in conjunction with permitting reasonable development on private lands within the Specific Plan area. In this case, the permitted fill for Anatolia IV will impact vernal pools that are not scheduled for protection under the agencies' Conceptual Reserve map.

Ms. Lee expressed concern that authorized fill of wetlands would result in negative impacts to water quality and greater demands on water supply. We have responded to similar comments from the Service regarding water quality at section (2), above. We did not conclude that the permitted fill would cause significant water quality or water supply impacts, and that the impact of the permitted fill for these categories of environmental impacts is adequately mitigated.

Ms. Lee commented that proposed fill would threaten the survival of vernal pool fairy shrimp. We responded to similar comments from the Service, at section (2), above, noting that the Service issued a no-jeopardy biological opinion for vernal pool fairy shrimp for the permitted fill covered by the Permit Evaluation, concluding that mitigation proposed by the applicant adequately offset impacts to fairy shrimp and its habitat resulting from the permitted fill.

Ms. Lee requested that the Service be consulted on the proposed fill and that mitigation should not be in the form of creation. We responded to similar comments from the Service at section (2) above.

Ms. Lee expressed concern that the proposed fill for the Community Plan area would cause additional off-site impacts to hydrology of unfilled wetland areas. The Service, in its no-jeopardy opinion, evaluated the potential for indirect impacts to wetlands and vernal pools into account.

(14) M. Nasseri requested that the EPA, the Service and the Corps create a strategy for preserving wetlands and vernal pools in the Specific Plan area. The Conceptual Strategy and Conceptual Reserve plan was designed to address this comment.

(15) Elizabeth Kuehner commented that the vernal pool species in the Community Plan area were worthy of preservation. We addressed similar comments from Ms. Lee and Ms. Berry at section (10) and (13), above.

(16) Adrian A. Barnett commented that the Corps should take action to preserve the Mather Field Vernal Pools. The permitted action will not impact vernal pools at Mather Field. The agencies are implementing the Conceptual Strategy to protect vernal pools in the Specific Plan area.

(17) Patricia Foulk commented that potential fill of wetlands within the Specific Plan and Community Plan area would lead to irreversible fragmentation of vernal pools in these areas. Compliance with the agencies' Conceptual Strategy and Conceptual Reserve map will assure that large, intact areas of vernal pools and wetlands are preserved through the Specific Plan area. The Project is consistent with these plans.

Ms. Foulk commented that the fill proposed under the Public Notice would result in substantial loss of listed species. We have responded to similar comments from the Service in section (2), the CNPS in section (4), and Mr. Wyatt in section (8), above. The Corps has received a no-jeopardy biological opinion from the Service covering the permitted fill.

Ms. Foulk commented that development within the Community Plan area would impact hydrology in the Community Plan area and surrounding areas, and result in a loss of diversity of vernal pool types. As discussed in this decision document, the permitted fill for the Project does not have the potential to significantly impact vernal pool hydrology in the Community Plan area. The agencies' Conceptual Strategy is designed to reduce impacts to wetlands and vernal pools within the SunRidge Specific Plan unpermitted areas. For the remainder of the Community Plan area, to the south, the agencies and landowners have agreed to prepare an Environmental Impact Statement to address impacts to vernal pools and vernal pool species. Together, these actions will assure that permitting actions in the Community Plan area will not significantly impact wetlands hydrology.

Ms. Foulk commented that the success of creation mitigation is not scientifically supported and is not adequate mitigation for natural habitat. We have responded to similar comments from CNPS at section (4), above.

Ms. Foulk commented that the Specific Plan EIR did not sufficiently analyze wetland impacts and that an EIS should be prepared. We have addressed similar comments from CNPS at section (4) above. In this case, the permitted fill for the Project will not result in significant impacts to wetlands, either individually or cumulatively. As discussed, the permitted fill is considered the least environmentally damaging practicable alternative for this site, and will not result in jeopardy to listed wetland and vernal pool species. It is also consistent with the



Conceptual Strategy and will contribute to preservation of areas identified on the Conceptual Reserve map. These measures will assure that the permitted fill for the Project will not have a cumulative impact to wetlands in the area.

Ms. Foulk commented that existing traffic conditions indicate the necessity of an EIS. Traffic decision document addresses the potential impacts to traffic from the permitted fill. As discussed, the permitted fill is not expected to contribute to any roadways or intersections expected to be significantly impacted due to traffic.

Ms. Foulk commented that small, "vest pocket" preserves would not sufficiently preserve vernal pool habitat and species. The permitted fill in this case would not contribute to the creation vest pocket preserves. The Conceptual Strategy further addresses this concern through the creation of a larger reserve stretching across multiple properties in the Specific Plan area.

(18) Jean V. Shepard commented that all applications for fill covered by the Public Notice should be considered in concert as one application. We addressed a similar comment from CNPS and the Service at sections (3) and (4), above. Ms. Shepard requested that a large, connected wetland preserve be created in the area of the projects covered by the Public Notice. We addressed a similar comment from Ms. Foulk in (17), above.

(19) Carin submitted questions on behalf of Florence LaRiviere, Chairperson of Citizens Committee to Complete the Refuge. Responses the CCCR comments are set out above at section (7), above.

(20) Bonnie Tran submitted comments regarding another application for fill noticed in the Public Notice.

(21) Alexandra Lamb commented that off-site preservation would not mitigate for potential impacts of the fill proposed in the Public Notice. Ms. Lamb commented that the Corps should preserve all vernal pools proposed for impact under the Public Notice and prepare an EIS covering the proposed fill. We addressed similar comments from CNPS at section (4), above.

(22) Patricia Jones expressed concern over use of creation as a method for mitigating impacts to wetlands and vernal pools. Ms. Jones requested the preparation of an EIS for the fill proposed under the Public Notice. We responded to similar comments from CNPS at section (4), above.

b. Evaluation of Compliance with Section 404 (b)(1) guidelines (restrictions on discharge, 40 CFR 230.10). (A check in a block denoted by an asterisk indicates that the

project does not comply with the guidelines.):

1) Alternatives test:

Yes\*\_\_ No X i) Based on the discussion in II B, are there available, practicable alternatives having less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharges into "waters of the United States" or at other locations within these waters?

Yes X No\*\_\_ ii) Based on II B, if the project is in a special aquatic site and is not water dependent, has the applicant clearly demonstrated that there are no practicable alternative sites available?

Special restrictions. Will the discharge:

Yes\*\_\_ No X i) Violate state water quality standards?

Yes\*\_\_ No X ii) Violate toxic effluent standards (under Section 307 of the Act)?

Yes\*\_\_ No X iii) Jeopardize endangered or threatened species or their critical habitat?

Yes\*\_\_ No X iv) Violate standards set by the Department of Commerce to protect marine sanctuaries?

Yes\_\_ No\* X v) Evaluation of the information in II C and D above indicates that the proposed discharge material meets testing exclusion criteria for the following reason(s):

(X) based on the above information, the material is not a carrier of contaminants.

( ) the levels of contaminants are substantially similar at the extraction and disposal sites and the discharge is not likely to result in degradation of the disposal site and pollutants will not be transported to less contaminated areas.

( ) acceptable constraints are available and will be implemented to reduce contamination to acceptable levels within the disposal site and prevent contaminants from being transported beyond the boundaries of the disposal site.

2) Other restrictions. Will the discharge contribute to significant degradation of "waters of the United States" through adverse impacts to:

Yes\* ☐ No ☒ i) Human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife, and special aquatic sites?

Yes\* ☐ No ☒ ii) Life states of aquatic life and other wildlife?

Yes\* ☐ No ☒ iii) Diversity, productivity and stability of the aquatic ecosystem, such as loss of fish or wildlife habitat, or loss of the capacity of wetlands to assimilate nutrients, purify water or reduce wave energy?

Yes\* ☐ No ☒ iv) Recreational, aesthetic and economic values?

3) Actions to minimize potential adverse impacts (mitigation).

Yes ☒ No\* ☐ Will all appropriate and practicable steps (40 CFR 230.70-77) be taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem? Refer to permit special conditions listed above.

c. General Evaluation [33 CFR 320.4 (a)]:

1) The relative extent of the public and private need for the proposed work has been considered: The project will address a public need for housing opportunities in an area with existing housing shortages. It will address the private need of the project proponent to realize the gain expected from project implementation.

2) The practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work has been evaluated: Alternative sites and layouts were considered; however, the alternatives were considered to be impracticable (see II.B above). Pursuant to these findings, the proposed fill is the least environmentally damaging practicable alternative to meet the project purpose.

3) The extent and permanence of the beneficial and/or detrimental effects the proposed structures or work may have on the public and private uses to which the area is suited has been reviewed: The loss of aquatic functions and values in the project site will be permanent and detrimental. The mitigation created by the applicant should be effectively permanent, with dedication of a conservation easement and in-perpetuity management and monitoring. The permitted project will have a beneficial effect on the existing housing demand, and on the uses for which the area has been designated by the City and County.

d. Significant National Issues: None.

4. Determinations:

a. Finding of No Significant Impact (FONSI) (33 CFR Part 325). Having reviewed the information provided by the applicant, all interested parties and the assessment of environmental impacts contained in Part II of this document, I find that this permit action will not have a significant impact on the quality of the human environment. Therefore, an Environmental Impact Statement will not be required.

b. Section 404(b)(1) Compliance/Non-compliance Review (40 CFR 230.12):

( ) The discharge complies with the guidelines.

(X) The discharge complies with the guidelines, with the inclusion of the appropriate and practicable conditions listed above (in II.H) to minimize pollution or adverse effects to the affected ecosystem.

( ) The discharge fails to comply with the requirements of these guidelines because:

( ) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem and that alternative does not have other significant adverse environmental consequences.

( ) The proposed discharge will result in significant degradation of the aquatic ecosystem under 40 CFR 230.10(b) or (c).

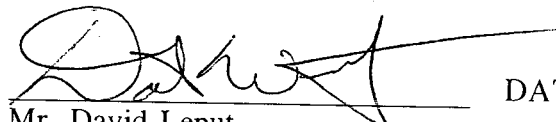
( ) The discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem, namely....

( ) There is not sufficient information to make a reasonable judgement as to whether the proposed discharge will comply with the guidelines.

c. Section 176(c) of the Clean Air Act: I have analyzed the proposed project for conformity applicability and determined that the proposed activities in this permit action will not exceed de minimis levels of direct emissions of a criteria pollutant or its precursors, and are exempt by 40 CFR 93.152. Any later indirect emissions generally cannot be practicably controlled by the Corps of Engineers and, for these reasons, the permit decision does not require a conformity determination.

d. Public interest determination: I find that issuance of a Department of the Army permit (with special conditions), as prescribed by regulations published in 33 CFR Parts 320 to 331, and 40 CFR Part 230 is not contrary to the public interest.

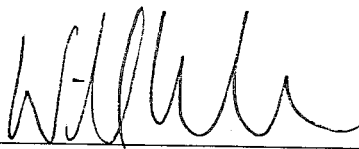
PREPARED BY:



Mr. David Leput  
Senior Project Manager

DATE: 6 Sep 2006

REVIEWED BY:

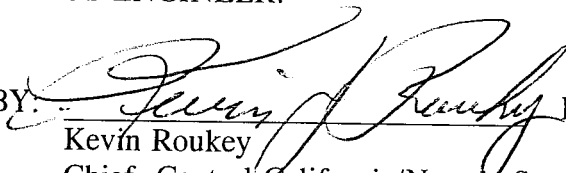


Will Ness  
Chief, Sacramento Office

DATE: 9/7/06

FOR THE DISTRICT ENGINEER:

APPROVED BY:



Kevin Roukey  
Chief, Central California/Nevada Section

DATE: 9/7/06

DEPARTMENT OF THE ARMY PERMIT EVALUATION  
AND DECISION DOCUMENT

**Applicant:** Grantline Investors, LLC

**Application No.:** PN 199400365

This document constitutes my Environmental Assessment, Statement of Findings and review and compliance determination according to the Section 404(b)(1) guidelines for the proposed work described in the attached Public Notice (Appendix A) as the Grantline 208 Project (Application No. 199400365) (hereafter referred to as "Grantline 208" or "Project").

Additionally, the Corps incorporates by reference the following documents: 1) Section 3.0, Environmental Setting, Impacts, and Mitigation Measures of the August 2005 Sunridge East Projects *Mitigated Negative Declaration*; 2) November 2004 *Regional Alternatives Information SunRidge Specific Plan Subarea, Sacramento County, California*; 3) April 2006 Section 404(b)(1) *Supplemental Alternatives Analysis for Grantline 208*.

**I. Proposed Project**

The proposed project is located within the SunRidge Specific Plan Area within the larger Sunrise Douglas Community Plan Area, in Section 15, Township 8 North, Range 7 East, on the USGS Buffalo Creek 7.5' quadrangle in southeastern Sacramento County, California. The description of the proposed work and maps of the site are in the attached Public Notice and further described below.

The Project site encompasses approximately 210.7 acres. The planned land uses for the Grantline 208 Project include residential, park, parkway, school, and detention basin construction on approximately 130.6 acres; major road improvements, including construction of Americanos Boulevard and the expansion of Grantline Road (approximately 4.8 acres); and the construction of a drainage basin along Grantline Road (approximately 7.2 acres). The Project would also include the establishment of an on-site wetland preserve of approximately 68.1 acres. Grantline 208 lies within the County's approved 6,042-acre Sunrise Douglas Community Plan (Community Plan) area and approved 2,632-acre SunRidge Specific Plan (Specific Plan) area.

The site is comprised of level to gently rolling terrain primarily consisting of non-native grasslands. Vernal pools lie within the grasslands. The majority of the site has been used historically as grazing land, but the hydrology of the project site has not been substantially altered from its historical condition. No structures are situated on the site.

### **Prior Environmental Review in the Sunrise Douglas Area**

The Sunrise Douglas area in southeast Sacramento County is generally comprised of the area bounded by Douglas Road to the north, Sunrise Boulevard to the west, Grant Line Road to the east and the Jackson Highway to the south. This area has been the subject of extensive land use planning and attendant environmental review processes under the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA).

In 1987, the Sammis Company (Sammis) initiated a development project in the Sunrise Douglas area that became known as the Sunrise Douglas Project (herein referred to as the SD Project). The SD Project was originally planned as an industrial project over approximately 1,225 acres of land bounded on the west by Sunrise Boulevard, on the north by Douglas Road and on the south by Keifer Boulevard. Sammis applied for County approvals for the industrial development, but changed its proposal to a predominantly residential project in 1989 after the announcement of the potential closure of adjacent Mather Field. The residential project required a General Plan amendment, zoning change, and permit from the Corps for fill of jurisdictional areas within the SD Project area. Sammis' request for the General Plan amendment was the last of its kind in the Sunrise Douglas area because the County subsequently imposed a moratorium on general plan amendments pending its 1993 revision of the County General Plan.

The Corps and the County identified potentially significant environmental impacts associated with the SD Project, and as Lead Agencies, prepared a joint Environmental Impact Statement/Environmental Impact Report for the project under NEPA and CEQA, respectively (SD Project EIS/EIR).

#### **A. The SD Project EIS/EIR**

The Final SD Project EIS/EIR, published in January, 1992, evaluated the impacts of a primarily residential project on approximately 1,225 acres. According to the EIS/EIR, the information therein was intended for use by all agencies concerned with major developments in the SD Project area. (SD Project EIS/EIR, p. 1-1.) The EIS/EIR determined the project area included 82.14 acres of jurisdictional waters of the United States, including 68.06 acres of vernal pools. The development as proposed would impact approximately 38.15 acres, including 26.97 acres of vernal pools. The Corps considered this to be a significant impact if appropriate mitigation measures were not imposed. For mitigation, the SD Project EIS/EIR proposed a combination of avoidance and on-site creation of wetlands and vernal pools within a 482-acre reserve in the SD Project area, and an off-site preservation and creation component. All told, the SD Project EIS/EIR required a minimum of 27.01 acres of vernal pool creation (3.8 acres on site and 23.2 acres off site) and 14.08 acres of wetland creation on site and off site. The

SD Project EIS/EIR concluded that these on-site and off-site measures, together with provisions of the Wetlands Compensation Plan authored for the wetland/vernal pool reserve, would at least maintain wetland and vernal pool functions and values in the area, thereby sufficiently mitigating impacts to wetlands and vernal pools on site. (SD Project EIS/EIR, pp. B-42-43.)

The SD Project EIS/EIR considered all other potentially significant impacts from the development of the project and proposed mitigation measures to reduce all but a few impacts to below significant levels, in accordance with the requirements of NEPA and CEQA. As the SD Project EIS/EIR noted, the Corps limited its jurisdiction to waters of the United States, and its analysis of direct, indirect and cumulative impacts to these jurisdictional waters of the U.S. It subsequently determined appropriate mitigation associated with the Corps' action, the issuance of a Department of the Army permit pursuant to Section 404 of the Clean Water Act. (Final SD Project EIS/EIR, p. B-16). For other potentially significant impacts, the County, as CEQA lead agency, analyzed and imposed additional mitigation measures to reduce potential impacts to levels of less than significant in all but eight categories. Subsequent to this federal and County review, several components of the SD Project have been substantially constructed.

#### B. Sunrise Douglas Community Plan Sunridge Specific Plan EIR

In 1993, at approximately the same time as certification of the SD Project EIS/EIR, the County initiated a Specific Plan process for the greater Sunrise Douglas area, encompassing over 5,000 acres of land, including the SD Project. The County then modified its approach and adopted a more conceptual Community Plan for the greater Sunrise Douglas area, encompassing approximately 6,042 acres, while reducing the area covered by the detailed Specific Plan to approximately 2,632 acres; the Specific Plan area included the SD Project already addressed by the SD Project EIS/EIR.

The County's Sunrise Douglas Community Plan/Sunridge Specific Plan EIR (Community Plan/Specific Plan EIR) assessed environmental impacts related to these planning areas. For the Community Plan area, the Community Plan/Specific Plan EIR analyzed an overall conceptual framework and policy direction for urbanization of the area covered by the Community Plan. Conceptual land uses were assumed for the Community Plan area outside of the Specific Plan area in order to evaluate the cumulative impacts of future urban development of this area. For the Specific Plan area, the EIR analyzed detailed land use and public-facilities plans and corresponding zoning for near-term urban development within the Specific Plan area. The Community Plan/Specific Plan EIR also considered the findings and mitigation measures related to the SD Project Section 404 permit application because the SD Project is within the boundaries of the Specific Plan area. Thus, after the certification of the Community Plan/Specific Plan EIR in 2002, development proposed for 1,225 of the 2,632 total acres of the Specific Plan had been addressed by the Corps' EIS/EIR and the entirety had been



covered by a subsequently prepared EIR. The Corps and other federal agencies engaged the County and landowners within the Specific Plan area to create a Conceptual Strategy for wetland preservation which was subsequently adopted by the Corps, EPA and USFWS to serve as a framework within which to assess a proposed project's impacts to existing environmental factors pertinent to their respective authorities and responsibilities.

On March 6, 2006, the City of Rancho Cordova, which now has jurisdiction over the Sunrise Douglas Community Planning area, adopted the Mitigated Negative Declaration (MND) for the Sunridge East Projects, which include the Grantline 208 project. In so doing, the City relied on the Sunrise Douglas Community Plan/SunRidge Specific Plan Final Environmental Impact Report, which was certified by the Sacramento Board of Supervisors on June 19, 2002.

C. Conceptual-Level Strategy for Avoiding, Minimizing and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area

In May 2002, prior to its certification of the Community Plan/Specific Plan EIS/EIR, the County initiated meetings regarding potential wetlands and endangered species permitting strategies for the entire Community Plan area to ensure the Specific Plan and Community Plan avoidance strategy would reflect Federal and state requirements for avoidance. The Corps, U.S. Fish and Wildlife Service, and U.S. Environmental Protection Agency (Agencies), the California Department of Fish and Game, and a majority of landowners and interested developers within the Specific Plan area attended these meetings. However, consensus was not reached at that time. Subsequently, the County approved both the Community Plan and the Sunridge Specific Plan on July 17, 2002. The conditions of approval for the Specific Plan require individual applicants to obtain any necessary Corps permit for fill of waters of the U.S. On July 1, 2003, with the incorporation of the City of Rancho Cordova (City), the Community Plan area came under the City's land use jurisdiction.

In early 2004, Congressman Doug Ose asked that all stakeholders come together for further meetings to cooperatively develop a conceptual avoidance and mitigation strategy that would provide guidance for individual projects needing discrete permit actions to avoid and preserve wetland areas that cumulatively would make up an areawide ecological preserve to satisfy the mandates of federal law administered by the Federal Agencies. This culminated in the Agencies developing a strategy that provided a conceptual framework for planned development in the Community Plan area while also considering the likely federal and state requirements to be imposed on each project within the Community Plan area consistent with the Agencies' responsibilities under the Clean Water Act, the Endangered Species Act and other applicable federal statutes.

The Conceptual-Level Strategy for Avoiding, Minimizing and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area, dated June 2004, (Conceptual Strategy, incorporated by reference) sets out ten principles and standards to assist property owners in identifying alternatives that minimize individual and cumulative effects on aquatic resources and sensitive species. Together with the ten standards and principles, the Agencies released a Conceptual Reserve map of avoidance within the Community Plan area. The map, together with the ten principles and standards and an agency-approved preserve management plan, was designed to identify a preservation and mitigation strategy for the Community Plan area to ensure that the aquatic resource habitats would be maintained in sufficient amounts to preserve their functions and values. If adopted by prospective project applicants to minimize both the project-specific and cumulative effects associated with the development of projects projected under the Specific Plan, it is anticipated the Conceptual Strategy preserve area would protect remaining aquatic resource values. Furthermore, these aquatic resource values would be managed in perpetuity according to an Agencies-approved preserve management plan. Each project proposed would then be individually assessed for compliance with the Conceptual Strategy and independently analyzed for any other issues not addressed under the Strategy.

For the unpermitted area of the Sunridge Specific Plan (the Sunridge Specific Plan area excluding the SD Project), the Corps requested that permit applicants prepare an analysis of potential cumulative impacts and an evaluation of the practicability of different reserve designs. If, based on these analyses and other relevant data, the Corps concluded that the cumulative impacts were not significant or were reduced to level of less than significant, the Corps could act on those pending applications without preparation of an EIS. Applicants for seven individual permits pending before the Corps, including four projects noticed together in the same Public Notice as the Project (Public Notices Nos. 199700006; 200000336; 200100230; and 200100252), submitted the requested analyses.

The applicant provided the Regional Alternatives Information Sunridge Specific Plan Subarea, Sacramento County, California, dated November, 2004 (Alternatives Information Document) to identify regional and sub-regional cumulative impacts that may reasonably be expected to occur based on the Conceptual Reserve plan developed by the Agencies. The Alternatives Information Document analyzes the Conceptual Reserve and eight alternative reserve configurations according to criteria for minimizing jurisdictional impacts and providing connected reserve areas in light of cost, logistics and existing technology. As discussed in Sections IV.F. below, it is our preliminary determination these projects would not likely have cumulatively significant impacts to the environment provided that these projects are developed consistent with the terms of the Conceptual Strategy, including the requirements for implementing the Conceptual Reserve. If any of these projects deviate from the Conceptual Strategy, the Corps will reassess this determination as to the extent and nature of cumulative impacts and

prepare additional project-specific environmental documentation as necessary for the remaining Sunridge Specific Plan projects that require Corps permits.

### **Jurisdictional Impacts Related to the Grantline 208 Project**

The Project site contains approximately 11.10 acres of waters of the United States. This jurisdictional acreage includes 10.07 acres of vernal pools, 0.05 acre of depressional seasonal wetland, 0.66 acre of riverine seasonal wetland, 0.08 acre of seasonal marsh, and 0.24 acre of ephemeral drainages.

The Project would result in the placement of fill material into 5.70 acres of waters of the United States, including 5.22 acres of vernal pools, 0.04 acre of depressional seasonal wetland, 0.36 acre of riverine seasonal wetland, and 0.08 acre of ephemeral drainage. In addition to direct impacts, 0.45 acres vernal pools and seasonal wetlands located within the preserve have upland buffers of less than 250 feet and could be adversely indirectly affected by the surrounding development.

### **Proposed Mitigation**

Of the 11.1 acres of waters of the United States on the project site, 5.4 acres of these waters are within the on-site preserve consistent with the Corps' policy of avoidance, minimization and mitigation. Of these 5.4 acres, 4.65 acres are protected vernal pool branchiopod habitat greater than 250 feet from the proposed development. The applicant proposes additional off-site mitigation based on a combination of preservation and restoration/creation of waters of the United States consistent with the Conceptual Strategy and Preserve Map.

The Applicant would provide additional compensation for impacts to 5.7 acres of jurisdictional waters of the U.S. on the project site, including 5.22 acres of vernal pool habitat, by preserving approximately 6.9 acres of vernal pool branchiopod habitat at the Town Center mitigation site to address the preservation component. The Town Center mitigation site is located in southeast Sacramento County, approximately four miles south southwest from the project site. Wetlands proposed for preservation within the Town Center site include vernal pools, depressional seasonal wetlands and riverine seasonal wetlands, and function similarly to the vernal pools and other habitats impacted on the Project site. The 6.9 acres to be preserved at the Town Center site in addition to the 4.65 acres of on-site vernal pool habitat preservation result in total preservation of 11.55 acres, the great majority of which are vernal pool branchiopod habitat. This provides a preservation mitigation ratio of almost 2:1 acres preserved to acres directly impacted and 1:1 acres preserved to acres indirectly impacted (0.45 acres within 250 feet of the development area). The preserved lands would be monitored in perpetuity to provide for the long-term conservation of aquatic resources and endangered species.

The applicant also proposes to restore wetlands at the Town Center mitigation site at a 1:1 restoration/creation-to-loss ratio. The applicant's proposed restoration/creation component, which is based on 5.70 acres of direct impact to waters of the United States and indirect impacts to 0.45 acres of vernal pool brachiopod habitat, would consist of restoration/creation of 6.15 acres of vernal pools and swales at the Town Center mitigation site. Areas restored/created at the Town Center site should retain similar functions to wetland areas impacted at the Project site, substantially assuring no net loss of wetland acreage and function as a result of the permitted fill.

The Mitigation Action Plan and its associated Regulatory Guidance Letter (RGL) 02-02 call for compensation to occur in the watershed of the impact site when practicable. The proposed Town Center Site and the project site are in the Lower Sacramento River watershed. While the Town Center mitigation site is located outside the current City limits of Rancho Cordova, it is within the Grant Line South Planning Area described in the Rancho Cordova General Plan. As such, the conceptual land use plan for the property includes a Village Center at the intersection of Grant Line Road and Jackson Highway as well as Office Mixed Use and Mixed Density Residential on the site. The location of the proposed commercial and office mixed uses corresponds to a high density of existing vernal pools. Placement of a Conservation Easement on the Town Center property removes this property from future development and would preserve high value and high functioning wetlands in perpetuity.

## **II. Environmental and Public Interest Factors Considered:**

### **A. Purpose and need:**

The overall project purpose is to construct a medium-sized, low- to medium-density single-family subdivision and resident-serving public service components (school, neighborhood parks, public open space) proximate to local and regional job centers and existing infrastructure in a manner consistent with the Conceptual Strategy. This project would provide additional housing to help address the existing housing needs within Sacramento County and the immediate region.

### **B. Alternatives Analysis [33 CFR 320.4(b)(4), 40 CFR 230.10]**

The applicant submitted an alternatives analysis for the Project prepared pursuant to the 404(b)(1) guidelines, incorporated by reference. In summary, the Regional Alternatives Analysis considered an analysis of potential alternative locations for the project as applicable to the Grantline 208 site. The Regional Alternatives Analysis concluded there were no practicable alternative locations for construction of the remaining Specific Plan Area projects, including Grantline 208, which would meet the project purpose of constructing residential subdivisions within the southeast Sacramento area with any less damaging impacts on aquatic habitats.

The applicant provided a subsequent alternatives analysis in April 2006 to assess four on-site design alternatives, including the proposed Project. The alternatives analysis discussed the Project and the three other alternatives within the framework of the ten principles and standards discussed in the Conceptual Strategy, and analyzed its level of compliance with the principles and the associated preserve map created for the entire Specific Plan area.

1. No action. The no-action alternative is that alternative potentially available to the applicant if the Corps were to deny authorization for discharge of fill material into waters of the U.S. within the project area, and is the full avoidance alternative discussed in the applicant's supplemental alternatives analysis. To avoid direct and indirect impacts to wetlands, the no-action alternative would require avoidance of all waters of the U.S., including a 250-foot buffer (although the buffer may consist entirely of non-jurisdictional upland habitats, the USFWS maintains that wetlands and vernal pools within this buffer area could incur indirect adverse impacts as a result of residential development). This would require avoidance of 165.9 acres of land area (out of the 210.7 total), with 44.8 acres remaining for development. The remaining developable acreage would be further constrained by the size and pattern of the wetlands across the site. The applicant also evaluated the no-action alternative with a 50-foot buffer. This analysis yielded a remaining net developable acreage (excluding 4.8 acres of major roads and 134.7 acres of open space) of approximately 71.2 acres, resulting in linear, convoluted, or fragmented lands that would be logistically inefficient to develop. Both buffer sizes would result in a no-action alternative that would not leave sufficient contiguous land to feasibly construct a residential development. In considering alternatives that would avoid all jurisdictional waters, the applicant considered the absence of a drainage basin along Grantline Road, which would be required to manage stormwater runoff from drainages east of Grantline Road, as well as the use of bridges and Conspan-type structures to avoid fill of waters to connect portions of the development. However, issues of maintaining safe and efficient circulation patterns still remained. The inability to locate a drainage basin along Grantline Road and to design an efficient circulation pattern made this alternative logistically infeasible and therefore not a practicable alternative.
2. Other project designs (smaller, larger, different, etc.). The applicant provided information on four different alternatives with varying levels of avoidance, including the full avoidance alternative discussed above, a partial avoidance alternative, a full impact alternative, and the proposed Project. The partial avoidance alternative would avoid 10.31 acres of jurisdictional area, including 9.53 acres of vernal pool, 0.21 acres of seasonal stream, 0.49 acres of

seasonal wetland, and 0.08 acres of seasonal marsh. This alternative includes open space preserves on the western and eastern ends of the project site, while the scattered resources in the center of the site would be impacted. The applicant determined that with respect to the partial avoidance alternative, in order to maintain a sufficiently large open space preserve area, the amount of developable acreage remaining after avoidance would be substantially decreased and rendering the applicant's project infeasible. Further, logistical constraints related to this alternative, including the location of detention basins and efficient internal circulation, would preclude the alternatives' ability to satisfy the applicant's logistical criteria. Finally, each of the avoidance alternatives would result in isolated preserves or unconnected avoided areas that would run counter to the intentions of the Conceptual Strategy. With respect to the full impact alternative, this alternative would likely not receive authorization because the Applicant already demonstrated an alternative with lesser adverse environmental impacts.

The applicant also participated in extensive discussions with the Federal Agencies in developing the Conceptual Strategy and accompanying Conceptual Preserve Map for projects within the Specific Plan area. The Conceptual Strategy and Preserve Map identify: (1) wetland and vernal pool avoidance areas within the Specific Plan, and (2) ten principles and strategies necessary to create an aquatic habitat avoidance and preserve area within the Specific Plan area that ensures overall project consistency with the requirements and intentions of the Endangered Species Act and Clean Water Act. The applicant has designed the Grantline 208 to comply with the Conceptual Strategy and associated Preserve Map.

3. Other project sites (40 CFR 230.10): The 404(b)(1) Alternatives Analysis for Grantline 208 considered eight potential alternative sites within the Specific Plan area. As discussed in the Regional Alternatives Analysis, these sites did not meet the availability criterion because they were currently under development by other owners, and/or did not meet the environmental criterion because they were not less environmentally damaging as they were likely to have equal or greater impacts to aquatic ecosystems on their sites.
4. Corps selected alternative: The Corps' selected alternative is the applicant's preferred alternative with inclusion of the following special conditions:
  - a. The permittee shall utilize siltation and turbidity control measures (e.g., silt fences, hay bales) in all areas where disturbed soils may potentially wash into nearby watercourses or adjacent wetlands via rainfall or runoff. Such measures shall remain in place until the project is complete and exposed soils are stabilized.

- b. The permittee shall ensure no debris, soil, silt, sand, rubbish, cement or washings thereof, or petroleum products or washings thereof, are allowed to enter into or placed where it may be washed by rainfall or runoff into nearby watercourses or adjacent wetlands. When project operations are completed, all excess construction materials, debris, or other excess associated project materials shall be removed to an appropriate off-site location outside of any areas subject to Corps jurisdiction.
- c. The permittee shall ensure staging and storage of equipment and project materials, and fueling and maintenance of equipment, are located in areas outside of the Corps' jurisdiction.
- d. The permittee shall ensure the limits of the project's impact area are delimited by the placement of temporary construction fencing, staking or signage prior to initiation of construction.
- e. The permittee shall ensure the project is in full compliance with the provisions of the *Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area* dated June, 2004.
- f. This Corps permit does not authorize you to take any threatened or endangered species, in particular the vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardii*), or designated critical habitat. In order to legally take a listed species, you must have a separate authorization under the Endangered Species Act Section 10 permit, or a Biological Opinion under Endangered Species Act Section 7, with incidental take provisions with which you must comply. The enclosed Fish and Wildlife Service Biological Opinion (Number 1-1-05-F-0305, dated May 18, 2006), contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with incidental take that is also specified in the Biological Opinion. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached Biological Opinion, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the Biological Opinion, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The Fish and Wildlife Service is the appropriate authority to determine compliance with the terms and

conditions of its Biological Opinion, and with the Endangered Species Act. The permittee must comply with all conditions of this Biological Opinion, including those ascribed to the Corps.

- g. To ensure appropriate replacement of functions and values of the aquatic environment that would be lost through project implementation, the permittee shall develop a final comprehensive mitigation and monitoring plan for his proposed compensatory mitigation at a Corps-approved site. This plan must be approved by the Army Corps of Engineers prior to initiation of construction activities. The plan shall include mitigation location and design drawings, vegetation plans, including target species to be planted, and final success criteria, presented in the format of the Sacramento District's Habitat Mitigation and Monitoring Proposal Guidelines, dated December 30, 2004.
- h. To mitigate for the direct loss of 5.70 acres of waters of the United States and indirect impacts to an additional 0.45 acres of waters of the United States that constitute vernal pool branchiopod habitat, the permittee shall construct at least 6.15 acres of vernal pool habitat at a Corps-approved location. The permittee shall complete construction of the compensatory mitigation no later than October 31, 2007.
- i. To ensure compensatory mitigation is completed as required, the permittee shall notify the District Engineer or his representative of the date you start construction of the authorized work and the start date and completion date of the compensatory mitigation construction, in writing and no later than ten (10) calendar days after each date.
- j. To provide a permanent record of the completed compensatory mitigation work, the permittee shall provide two complete sets of as-built plan drawings of the completed work within the off-site mitigation area(s) to the Corps of Engineers. The as-built plan drawings shall indicate any changes made from the original plans in indelible red ink. These as-built plan drawings shall be provided to this office no later than 60 days after the completion of construction of the mitigation area wetlands.
- k. The permittee shall establish and maintain, or cause to be maintained, in perpetuity, compensatory preserves containing not less than 6.15 acres of created and/or restored vernal pool habitat as required by "Special Condition d" at a Corps-approved location, and 6.9 acres of preserved vernal pool branchiopod habitat at a Corps- and USFWS-approved location.



- l. To minimize external disturbance to avoided waters of the United States, the permittee shall incorporate buffers consisting of native upland vegetation of suitable width from the outer limit of jurisdiction of the entire perimeter of created, preserved, and avoided waters of the United States, including wetlands within the proposed preserves, when practicable.
- m. To ensure the preserves are properly managed, the permittee shall comply with the preserve management plan for the off-site mitigation, preservation, and avoidance areas at a Corps- and USFWS-approved location. This plan shall be drafted in accordance with the Sacramento District's Open Space Preserve Operations & Maintenance Template, dated May 19, 2003, and shall describe in detail the activities that are proposed within the preserve area and the long term funding and maintenance of the preserve area. To prevent unauthorized access and disturbance, the applicant shall install fencing and appropriate signage around the perimeter of the preserves.
- n. To protect the integrity of the preserves and avoid unanticipated future impacts, no roads, utility lines, trails, benches, equipment or fuel storage, grading, firebreaks, mowing, grazing, planting, discing, pesticide use, burning, or other structures or activities shall be constructed or be allowed to occur within the off-site mitigation, preservation, and avoidance areas without specific, advance written approval from the Corps of Engineers and USFWS.
- o. To ensure long-term viability of the mitigation, preservation, and avoidance areas, the permittee shall, prior to initiating any activity authorized by this permit:
  - i. Establish a fully-funded endowment to provide for maintenance and monitoring of the off-site mitigation, preservation, and avoidance areas;
  - ii. Designate an appropriate conservation-oriented third party entity to function as preserve manager and to hold the required conservation easements;
  - iii. Record permanent conservation easements and deed restrictions maintaining all mitigation, preservation, and avoidance areas as wetland preserve and wildlife habitat in perpetuity. Copies of the proposed deed restriction and conservation easement language shall be provided to the Corps of Engineers for approval prior to recordation; and

- iv. Provide copies of the recorded documents to the Corps of Engineers no later than 30 days prior to the start of construction of any of the activities authorized by this permit.
- p. The permittee shall engage a biologist familiar with regional vernal pools and seasonal wetlands to monitor all construction activities within 250 feet of the on-site preserve boundary. The monitor shall ensure no unauthorized activities occur within the preserve boundary during project implementation.
- q. To ensure success of the preserved and created waters of the United States, the permittee shall monitor compensatory mitigation, avoidance, and preservation areas for five years or until the success criteria described in the approved mitigation plan are met, whichever is greater. This period shall commence upon completion of the construction of the mitigation wetlands. Additionally, continued success of the mitigation wetlands, without human intervention, must be demonstrated for three consecutive years, once the success criteria have been met. The mitigation plan will not be deemed successful until this criterion has been met.
- r. The permittee shall submit monitoring reports to this office for each year of the five-year monitoring period, and for each additional year, if remediation is required, by July 31 of each year. The permittee shall submit an additional monitoring report at the end of the final three-year period demonstrating continued success of the mitigation program without human intervention.
- s. The permittee shall allow representatives from the Corps of Engineers to inspect the authorized activity and any mitigation, preservation, or avoidance areas at any time deemed necessary to ensure it is being or has been accomplished in accordance with the terms and conditions of your permit.
- t. A copy of this permit shall be accessible on the job site at all times during construction. The permittee shall provide a copy of this permit to all contractors and forepersons, and require they read this authorization in its entirety and acknowledge they understand its contents and their responsibility to ensure compliance with all general and special conditions contained herein.

C. Physical/chemical characteristics and anticipated changes.

(X) Substrate: The substrate primarily consists of Red Bluff-Redding Complex and Redding Gravelly Loam, both of which are well suited for grazing and dry farming. The project site is characterized by flat terrain and gently sloping topography. The project would affect approximately 137.8 acres (excluding 4.8 acres of major roads) of soils on the 210.7-acre site due to mass grading for residential construction, including road and utility infrastructure. This grading does not constitute a substantial impact because this soil series is not uncommon and is therefore not significant.

(X) Currents, circulation or drainage patterns: Site drainage flows south and southwest through the site. Filled areas would be developed and drainage from these areas would be re-routed to the extent necessary to comply with post-construction stormwater plans for the project site. Runoff would be conveyed off site via storm drain to a stormwater detention basin. The applicant would be expected to comply with all post-construction stormwater treatment requirements as set out in the City of Rancho Cordova's MS-4 permit and implement necessary water quality Best Management Practices to avoid potential for substantial adverse nuisance flows from the project site to enter into waters of the United States avoiding substantial off-site impacts. Therefore, modifications to on-site drainage patterns would not be a significant impact.

(X) Suspended particulates; turbidity: Wetlands on the project site likely have slightly turbid water during the rainy season. There is potential for increased turbidity during and after project construction. For those wetlands and vernal pools within the development portion of the project site, this consideration is moot. For the wetlands and vernal pools in the on-site preserve area, however, water quality BMPs required under the City's MS-4 permit, such as use of sediment fencing, would avoid substantial adverse impacts resulting from turbid runoff. It is anticipated that only minimal impacts would occur provided the applicant complies with the City's MS-4 permit and the State Water Quality Certification. Therefore, this impact is determined to be less than significant.

(X) Water quality (temperature, salinity patterns and other parameter): Filled areas developed as part of the proposed project have the potential to contribute urban pollutants to runoff from the site into waters of the United States. These pollutants could include hydrocarbons, nitrates and ammonia, and heavy metals. As with turbidity, the project is required to implement construction and operational BMPs that would avoid substantial adverse impacts from polluted urban runoff into waters of the United States. Minimal impacts are expected provided the applicant complies with the State Water Quality Certification. Therefore, this impact is considered to be less than significant.

(X) Flood control functions: The entire project site is outside the 500-year floodplain and the project does not place housing within any 100-year flood hazard

areas. The Project would include a detention basin to provide flow control functions. The flood control infrastructure for the Project will avoid substantial adverse effects from the permitted fill. The proposed project's impact on flood control functions is less than significant.

(X) Storm, wave and erosion buffers: Jurisdictional areas on the project site currently provide only minimal erosion buffers, consisting primarily of existing vegetation within these areas. The project would completely impact the existing vegetation in the development area, but any impact to erosion buffers, such as they may exist, would be minimized through implementation of construction and operational stormwater BMPs including the timely revegetation of filled areas left exposed, and detention of project runoff to prevent significant adverse erosion off site.

( ) Erosion and accretion patterns: No effect.

(X) Aquifer recharge: Soils and underlying hardpan result in little infiltration of groundwater in the project area. Aquifer recharge from the project site is minimal because of these site conditions. Post-project, groundwater recharge would occur primarily in the 68-acre on-site preserve area. Runoff from new impervious surfaces created as a result of the permitted fill would be collected and diverted through on-site drainage controls and ultimately released downstream. Some infiltration from these features could be expected. Thus, recharge would still occur, but at different locations and at different rates than under existing conditions, and no substantial adverse effects would likely occur because of the limited affected area. Therefore, this impact is not significant.

( ) Baseflow: No effect.

Additionally, for projects involving the discharge of dredged material:

( ) Mixing zone, in light of the depth of water at the disposal site; current velocity, direction and variability at the disposal site; degree of turbulence; water column stratification discharge vessel speed and direction, rate of discharges per unit of time; and any other relevant factors affecting rates and patterns of mixing: No effect.

D. Biological characteristics and anticipated changes.

(X) Special aquatic site (wetlands, mudflats, coral reefs, pool and riffle areas, vegetated shallows, sanctuaries and refuges, as defined in 40 CFR 230.40-45): The project site currently contains 11.1 acres of wetlands. The project, as proposed, would impact 5.62 acres of special aquatic sites, including 5.22 acres of vernal pools, and 0.45 acres of seasonal wetlands. The vernal pools are *northern hardpan vernal pools* that occur within depressions on cemented soils in the Central Valley. The seasonal wetlands on

the project site are also typically in depressions but their periods of inundation or saturations are less than for the vernal pools and their plant species assemblage differs noticeably from that found in the on-site vernal pools.

The applicant proposes to provide as mitigation a combination of preservation and restoration or creation of waters of the United States consistent with the mitigation recommendations inherent to the Agencies' Conceptual Strategy and Conceptual Preserve Map. The proposed project would otherwise comply with the ten principles and standards of the Conceptual Strategy where applicable.

Areas restored or created are expected to retain similar functions as wetland areas impacted in the project site, assuring no net loss of wetland acreage and functions as a result of the proposed project. The applicant would establish and maintain, in perpetuity, compensatory preserves containing 6.15 acres of created/restored wetland habitat at the Town Center mitigation site, 5.40 acres of waters of the United States (4.65 acres of which are considered protected vernal pool branchiopod habitat) at the on-site preserve area, and 6.9 acres of preserved vernal pool branchiopod habitat at the Town Center mitigation site. Because impacted special aquatic sites on the project site would be mitigated per direction from the Corps and USFWS, it is assumed they are adequately mitigated. Therefore, this impact is considered less than significant.

(X) Habitat for fish and other aquatic organisms: Wetland and vernal pool habitat for the federally listed vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardii*) would be affected by the proposed project.

The applicant proposes to mitigate impacts to aquatic habitats with on-site preservation of 5.4 acres of wetlands and vernal pools within the 68.1-acre preserve area and 6.9 acres of off-site preservation and creation or restoration of wetland and vernal pool habitat at the Town Center mitigation site. The off-site preserved habitat would be similar both geographically and hydrologically to those areas impacted, albeit at a location approximately four miles to the south southwest. Mitigation ratios for direct impacts to vernal pool branchiopod habitat are set at 1:1 for off-site creation and 2:1 for a combination of on-site and off-site preservation. Mitigation ratios for indirect impacts to vernal pool branchiopod habitat are set at 1:1 for off-site creation and 1:1 for a combination of on-site and off-site preservation. Finally, the preservation and creation/restoration sites would be maintained and preserved in perpetuity. The funding and management of these areas would provide environmental benefits in the form of habitat restoration, creation and preservation. Based upon available information, the Corps concludes that these measures will mitigate impacts of the proposed fill on aquatic habitat to a less than significant level.

(X) Wildlife habitat (breeding, cover, travel, general): The existing project site, being open land with herbaceous vegetation, provides foraging habitat for raptors

and other birds, small mammals, and reptiles. Because conversion of other land to similar habitat values is impractical, mitigation for loss of such habitat can only come in the form of preservation of similar habitats of similar or higher functional values. Impacts to these habitat types would be partially offset by the 68-acre on-site preserve and off-site preservation at the Town Center mitigation site. Although conversion of approximately 143 acres of open space would not be mitigated by on-site and off-site preservation of similar habitat, loss of this habitat is not a significant impact because of its relatively small area in relation to the total amount of such habitat in the region.

(X) Endangered or threatened species: Wetlands and vernal pools in the project area subject to fill are assumed by the applicant to hold the threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and the endangered vernal pool tadpole shrimp (*Lepidurus packardii*). The Service issued a no-jeopardy biological opinion (No. 1-1-05-F-0305), dated May 18, 2006, on the proposed fill activities for the Grantline 208 project. The Service concluded that the fill activities of the proposed project would not jeopardize the continued existence of the listed vernal pool crustaceans because mitigation proposed as part of the project, plus compliance with the agencies' Conceptual Strategy and Conceptual Preserve Map would offset impacts to listed species and their habitats. The Biological Opinion includes non-discretionary terms and conditions that require mitigation measures proposed by the applicant be implemented through the 404 permit, and the terms and conditions would be included as a condition of the any Department of the Army permit issued. Based on the conclusions of the no-jeopardy opinion, and the likelihood of success of planned mitigation, the permitted fill would not have significant impacts on endangered or threatened species, as mitigated.

(X) Biological availability of possible contaminants in dredged or fill material, considering hydrography in relation to known or anticipated sources of contaminants; results of previous testing of material from the vicinity of the project; known significant sources of persistent pesticides from land runoff or percolation; spill records for petroleum products or designated (Section 311 of the CWA) hazardous substances; other public records of significant introduction of contaminants from industries, municipalities, or other sources: According to the City of Rancho Cordova's MND, the project site has no known hazardous materials involvement. Additionally, although there is documented groundwater contamination in the plan area, the project does not include the use of on-site wells. Therefore, the potential for the project to result in exposure to the groundwater contamination is unlikely and this impact is not significant.

E. Human use characteristics and impacts:

(X) Existing and potential water supplies; water conservation: The project's water supply does not rely on wells due to documented local groundwater contamination precluding potable uses, instead relying on that provided by the local

water district. Therefore, the proposed project would result in an incremental draw on available water sources, but it is not expected to have an adverse effect on ultimate water supplies in the foreseeable future. It is also anticipated that in the absence of restrictive use covenants, the residents would be typical users of available water and effects on water conservation would be restricted to those imposed by local requirements, such as mandating low-flow showerhead and limited-capacity toilets, restricting landscaping and other outdoor water uses in duration or to certain hours of the day to minimize losses to runoff or evaporation. Impacts to existing and potential water supply or water conservation is determined to be less than significant.

( ) Recreational or commercial fisheries: No effect.

( ) Other water related recreation: No effect.

(X) Aesthetics of the aquatic ecosystem: Aquatic resources present on site are primarily shallow depressions that occasionally fill during periods of seasonal precipitation. The aesthetic values particular to these features, while small in area and of an ephemeral nature, still have a certain aesthetic benefit to those who are aware of their interesting ecology on the local and regional level, or simply appreciate seeing such features come and go through the seasons. However, impacts to these aesthetic qualities resulting from the proposed project are less than significant and would be adequately mitigated through consistency with the Conceptual Strategy and Conceptual Reserve.

( ) Parks, national and historic monuments, national seashores, wild and scenic rivers, and wilderness areas, research sites, etc.: No effect.

(X) Traffic/transportation patterns: Current traffic and transportation patterns in the area of the proposed project exhibit growth underway in Sacramento County. Potential traffic impacts were addressed in the Traffic Circulation Section of the Sunrise Douglas Community Plan and Sunridge Specific Plan (SDCP/SRSP) Master Environmental Impact Report (EIR). The SRSP would increase A.M. and P.M. peak-hours and daily-vehicle trips compared to existing traffic conditions. The SDCP/SRSP EIR identified traffic and circulation mitigation measures for development projects to adopt. The traffic impacts resulting from the Corps' action may be adverse but are considered less than significant when incorporating mitigation measures identified in the SDCP/SRSP. The information pertaining to traffic identified in the SDCP/SRSP is hereby incorporated by reference.

(X) Energy consumption or generation: Construction of the proposed project would require fuel energy for the heavy equipment utilized for grading and fill activities, and would require additional energy for construction, operation and maintenance of improvements. Following construction of homes on this property, there would be persistent and long-term consumption of energy by each home, collectively for

on-site infrastructure such as street lighting and traffic lights, continued use of vehicle fuels, etc. There is adequate regional energy capacity available to serve these future needs, and the project's impacts on energy consumption or generation are not significant.

( ) Navigation: No effect.

(X) Safety: The project would implement standard construction safety measures such that there is no potential for a significant adverse effect on safety beyond what is typically experienced by projects of this sort.

(X) Air quality: The proposed permit has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit will not exceed de minimis levels of direct emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit action.

(X) Noise: The project is not expected to generate substantial noise impacts given the mitigation measures implemented through the CEQA review process. In this case, land uses proposed on all portions of the applicant's project are expected to meet the County Noise Level Performance Standards and County Land Use Compatibility standards set by the County's General Plan Noise Element (Community Plan/Specific Plan EIR, pp. 12.9c). These indicators are a common threshold used for assessment of substantial noise impacts, and indicate the proposed project will not result in substantial noise impacts. Given the anticipated level of noise generation, the natural attenuation of sound over distance, and the distance to nearby sensitive receptors, it is expected that noise generated by this project would be less than significant.

(X) Historic properties (Section 106 National Historic Preservation Act): The project site does not appear to contain any sites listed, or eligible for listing, on the National Register of Historic Places. No previously recorded prehistoric or historic resources exist within the project site. Therefore, the proposed action is not expected to have any effect on historic properties.

(X) Land Use Classification: The proposed fill activity will occur in conjunction with construction of residential development on lands previously used for agricultural activities. These lands are located within the General Plan Urban Policy Area and are shown as new Urban Growth Area in the Sacramento County General Plan, indicating the County's intent to plan for the urbanization of this area within the



20-year time frame of the General Plan. Issuance of the Corps's permit would have no significant effect on land use classification in the project area.

(X) Economics: Construction associated with the project would create jobs and generate revenue for the local economy in the short term. In the long term, the project would partially address the growing housing demand in the Sacramento County area, thereby providing a longer-term benefit to the regional economy in a variety of ways directly and indirectly associated with residential development.

(X) Prime and unique farmland (7 CFR Part 658): The California Department of Conservation's Farmland Mapping and Monitoring Program designated the project site as grazing land and farmland of local importance, but not as prime or unique farmland. According to the City's MND, neither the "grazing lands" designation nor the "farmland of local importance" designation qualifies the project site as prime and unique farmland. Therefore, the project's impact on prime or unique farmland would be less than significant.

( ) Food and fiber production: No effect.

(X) General water quality: The proposed project would directly impact approximately 5.70 acres of waters of the United States, including 5.22 acres of vernal pools, 0.04 acre of depression seasonal wetland, 0.36 acre of riverine seasonal wetland, and 0.08 acre of ephemeral drainage. In addition to direct impacts, 0.45 acres vernal pools and seasonal wetlands located within the preserve have upland buffers of less than 250 feet and could be adversely indirectly affected by the surrounding development. Mass grading of the development area could contribute sediment to off-site receiving waters if not mitigated, and subsequent uses typical of residential development would likely indirectly contribute contaminants to receiving waters, including fertilizers, pesticides, herbicides, petroleum byproducts, and components thereof.

Pursuant to Section 401 of the Clean Water Act, the applicant has obtained a water quality certification from the Central Valley Regional Water Quality Control District, issued September 16, 2005 (File No. 5A34CR00222). The certification concluded that the proposed project's proposed sufficient measures adequately protect the identified beneficial uses of surrounding and downstream water courses. The applicant must also comply with all post-construction stormwater treatment requirements as set out in the City of Rancho Cordova's MS-4 permit and implement necessary water quality Best Management Practices to prevent substantial impacts to the water quality of surrounding and downstream areas.

(X) Mineral needs: The project site is not a commercial source of minerals. Construction of the project will necessitate the importation of aggregate, concrete, and

asphalt. These materials would likely be supplied locally. No negative impacts are expected and this projects impact on mineral needs would be less than significant.

(X) Consideration of private property: The project area is currently private property owned by the applicants. Issuance of a Department of the Army permit would not affect private property considerations and the effect is less than significant.

(X) Minority and Low Income Populations: The proposed action has been evaluated in accordance with Title VI of the Civil Rights Act and Executive Order 12898 regarding environmental justice populations. Impacts to the minority and low-income populations in the permit area will not be disproportionately high. Therefore, this impact would be less than significant.

( ) Other: None.

F. Summary of secondary and cumulative effects:

Federal regulations promulgated by the Council on Environmental Quality (CEQ) require federal agencies to assess the indirect impacts of federal actions in addition to the action's direct impacts. In this case, the federal action is authorization to fill 5.70 acres of waters of the United States for proposed residential development in Sacramento County, California. The land parcel to the east retains habitat types similar to the Grantline 208 project site, but is separated from the project site by a major roadway and indirect impacts to wetland and vernal pool habitats in that area are not considered further. Because lands to the north and south are within the approved Sunrise Douglas Community Plan/SunRidge Specific Plan area, similar habitats in these areas would be directly impacted and those areas are also not considered further. Furthermore, separate Section 7 consultations have been completed on lands adjacent to the project site and indirect impacts to these areas are expected to be addressed through those separate consultations.

In the USFWS Biological Opinion issued for the Grantline 208 project, the Service estimated that any jurisdictional wetland or vernal pool habitat within 250 feet of project development (an additional 0.45 acres of vernal pools and seasonal wetlands) would be indirectly impacted due to increased human presence, changes to site hydrology, or other newly created conditions. The Service addressed these additional 0.45 acres of indirect wetland impacts in its issuance of the no-jeopardy biological opinion for the proposed project, and concluded the Conservation Measures set out in the Biological Opinion would sufficiently offset direct and indirect impacts to wetland and vernal pool habitat.

CEQ regulations also require consideration of cumulative effects of an agency's action. Cumulative effects are the incremental effects of the agency's proposed action, and past,

present, and reasonably foreseeable future actions in the general locale of the agency's action. For analysis of cumulative impacts, the 1,345 acres of the SunRidge Specific Plan area provides the most appropriate subarea for assessment because the City of Rancho Santa Fe has completed the land use entitlement process for each of the projects within this area. Therefore, the proposed actions are reasonably well defined and the potential impacts are foreseeable. Moreover, each of the 404 permit applications pending in the SunRidge subarea are for geographically contiguous jurisdictional features and the permitted actions are planned to occur during the same approximate time frame. Because of the certainty of the land use entitlements, and the related geography and timing of the effects, it is reasonable to presume their cumulative effects are related.

The Conceptual Strategy and the analysis in the Regional Alternatives Information address potential cumulative effects to both aquatic and non-aquatic resources in the subarea. The collaborative effort of the Federal Agencies and the numerous participants in the Conceptual Strategy resulted in a plan to preserve wetlands and vernal pools in the area that collectively reduce adverse impacts to affected jurisdictional waters from almost 60 acres under the adopted Specific Plan to approximately 44 acres, while preserving 41.2% of vernal pool habitat within the Specific Plan area. Each project must demonstrate consistency with the Conceptual Strategy and incorporate mitigation that will ensure no net loss of wetlands. If participants satisfactorily address the intent of the Conceptual Strategy, it is estimated that more than 50% of the waters in the Community Planning Area would be protected under the conceptual preserve design, reducing adverse cumulative impacts compared to that initially proposed under the Specific Plan. This is consistent with the Mitigation Memorandum between the Corps and EPA that established the Corps' policy to require avoidance of impacts to special aquatic sites, minimization of unavoidable impacts, and finally mitigation for unavoidable impacts to such resources.

Other benefits of the Conceptual Strategy include identifying avoidance areas in a manner that minimizes edge-to-area ratios; coalescing individual projects' avoidance and minimization efforts into a regional reserve designed to connect to the previously approved and existing Anatolia Preserve, thereby increasing connectivity between project avoidance areas and connectivity to downstream wetlands and vernal pools; and creating intact corridors supporting the Morrison Creek and Laguna Creek watersheds and associated vernal pools in the Specific Plan area. The Conceptual Strategy also sets forth principles and standards for development of uplands surrounding the avoided wetlands and vernal pools that would reduce urban edge effects in these areas and promote long-term retention of wetland and vernal pool functions and values. Finally, the Conceptual Strategy areas require monitoring and management in perpetuity according to a preserve management plan to be submitted for Federal Agencies' approval. The measures specified in the Conceptual Strategy for the creation of a reserve according to the Conceptual Reserve map would avoid cumulatively significant impacts to jurisdictional wetlands and vernal pools within the Specific Plan area, but more

importantly would result in preservation of the functions and values of the remaining vernal pools, wetlands and other jurisdictional waters of the U.S. in the Community Planning Area.

The Sunrise Douglas Community Plan/Specific Plan EIR does not provide more than conceptual information on impacts to jurisdictional waters of the U.S. within the SunCreek area immediately to the south of the Sunridge Specific Plan area. However, several projects in this area are pending and are undergoing separate review. As noted above, the 1,345 acres of the Sunridge Specific Plan area provides the most appropriate subarea for assessment because the City of Rancho Cordova has completed the land use entitlement process for each of the projects within this area. The City has also prepared a draft Specific Plan for the SunCreek portion of the Community Plan area. The Corps and the City anticipate preparing a joint EIS/EIR for the SunCreek Specific Plan for development in this area, which would further consider potential cumulative effects. The NEPA and CEQA processes would likely identify and modify land uses in this area, including the potential creation of a jurisdictional wetland and vernal pool preserve within the SunCreek area. Subsequent applications for fill for projects within the Community Plan area would also be evaluated under NEPA.

Together, past measures taken to reduce impacts of the Sunrise Douglas Project, combined with measures specified in the Conceptual Strategy and Conceptual Preserve for the SunRidge Specific Plan area, substantially address adverse effects to jurisdictional wetland and vernal pool areas to ensure they are not cumulatively significant.

In addition to potential cumulative impacts to jurisdictional wetlands and vernal pools, the development of the Project, in conjunction with development of other projects recently publicly noticed within the Specific Plan area, may have cumulative impacts to other categories of the human environment as discussed in the County's Community Plan/Specific Plan EIR. The County identified mitigation measures through the EIR and incorporated land use planning policies within the Specific Plan that are designed to address cumulative impacts in these other categories including traffic, noise, air quality and groundwater levels. The mitigation measures in the City of Rancho Cordova's MND for the Sunridge East Properties, including the Grantline 208 Project, in addition to measures implemented by the County's adoption of the Sunrise Douglas Project EIS/EIR Mitigation and Monitoring Program, and future mitigation measures created for the SunCreek Specific Plan area, are anticipated to ensure reasonable treatment of these categories of cumulative impacts.

The proposed project would contribute to incremental regional suburban growth as identified in the County's 1993 General Plan. While this incremental addition is relatively small and could be considered minimal, it cannot be discounted.

### III. Findings:

- A. Other authorizations:
1. Water quality certification: The applicant obtained water quality certifications from the Central Valley Regional Water Quality Control Board on September 16, 2005, File No. 5A34CR00222. The 401 certification, including special conditions, are attached hereto as Appendix B.
  2. State and/or local authorizations (if issued): The California Department of Fish and Game (CDFG), pursuant to the State Fish and Game Code, issues Streambed Alteration Agreements if a proposed action alters habitats in certain situations related to rivers, streams, lakes and ponds. Prior to engaging in any work authorized by Department of the Army permit, the applicant is expected to inquire of the CDFG whether a streambed alteration agreement is necessary.
- B. A complete application for the Grantline 208 project was received on May 16, 2005. The Public Notice was issued on September 30, 2005, and the comment period closed on October 30, 2005.

#### 1. Comments Received and Responses to Comments

##### (a) Sierra Club

1. *PNs #199400365 and #200400458 will destroy directly and through indirect impacts some of the most important vernal pool grasslands left in our area. Both the South Sacramento Habitat Conservation Plan (currently being developed), and the recently issued Fish & Wildlife Service Draft Plan for vernal pool species recovery (Draft Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon, October 2004), acknowledge that the area proposed for development supports an unusually dense and diverse complex of vernal pools.*

The Corps acknowledges that the Grantline 208 project site is generally located within areas that would be covered by the South Sacramento Habitat Conservation Plan and are covered in the Recovery Plan for Vernal Pool Ecosystems. However, the Project would be implemented pursuant to standards established in the Agencies-approved *Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area* (Conceptual Strategy). As contemplated in the Conceptual Strategy, the 68-acre on-site

preserve proposed as part of the Grantline 208 Project would be part of a larger 161-acre vernal pool grassland habitat preserve. This preserve would include a substantial number of vernal pools and vernal pool complexes.

2. *Besides the numerous vernal-pool associated species, these grasslands support a wide variety of bird species of State and Federal Special Status that use this area for foraging and/or breeding at various seasons. Such species include: ferruginous hawk, Swainson's hawk, northern harrier, white-tailed kite, prairie falcon, merlin, long-billed curlew, burrowing owl, loggerhead shrike and tricolored blackbird.*

Comment noted. The Grantline 208 project would result in an incremental loss of habitats favored by such species for one or more essential phases of their respective life cycles. However, the incremental loss resulting from the Grantline 208 project is not significant because of its small areal impact in relation to remaining similar habitats available to these species in the immediate vicinity of the project and in the region. In addition, continued opportunity is made available to these species by preservation of more than 68 acres on the project site as well as additional preservation acreage made available at the Town Center mitigation site, which also prevents this area from being developed.

3. *The Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area is entirely inadequate for protection of vernal pool resources and for those bird species within the Sunrise-Douglas Plan Area. The small, narrow corridors proposed for preservation will sacrifice nearly all the import [sic] vernal pool resources and leave little or no habitat suitable for the other wildlife that use these grasslands.*

The block of vernal pool grassland habitat preserve at the Town Center mitigation site contemplated in the Conceptual Strategy for mitigation for the Grantline 208 project would consist of 161 contiguous acres of vernal pool grassland habitat, and would range from approximately 1,400 to 2,400 feet in width. This area would be managed and maintained in perpetuity specifically for the purpose of sustaining vernal pool resources. With ongoing protection and management, this preserve is expected to be of sufficient size to sustain a diversity of bird species and other wildlife that normally use vernal pool grasslands. It is also noted

that the Town Center mitigation site is immediately adjacent to the Sloughhouse Preserve, thus increasing the inherent function and value of the Town Center mitigation site. This contention is supported by the existence of the Phoenix Island preserve and other preserves smaller than 161 acres that continue to sustain rare and endangered vernal pool species as well as a diversity of other associated wildlife. The proposed project also includes preservation of approximately 68 acres on site to be managed in perpetuity. This avoidance area also contributes substantially to remaining regional resource functions and values within the Sunrise Douglas Community Plan area.

4. *These Public Notices are a continuation of a piecemeal permitting process for the Sunridge Specific Plan Area, which is in violation of the appropriate NEPA process. We request that a full Environmental Impact Statement be prepared, including a complete analysis of all the alternatives.*

Although the Grantline 208 project (PN #199400365) is within the larger 6,042-acre Sunrise Douglas Community Planning Area and the Sunridge Specific Plan area, the Grantline 208 project is a single and complete project with independent utility separate and apart from any other projects within the Sunridge Specific Plan Area.

We do not believe an EIS is warranted for the Grantline 208 Project. Under NEPA and its implementing regulations, a federal agency must review its proposed action to determine whether it will significantly affect the human environment. (42 U.S.C. § 4332(2)(c).) If, through this review, the agency concludes that the action will significantly affect the human environment, the agency must prepare an EIS for the action to analyze the environmental effects of the proposed action and possible alternatives that may have less adverse effects on the environment. If not, the agency may proceed with a finding of no significant impact. According to the Corps' regulations, "most permits normally will require only an Environmental Assessment." (33 C.F.R. § 230.7(a).) We believe this to be the case for the Grantline 208 Project; under the standards set by NEPA and its implementing regulations, the Grantline 208 Project's requested Section 404 permit would not require an EIS.

As part of its analysis, the Corps must review the effects of the proposed federal action to determine whether they cross the "significance" threshold for requiring an EIS. "Significance" of an environmental effect is a function both of context and intensity. (40 C.F.R. § 1508.27.) Under CEQ regulations, appropriate context of the analysis is the proposed 404 permit for the Grantline 208 Project, since the Project is a single and complete project with independent utility from other projects in the Specific Plan Area. In addition to context, the intensity of effects is a consideration set out in the CEQ regulations. Although significance thresholds may be surpassed due to direct, indirect or cumulative impacts of the proposed federal action, the Grantline 208 Project proposes mitigation that would reduce its direct and indirect impacts to aquatic resources to a level of less than significant. These mitigation measures comply with the Corps' no-net-loss policy for wetlands (Army Corps of Engineers Regulatory Guidance Letter 02-02, December 24, 2003) by establishing an approximately 68-acre on-site preserve and off-site preservation and creation/restoration at the Town Center mitigation site. Thus, direct and indirect impacts to aquatic resources due to the proposed Section 404 permit for the Grantline 208 Project are determined to be less than significant.

In summary, given the discussion above, the context and intensity of impacts from the proposed fill for the Grantline 208 Project do not surpass the significance threshold. The applicant has avoided and minimized impacts to aquatic resources on site by establishing a 68-acre preserve area, as well as proposed off-site creation and preservation mitigation at ratios that would achieve and surpass the Corps' policy of no net loss of wetland functions and value. The project applicant submitted his project to address the goals of the Conceptual Strategy designed to minimize impacts to wetlands and vernal pools Plan area-wide. These measures are sufficient to reduce impacts to wetlands on the Grantline 208 site to a level of less than significant. Thus, the Grantline 208 Project would not surpass NEPA's significance threshold, and no EIS is required.

This comports with the conclusion of the County's final EIR for the Specific Plan area. The County of Sacramento evaluated development within the Sunrise Douglas Community Planning Area and the Sunridge Specific Plan Area in an EIR certified by the County in June 2002 pursuant to CEQA. This EIR was



designated a "master" or tiered EIR intended to provide a detailed environmental review of plans and programs upon which the approval of subsequent related development proposals could be based. In addition, the Sunridge East Projects, which include Grantline 208, were further evaluated in a mitigated negative declaration certified by the City of Rancho Cordova in March 2006, also pursuant to CEQA.

State environmental review documents, such as the Sunrise Douglas Community Planning Area and Sunridge Specific Plan Area Environmental Impact Report and the Sunridge East Projects Mitigated Negative Declaration, can be utilized by the Corps and other federal agencies to assist in their environmental review of a project. Both the CEQ NEPA Regulations and the Corps' NEPA Regulations contemplate this cooperation between state and federal agencies to reduce duplicative procedures between NEPA and comparable State and local requirements. 40 C.F.R. § 1506.2; 33 C.F.R. Pt. 325, App. B § 4.

(b) California Native Plant Society

1. *PNs #199400365 and #200400458 will destroy 19.52 acres of wetlands. Of this 11.70 acres are vernal pool associated wetlands (vernal pools, swales, seasonal wetlands). These projects will also indirectly impact the 8.68 acres of vernal pool associated wetlands proposed for onsite preservation. Indirect impacts include edge effect, habitat fragmentation, loss of watershed, increased vectors for invasive species, residential use of pesticides, predation by pets, etc.*

The Grantline 208 project (PN #199400365), specifically, will result in direct loss of 5.7 acres of wetlands, 5.55 acres of which are vernal pool associated. Consistent with U.S. Fish and Wildlife Service standards, indirect impacts have been determined for all vernal pools within 250 feet of proposed development. Based on this assessment, 0.45 acres of vernal pool habitat would be indirectly impacted by the Grantline 208 project. However, the on-site preserve and nearby off-site preserves would be managed and maintained in perpetuity to prevent the spread of invasive species, effects of pesticide drift, encroachment by pets, and other such adverse indirect effects on these mitigation areas. This is a reasonable response to address anticipated adverse effects such as you raise in your comment.

2. *A county-wide assessment of vernal pools, done in support of the South Sacramento Habitat Conservation Plan which is currently being developed, shows that the high concentrations and diversity of vernal pools in the Sunrise-Douglas area is rare. This area hosts numerous endangered and species status species. It is also almost entirely within a priority-one core recovery unit (Draft Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon, October 2004).*

The Corps acknowledges that the Grantline 208 project site is within a priority-one core recovery area and is identified in the county-wide assessment for the South Sacramento Habitat Conservation Plan (South Sac HCP) as an area of high conservation value. The project has been designed in recognition of the biological importance of this area, providing preservation and long-term management of approximately 1/3 of the project site to protect vernal pools and surrounding grasslands. The on-site preserve was designed as part of the Conceptual Strategy, which was developed by the Corps, the USFWS, and the EPA in coordination with landowners and other stakeholders within the Sunrise-Douglas Community Plan Area. Consistent with the Conceptual Strategy, the Grantline 208 provides a vernal pool preserve that is contiguous with proposed preserves to the north, on the Douglas 103 and Sunridge Park properties, and to the south, on the Arista del Sol property. These preserves will collectively protect a contiguous block of approximately 161 acres vernal pool grassland habitat (referred to as the "Eastern Preserve") within a priority-one core recovery area for vernal pools, thus contributing to recovery of the listed vernal pool species and contributing to a viable regional preserve system for the South Sac HCP.

3. *The Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area is entirely inadequate for protection of vernal pool resources within the Sunrise-Douglas Plan Area. Vast amounts of extremely high quality and high density vernal pools are being sacrificed for narrow, stream-corridor associated preserves. The preserve design does not follow most of the principals [sic] of conservation biology.*

See response to comment 1(a)(3) above. The Conceptual Strategy provides a means by which an applicant receives initial guidance from the three federal agencies (Corps, USFWS and EPA) that have the most direct input on his proposed project, and with such

forewarning can design his project to avoid and minimize impacts to aquatic resources present on the project site, and develop a mitigation scenario to further offset unavoidable project impacts and achieve a level of no net loss of wetlands. This is entirely consistent with the Mitigation Memorandum between the Corps and EPA that established the Corps' policy to require avoidance of impacts to special aquatic sites, minimization of unavoidable impacts, and finally mitigation for unavoidable impacts to such resources. Alternatively, each applicant could simply ignore the Strategy and propose full buildout of the project area and take his chances with the Regulatory process, eventually providing an alternatives analysis that would likely include one or more alternatives similar to a project otherwise submitted after consideration of project design following the Strategy. In other words, the Conceptual Strategy provides a framework within which the developers understand up front what the federal agencies would likely expect of their project to enable them to potentially save time and expenses. Furthermore, the preserve design does follow basic principals of conservation biology by preserving a large, contiguous block of habitat and minimizing edge effects to the extent practicable. It is intended to ultimately mitigate impacts to wetlands throughout the Plan area to a level of less than significant.

4. *The preserve design will allow the take of 63.49% of the unique and irreplaceable vernal pool grasslands of the Sunrise-Douglas area.*

The Grantline 208 project would preserve approximately 1/3 of the vernal pool grasslands on site, and would provide for management and monitoring in perpetuity to sustain its long-term viability. The project would also preserve 6.90 acres of vernal pools off site in an area that harbors vernal pool and wetland resources of similar function and value, and would restore and/or create an additional 6.00 acres of vernal pool habitat off site in a mitigation site of substantial area. These off-site mitigation lands would also be managed and maintained in perpetuity to sustain long-term conservation value. The on-site and off-site preservation are anticipated to adequately mitigate vernal pool losses resulting from the proposed project.

5. *The two public notices referenced above are part of a piecemealed permitting process for the Sunridge Specific Plan Area that began with PN #200000336. In March 2004, the USACE received hundreds of*

letters from concerned citizens urging them to prepare a full Environmental Impact Statement as required under the National Environmental Policy Act (NEPA) and a full Least Environmentally Damaging Practicable Alternative (LEDPA) analysis as required by the Clean Water Act for the Sunridge Specific Plan Area. Since PNs #199400365 and #200400458 are part of the Sunridge Specific Plan Area, all comment letters received by the USACE pertaining to PN #200000336 are hereby incorporated by reference.

See response to comment 1(a)(4) above. The Grantline 208 project is a single and complete project with independent utility. The Conceptual Strategy was determined by the Corps, USFWS and EPA to confirm that its development and preserve strategy provided for reasonable avoidance and minimization of impacts to jurisdictional aquatic resources in the Sunrise Douglas Community Plan area while addressing proposals for development in the planning area. This analysis is reflected in the *Regional Alternatives Information, SunRidge Specific Plan Subarea*, adopted in concept by the Corps, USFWS and EPA as demonstrating that the Conceptual Strategy complies with the intent of the Section 404(b)(1) Guidelines. The project applicant later provided the Corps with a subsequent alternatives analysis for the Grantline 208 project to supplement the Conceptual Strategy and the Regional Alternatives Analysis. This supplemental analysis assessed four on-site alternatives and also concluded that the proposed Grantline 208 project complies with the requirements of the Section 404(b)(1) Guidelines within the context of the Conceptual Strategy and Regional Alternatives Analysis, and is thus the LEDPA.

Public Notice #20000336 includes the following projects: DJ Enterprises 200100448, North Douglas 199400218, North Douglas 2 199400529, Anatolia IV 199400210), and Douglas Road 98 200200568). The Grantline 208 project (PN #199400365) is not included in PN #200000336. Comment letters pertaining to PN #200000336 may or may not apply to the Grantline 208 project, and thus those comment letters cannot simply be incorporated en masse by reference.

6. *I believe that the USACE is in violation of NEPA by evaluating these applications as individual projects. This piecemeal approach ignores the significant cumulative effects of the two projects referenced in PNs*

*#199400365 and #200400458 and the five projects referenced in PN #200000336.*

See response to comment 1(a)(4) above. The Grantline 208 project is a single and complete project with independent utility.

Together, the impacts of the proposed Section 404 permit for the Grantline 208 Project (PN #199400365) and the other projects identified in PN #200400458 and 200000336 do not have cumulatively significant impacts. Each applicant for these and other projects in the area must proceed through the Corps' regulatory framework for permitting fill to jurisdictional waters. This process ensures that (a) all authorized impacts would be the least environmentally damaging practicable alternative, as specified in the Section 404(b)(1) Guidelines, and (2) any permitted impacts to aquatic resources, particularly wetlands and vernal pools, would be adequately mitigated to ensure adherence to the Corps' no-net-loss policy. In addition, each project is expected to address the inherent goals of the Conceptual Strategy, determined by the Corps, USFWS and EPA to confirm that its development and preserve strategy provides for reasonable avoidance and minimization of impacts to jurisdictional aquatic resources in the Sunrise Douglas Community Plan area while addressing proposals for development in the planning area. We believe these measures are sufficient to ensure cumulative impacts from other Section 404-permitted activities within the Specific Plan Area would not reach the significance threshold.

Furthermore, cumulative effects associated with development in the Sunridge Specific Plan Area, which includes development associated with the projects identified in the PNs referenced above, were evaluated in the Regional Alternatives Analysis. The Regional Alternatives Analysis determined that the "collective effort of the agencies and applicants has resulted in a development and preservation plan that minimizes the cumulative effect of their respective project impacts on the aquatic ecosystems in the region." As described in the Regional Alternatives Analysis, implementation of the Conceptual Strategy is intended to ensure the proposed impacts to jurisdictional waters within the Grantline 208 project area would not individually or collectively result in significant adverse cumulative effects to wetlands and endangered species habitat in the region.

7. As I and many, many others wrote in comments related to PN #200000336, again I urge the USACE and other regulators to:

- *Require a full Environmental Impact Statement from the applicants.*

See response to comment 1(a)(4) and 1(b)(5) above.

- *Insist on a complete analysis of all the alternatives to this development plan.*

See responses to comment 1(a)(4) and 1(b)(6) above. A reasonable range of alternatives was evaluated in the County's and City's evaluations of development in the Sunrise Douglas Community Plan Area and the Sunridge Specific Plan Area, in the Corps' Regional Alternatives Analysis, and in the project applicant's supplemental alternatives analysis for Grantline 208.

- *Suspend consultations with the U.S. Fish and Wildlife Service on endangered species, until these steps are taken.*

The Service issued its Biological Opinion for Grantline 208 on May 18, 2006. The Corps is statutorily required to consult with the USFWS and National Marine Fisheries Service when, in its review of a proposed permit action, determines that the action may affect a species listed as threatened or endangered, or if the action may adversely modify designated critical habitat for such a species, or conference with the Services if it is determined that a proposed permit action may affect a species proposed for listing as threatened or endangered, or adversely modify habitat proposed for designation as critical habitat for a listed species. Unilateral suspension of consultations would be extraordinary.

- *Hold public hearings.*

The Public Notice for Grantline 208 was issued on September 30, 2005, and the comment period closed on October 30, 2005. It was determined that a public hearing was not warranted because insufficient reason was provided to indicate a hearing would provide more substantive information than was already provided in the written comments received.

(c) Citizen's Committee to Complete the Refuge (responding to PN #199400365, Grantline 208; PN # 200400458, Arista del Sol; and PN 200400707 Sunridge Village)

1. *We have reviewed the public notices listed above and urge the Corps to deny the proposed permit applications. The Corps must not proceed with the permit process for any of the projects proposed until a comprehensive Environmental Impact Statement (EIS) has been prepared that fully analyzes less-damaging alternative, assesses the full extent of impacts, direct and indirect, both individually and cumulatively to the Sunrise Douglas Community Plan area, critically reviews mitigation proposed, and considers all public interest factors. Given the environmental significance of the area and the magnitude of impacts proposed, doing anything less would be a serious violation of the Corps' Section 404 Clean Water Act regulatory responsibility.*

See response to comment 1(a)(4) and 1(b)(5) above. A reasonable range of alternatives was evaluated in the County's and City's evaluations of development in the Sunrise Douglas Community Plan Area and the Sunridge Specific Plan Area, in the Corps' Regional Alternatives Analysis, and in the project applicant's supplemental alternatives analysis for Grantline 208.

2. *Piecemealing: In February 2004, the Sacramento District released PN 200000336 for five projects located within the Sun Ridge Specific Plan area. At that time it was reported Sacramento County's Final Environmental Impact Report of the Sunrise Douglas Community Plan states that approximately 203 acres of wetlands could be impacted from the full development of the Sunrise Community Plan area. However, the Corps has continued to review the impacts to the unique and important Sunrise Douglas ecosystem project by project without adequately addressing the interconnections between these projects. It is imperative the impacts of all these related projects are considered in concert, and not in piece-meal fashion. The projects described in PNs 199400365 and PN #200400458 may have different applications, but it is clear from the figures provided these developments are completely interconnected by infrastructure. They share common streets and drainage corridors, a common detention basin/park and school. PN #200400707 is immediately adjacent to these two proposed project and through the figure of the proposed development is difficult to read we assume this project shares infrastructure with the others. This would hold true for projects mentioned in PN 200000336 and those reviewed since. Reviewing these projects as separate is a blatant example of piecemealing.*

See response to comment 1(a)(4), 1(b)(5) and (6) above.

3. *Ecological Importance of the Sunrise Douglas Area:* As we stated in our response to PN 200000336 in April of 2004, California has lost over 90% of its vernal pool habitat, and that which remains is often reduced in size, and ecologically disconnected, jeopardizing the long-term viability of this important habitat type. It is for this reason the vernal pool complex of the Sunrise Douglas Community Plan area should be considered an Aquatic Resource of National Importance (ARNI). The soils, for the most part, are intact. The vernal pools of the 6,000-acre Sunrise Douglas Community Plan area exist as a large relatively intact complex. The pools are hydrologically and ecologically connected, making this an important and unique resource.

Aquatic Resources of National Importance ("ARNI") have not been statutorily defined. Under the 1992 Memorandum of Agreement with the Army Corps under Section 404(q) of the Clean Water Act, the EPA would make an initial determination that a proposed fill may affect an ARNI. The Corps would then follow established procedures to discuss the matter with the EPA before making any final permit decision. This did not occur with the Grantline 208 permit review. The Corps does not deny the value of the aquatic resources present in the Sunrise Douglas area. However, without a formal determination on the part of the EPA that the proposed fill would affect an ARNI, the Corps is not precluded from issuing a Department of the Army permit for the proposed project.

4. *The vernal pools within the Sun Ridge Specific Plan area support the federally-listed endangered Sacramento Orcutt grass (Orcuttia viscida), the federally-listed threatened slender Orcutt grass (Orcuttia tenuis), the federally-listed threatened vernal pool fairy shrimp (Branchinecta lynchi), and the federally-listed endangered vernal pool tadpole shrimp (Lepidurus packardii). The vernal pools may also support the federally-listed California tiger salamander (Amystoma californiense). The vernal pools support the state-listed Bogg's Lake hedge hyssop (Gratiola heterosepala), and the two Orcutt grasses listed above. In addition, the vernal pools support a number of plant species considered to be rare in occurrence. The Sunrise Douglas Community Plan area is almost entirely within a priority-one core recovery unit (Draft Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon, October 2004).*



In the Grantline 208 Biological Opinion, the Service states that the proposed Grantline 208 project site and the entire Sunridge Specific Plan are outside of the range of the California tiger salamander. The Service further states that surveys conducted on the proposed project site in October 2003 and August 2004 did not indicate presence of slender Orcutt grass or Sacramento Orcutt grass. The Service concluded that the Grantline 208 project would not affect California tiger salamander, slender Orcutt grass, or Sacramento Orcutt grass. Bogg's Lake hedge hyssop was not observed during botanical surveys on the Grantline 208 project site. Vernal pool fairy shrimp and vernal pool tadpole shrimp are present in the vernal pools that would be impacted by the proposed project, but impacts to these federally listed species were addressed in a Biological Opinion completed by the Service on May 18, 2006. Regarding the site being within a priority-one recovery unit, see response to comment 1(b)(2) above.

5. *PNs #199400365, 200400458 and 200400707 will destroy 34.06 acres of wetlands, of this over 23 acres are vernal pool associated wetlands (vernal pools, swales, seasonal wetlands). These projects will also indirectly impact an unknown acreage of existing vernal pool associated wetlands proposed for onsite preservation. Indirect impacts include edge effect, habitat fragmentation, loss of watershed, increased vectors for invasive species, residential use of pesticides, predation by pets, etc.*

See response to comments 1(a)(3), 1(b)(3) and (4) above.

6. *The proposed project is clearly not "water dependent," therefore under the 404(b)(1) Guidelines (40 CFR 230.10) the applicants must rebut the presumption that a practicable alternative exists that is less environmentally damaging. . . . There is no indication the applicants of the proposed projects have made any attempts to minimize the adverse impacts of their proposals. In fact, PN 200400707 states the "applicants proposed project is not consistent with the preserve strategy developed by the agencies (the Corps, U.S. Fish and Wildlife Service, and U.S. Environmental Protection Agency). In particular, a key component of the agencies' alternative was the preservation of Morrison Creek in its existing alignment." PNs 199400365 and 200400458 state the projects appear to be consistent with the "Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area." However, this does not adequately insure the adverse impacts have in fact been minimized to the*

*extent possible and that the projects as proposed represent the least environmentally damaging practicable alternatives.*

The Grantline 208 project is located within the Sunridge Specific Plan area, for which an overall Section 404(b)(1) alternative analysis (the applicant's Regional Alternatives Analysis) was prepared. That analysis concluded that there are no practicable alternatives to the Sunridge Specific Plan Area Projects. The Corps notes that it was prepared at the applicant's behest, and as such the Corps must diligently assess whether the analysis appropriately weighs appropriate criteria when drawing its conclusions. Generally, it is reasonable to compare proposed projects in a given location or study area, such as the Sunridge Specific Plan area, with available potential properties available in the region. Selection criteria typically would include availability of other parcels under consideration (i.e., Is the parcel already under other development proposals? Does the parcel have a willing seller, either another developer or other private or public owner?), appropriate size of available parcels, location in relation to cities and/or regional infrastructure, presence or absence of existing infrastructure (transportation, utilities, water availability, etc.) in relatively close proximity to the parcel, presence or absence of other factors similar to those present on the proposed project site (i.e., Does the parcel have environmental constraints similar or greater to the proposed project site, such that it should probably not be assessed further?), as well as general economic considerations best analyzed by the applicant. Other parcels within the Specific Plan Area are not available because they are all under consideration for development, and the applicant determined there are no other off-site locations that could achieve the project purpose, be implemented in a timely manner or result in significantly less environmental impacts.

Between 2002 and 2004, several meetings were held with the Service in an attempt to agree on the size and location of the proposed on-site preserve. In total, eight preserve alternatives were considered; however, only six were fully evaluated. The no-action and total-fill alternatives were rejected early in the process as they did not meet the project goal of achieving the basic LEDPA criteria. The no-action alternative was rejected because it would not result in a viable project and the latter because there are demonstrated alternatives with lesser adverse environmental impacts.

A supplemental Section 404(b)(1) alternatives analysis was prepared that focused on on-site alternatives to minimize wetland impacts because the overall Regional Alternatives Analysis for Sunridge Specific Plan concluded there were no practicable off-site alternatives to the projects already under consideration in the Sunridge Specific Plan Area. The projects evaluated in the applicant's 404(b)(1) supplemental alternatives analysis included the applicant's proposed project: development of approximately 130.6 acres of residential, park, parkway, school, and detention basin use, 4.8 acres of major roads, 7.2 acres of drainage basin, and 68.1 acres of wetland preserve. This supplemental alternatives analysis also assessed the no-action alternative that would potentially be implemented if the Corps were to deny the applicant's permit request. To avoid direct and indirect impacts to wetlands, the no-action alternative would require avoidance of all waters of the U.S. If one were to include the USFWS's preferred buffer of 250 feet around all vernal pools and seasonal wetlands capable of harboring listed vernal pool crustacean species, this would require avoidance of 165.9 acres of the 210.7 acres comprising the project site. The remaining potentially developable acreage would be further constrained by the size and pattern of the wetlands across the site. The applicant also evaluated the no-action alternative with a 50-foot buffer. This analysis yielded a remaining net developable acreage (excluding 4.8 acres of major roads and 134.7 acres of open space) of approximately 71.2 acres, resulting in linear, convoluted, or fragmented lands that would be logistically inefficient to develop. Both buffer sizes would result in a no-action alternative that would not leave sufficient contiguous land to feasibly construct a residential development. In considering alternatives that would avoid all jurisdictional waters, the applicant also considered the absence of a drainage basin along Grantline Road, which was determined necessary to manage stormwater runoff from drainages east of Grantline Road, as well as the use of bridges and Conspan-type structures to avoid fill of waters to connect portions of the development. However, issues of maintaining safe and efficient circulation patterns still remained. The inability to locate a drainage basin along Grantline Road and to design an efficient circulation pattern made this alternative logistically infeasible and therefore not a practicable alternative.

The supplemental 404(b)(1) alternatives analysis for the Grantline 208 Project also focused on other on-site alternatives designed to minimize wetland impacts. The applicant determined that with respect to the other partial avoidance alternative, in order to maintain a sufficiently large open space preserve area, the amount of developable acreage remaining after avoidance would be substantially decreased and would render the alternative infeasible. Constraints related to this alternative, including the location of detention basins and efficient internal circulation would preclude the alternatives' ability to satisfy the applicant's logistical criteria. Finally, each of the avoidance alternatives would result in isolated preserves or unconnected avoided areas minimizing their ecological contribution to the regional resource values, and would run counter to the intentions of the Conceptual Strategy. With respect to the full impact alternative, this alternative would likely not receive authorization because the Applicant already demonstrated a viable alternative with lesser adverse environmental impacts. The proposed alternative met the project purpose, logistics, costs, and environmental criterion. It retains adequate developable area while providing for safe and efficient internal circulation, and connection to regional roadways. The wetland preserve on the western portion of the Project Site provides sufficient avoidance and connectivity to other open space areas with similar habitats and similar functions and values to ensure the Project is consistent with the regional preservation of wetland and vernal pool habitat within the Specific Plan pursuant to the Conceptual Strategy.

7. Compensatory Mitigation Inadequate: *The compensatory mitigation proposed for PNs 199400365, 200400458, and 2004707 given the quality of the resources what would be impacted by the proposed project are wholly inadequate. The 1:1 and 2:1 preservation ratios proposed for direct impacts will not insure wetlands functions and values are replaced. The extent of indirect impacts has not even been quantified. It is extremely important to create large, connected reserves within the community plan area that are surrounded by sufficient uplands to preserve the necessary hydrology, to maintain community diversity, and to buffer the adverse effects of human disturbance (physical – invasive plant introductions, non-native predators, etc., and chemical – run-off from landscaped areas, streets, etc.). The proposed preserve plan for the community plan area will not, and as designed, could not be expected to achieve these goals.*

See response to comments 1(a)(3) and 1(b)(3) above. Preservation and active management of vernal pools can increase the long term value of the preserved pools over their baseline conditions by correcting practices that may be counter to the pools' best interests. This assumption is reflected in Regulatory Guidance Letter 02-02, which recognizes that preservation can provide practicable long-term ecological benefits. Functional assessment models have been developed elsewhere for other depressional wetland habitat types that recognize the potential to increase wetland functions resulting from habitat preservation and management (see *A Regional Guidebook for Applying the Hydrogeomorphic Approach to Assessing Wetland Functions of Intermontane Prairie Pothole Wetlands in the Northern Rocky Mountains*). The increase in functions and values resulting from the preservation and management of 12.3 acres of vernal pools and associated wetlands (5.4 acres on-site and 6.9 acres offsite) will augment the 6.0 acres of created vernal pools and seasonal wetlands such that the aggregate amount of mitigation would result in no net loss of aquatic functions and values.

8. *Need for an EIS:* An EIS is needed if the proposed federal action (issuance of 404 permits) has the potential to "significantly affect the quality of the human environment."

See response to comment 1(a)(4) and 1(b)(5) above.

9. *Need to suspend Endangered Species Consultation:* Since the proposed projects are part of a larger whole (Sunrise Douglas Community Plan area) Section 7 consultation should be suspended to avoid piecemealing the endangered species review.

The Service issued its Biological Opinion for Grantline 208 on May 18, 2006. The Corps is statutorily required to consult with the USFWS and National Marine Fisheries Service when, in its review of a proposed permit action, determines the action may affect a species listed as threatened or endangered, or if the action may adversely modify designated critical habitat for such a species, or conference with the Services if it is determined that a proposed permit action may affect a species proposed for listing as threatened or endangered, or adversely modify habitat proposed for designation as critical habitat for a listed species. Unilateral suspension of consultations would be extraordinary. We note that the Service has actively participated in interagency discussions

regarding appropriate means by which to avoid, minimize and mitigate impacts to listed species in the Sunridge Specific Plan area, and has provided several non-jeopardy biological opinions with non-discretionary terms and conditions for the proposed project and other projects in the immediate vicinity. This is a reflection of their support for and active participation in the development of the Conceptual-Level Strategy for Avoiding, Minimizing and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area, dated June 2004. Therefore, we disagree that suspension of consultations is warranted.

10. *We urge the Corps to . . . hold public hearings.*

The Public Notice for Grantline 208 was issued on September 30, 2005, and the comment period closed on October 30, 2005. It was determined that a public hearing was not warranted because insufficient reason was provided to indicate a hearing would provide more substantive information than was already provided in the written comments received.

(d) US Environmental Protection Agency (commenting on PN 19900365 Grantline 208 and PN 200400458 Arista del Sol).

*As compensatory mitigation for unavoidable impacts, the applicant proposes to mitigate for impacts to wetlands and endangered species through restoration or creation at a 1:1 ratio at Silva Ranch. Direct impacts to vernal pool crustacean habitat would be mitigated through preservation at a 2:1 ratio at Bryte Ranch or another agency-approved location. The applicants propose to mitigate indirect impacts to vernal pool crustacean habitat within 250 feet of the proposed development through preservation at a 2:1 ratio. These compensatory mitigation ratios are within the acceptable range for the project impacts.*

Comment noted.

*The PNs describe the establishment of on-site wetland preserves encompassing 68 acres at Grantline 208 and 41.1 acres at Arista del Sol. This is consistent with the Strategy and the preserve map of the parcels within the SDCPA. As part of the Strategy, we recommend a comprehensive approach for managing the preserves with a single conservation easement holder and one unified management and monitoring plan. These stewardship arrangements should be placed as special conditions of the federal permit.*

Comment noted.

- a. Evaluation of Compliance with Section 404(b)(1) guideline restrictions on discharge, 40 CFR 230.10). (A check in a block denoted by an asterisk indicates that the project does not comply with the guidelines.):

1) Alternatives test:

Yes \* No X i) Based on the discussion in II B, are there available, practicable alternatives having less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharges into "waters of the United States" or at other locations within these waters?

Yes X No \* ii) Based on II B, if the project is in a special aquatic site and is not water dependent, has the applicant clearly demonstrated that there are no practicable alternative sites available?

2) Special restrictions. Will the discharge:

Yes \* No X i) Violate state water quality standards?

Yes \* No X ii) Violate toxic effluent standards (under Section 307 of the Act)?

Yes \* No X iii) Jeopardize endangered or threatened species or their critical habitat?

Yes \* No X iv) Violate standards set by the Department of Commerce to protect marine sanctuaries?

Yes X No \* v) Evaluation of the information in II C and D above indicates that the proposed discharge material meets testing exclusion criteria for the following reason(s).

(X) based on the above information, the material is not a carrier of contaminants.

( ) the levels of contaminants are substantially similar at the extraction and disposal sites and the discharge is not likely to result in degradation of the disposal site and pollutants will not be transported to less contaminated areas.

( ) acceptable constraints are available and will be implemented to reduce contamination to acceptable levels within the disposal site and prevent contaminants from being transported beyond the boundaries of the disposal site.

3) Other restrictions. Will the discharge contribute to significant degradation of "waters of the United States" through adverse impacts to:

Yes \* No X i) Human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife, and special aquatic sites?

Yes \* No X ii) Life states of aquatic life and other wildlife?

Yes \* No X iii) Diversity, productivity and stability of the aquatic ecosystem, such as loss of fish or wildlife habitat, or loss of the capacity of wetlands to assimilate nutrients, purify water or reduce wave energy?

Yes \* No X iv) Recreational, aesthetic and economic values?

4) Actions to minimize potential adverse impacts (mitigation).

Yes X No \* Will all appropriate and practicable steps (40 CFR 230.70 – 77) be taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystems?

Refer to Section II(b)(4) for special conditions.

b. General Evaluation [33 CFR 320.4 (a)]:

- 1) *The relative extent of the public and private need for the proposed work.* The proposed project would address a public need for housing opportunities in the greater Sacramento area that has a recognized existing housing shortage. It would also allow the project proponent to realize a financial gain on its owned property and on time and monies already spent bringing this project through the planning process.
- 2) *The practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work.* Alternative sites were considered, however these sites were found to be impracticable as discussed in IV.B. above due to logistics, because they had similar or greater environmental impacts, or other reasons. The proposed project would be implemented under the provisions set forth in the Conceptual Strategy and Conceptual Reserve Map, minimizing impacts to sensitive aquatic resources present on the Grantline 208 project site.



- 3) *The extent and permanence of the beneficial and/or detrimental effects the proposed structures or work may have on the public and private uses to which the area is suited.* The loss of 5.0 acres of waters in the project area would be permanent and detrimental. The mitigation proposed by the applicant is also anticipated to be permanent, with dedication of a conservation easement or other appropriate legal instruments over the mitigation areas. As identified in the County's and City's various CEQA documents, the area has been designated for urban residential development as it is proximate to regional job centers and transportation. Permitted fill would have a beneficial effect on meeting housing demand, and on the public and private uses for which this area has been designated through the County's and City's zoning and land use designations. It is anticipated that it would constitute a beneficial contribution to the local and regional economy.

c. Significant National Issues: None.

2. Determinations:

a. Finding of No Significant Impact (FONSI) (33 CFR Part 325). Having reviewed the information provided by the applicant, all interested parties and the assessment of environmental impacts contained in Part II of this document, I find that this permit action will not have a significant impact on the quality of the human environment. Therefore, an Environmental Impact Statement will not be required.

b. Section 404(b)(1) Compliance/Non-compliance Review (40 CFR 230.12).

( ) The discharge complies with the guidelines.

(X) The discharge complies with the guidelines, with the inclusion of the appropriate and practicable conditions listed above (in II.B.4) to minimize pollution or adverse effects to the affected ecosystem.

( ) The discharge fails to comply with the requirements of these guidelines because:

( ) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem and that alternative does not have other significant adverse environmental consequences.

( ) The proposed discharge will result in significant degradation of the aquatic ecosystem under 40 CFR 230.10(b) or (c).

( ) The discharge does not include all appropriate and practicable measure to minimize potential harm to the aquatic ecosystem; namely...

( ) There is not sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with the guidelines.

c. Section 176(c) of the Clean Air Act: I have analyzed the proposed project for conformity applicability and determined that the proposed activities in this permit action will not exceed *de minimis* levels of direct emissions of a criteria pollutant or its precursors, and are exempt by 40 CFR 93.152. Any later indirect emissions generally cannot be practicably controlled by the Corps of Engineers and, for these reasons the permit decision does not require a conformity determination.

d. Public interest determination: I find that issuance of a Department of the Army permit (with special conditions), as prescribed by regulations published in 33 CFR Parts 320 330, and 40 CFR Part 230 is not contrary to the public interest.

PREPARED BY:

DATE: \_\_\_\_\_

William Ness

Chief, Sacramento County Office

APPROVED BY:

DATE: 25 Oct 06

  
Kevin Roukey

Chief, Central California/Nevada Section

Department of the Army Permit Evaluation  
and Decision Document

Applicant: Douglas Road 98  
Application No.: 200200568

This document constitutes my Environmental Assessment, Statement of Findings and review and compliance determination according to the Section 404(b)(1) guidelines for the proposed work initially described in the attached Public Notice (Appendix A) as Douglas Road 98 (Application No.200200568).

Additionally, the Corps incorporates by reference the following documents: 1) Action on Request for Clean Water Act Section 401 Water Quality Certification for Discharge of Dredged and/or Fill Materials for the Douglas Road 98 Project, (WDID# 5A34CR00184) Sacramento County (Appendix B); 2) List of Form Comment Letter Authors to Public Notice # 200000336 (Appendix C); 3) Section 3.0, Environmental Setting, Impacts, and Mitigation Measures of the July 2005, Mitigated Negative Declaration for the Sunridge East Projects (Appendix D); 4) November 2004 Regional Alternatives Information SunRidge Specific Plan Subarea, Sacramento County, California (Appendix E); 5) January 14, 2005, Clean Water Act Section 404(b)(1) Alternatives Analysis and On-site Minimization Measures, Sunridge Property: Douglas (Appendix F); 6) September 2005, Supplemental Alternatives Submittal, Douglas Road 98, Sunridge Specific Plan (Appendix G).

I. Proposed Project: The proposed project is located within the SunRidge Specific Plan Area, which is within the larger Sunrise Douglas Community Plan Area, in Section 10, Township 8 North, Range 7 East, on the U.S.G.S. Buffalo Creek 7.5 quadrangle in Sacramento County, California. The maps of the site and the description of the proposed work are in the attached Public Notice, and further described below.

The project would consist of filling all 3.91 acres of waters of the U.S. on the property to construct 693 homes (approximately 85.5 acres), three neighborhood park sites (approximately 14.4 acres), and road improvements to Douglas and Grant Line Roads (approximately 5 acres).

The site is comprised of level to gently rolling terrain, consisting mainly of non-native grasslands. Vernal pools lie within the grasslands. The majority of the site has been used historically as grazing land, which has not substantially altered the hydrology of the project site from its historical condition.

There are no structures situated on the site.

#### Prior Environmental Review in the Sunrise Douglas Area:

The Sunrise Douglas area in southeast Sacramento County is generally comprised of the area bounded by Douglas Road to the north, Sunrise Boulevard to the west, Grant Line Road to the east and the Jackson Highway to the south. This area has been the subject of extensive land use planning and attendant environmental review processes under the California Environmental Quality Act (CEQA) and, to a lesser degree, the National Environmental Policy Act (NEPA).

Beginning in 1987, the Sammis Company (Sammis) initiated a development project in the Sunrise Douglas area that became known as the Sunrise Douglas Project (herein referred to as the SD Project). The SD Project was originally planned as an industrial project covering approximately 1,225.5 acres of land owned/controlled by Sammis, bounded on the west by Sunrise Boulevard, and on the north and south by Douglas Road and Keifer Boulevard, respectively. Sammis applied for County approvals for the industrial development, but changed its proposal to a predominantly residential project about two years later (in 1989), after the announcement of the potential closure of adjacent Mather Field. The residential project required a General Plan amendment, zoning change, and permit from the Corps for fill of jurisdictional areas within the SD Project area. Sammis request for General Plan amendment was the last of its kind in the Sunrise Douglas area because the County subsequently imposed a moratorium on general plan amendments pending its 1993 revision of the County General Plan.

The Corps and the County identified potentially significant environmental impacts associated with the SD Project, and as Lead Agencies, prepared a joint Environmental Impact Statement/Environmental Impact Report for the project under NEPA and CEQA, respectively (the SD Project EIS/EIR).

#### A. The SD Project EIS/EIR

The Final SD Project EIS/EIR, published in January, 1992, evaluated the impacts of a primarily residential project on approximately 1,225 acres. According to the EIS/EIR, the information therein was intended for use by all agencies concerned with major developments in the County. (SD Project EIS/EIR, p.1-1) The EIS/EIR determined the project area contained 82.14 acres of jurisdictional waters, including 68.06 acres of vernal pools. The development as proposed would impact approximately 38.15 acres, including 26.97 acres of vernal pools.

The Corps considered this a substantial impact without appropriate mitigation. The SD Project EIS/EIR proposed a combination of avoidance and on-site creation of wetlands and vernal pools within a 482-acre preserve in the SD Project area, and an off-site creation of wetlands and creation component. All told, the SD Project EIS/EIR required a minimum of 27.01 acres of vernal pools creation (3.8 acres on-site and 23.02 acres off-site) and 14.08 acres of wetland creation on- and off-site. The SD Project EIS/EIR concluded that these on-site and off-site measures, together with provisions of the Wetlands Compensation Plan authored for the wetland/vernal pool reserve, would at least maintain wetland and vernal pool functions and values in the areas, thus sufficiently mitigate impacts to wetland and vernal pools on site. (SD Project EIS/EIR, pp. B-42-43).

The SD Project EIS/EIR considered all other potentially substantial impacts from the development of the project and proposed mitigation measures to reduce all but a few impacts to below substantial levels, in accordance with the requirements of NEPA and CEQA. As the SD Project EIS/EIR noted, for this particular project, the Corps limited its jurisdiction to waters of the United States, and analysis of direct, indirect and cumulative impacts and required mitigation associated with the Corps action, the section 404 permit. (Final SD Project EIS/EIR, p. B-16). For other potentially substantial impacts, the County as CEQA lead agency analyzed and enacted sufficient mitigation measures to reduce potential impacts to below levels of significance in all but eight categories. The SD Project has been substantially constructed.

#### B. Sunrise Douglas Community Plan Sunridge Specific Plan EIR

In 1993, at about the same time as the certification of the SD Project EIS/EIR, the County initiated a Specific Plan process for the greater Sunrise Douglas area, encompassing over 5,000 acres of land, including the SD Project. The County then modified its approach and adopted a more conceptual Community Plan for the greater Sunrise Douglas area, encompassing approximately 6,042 acres, while reducing the area covered by the detailed Specific Plan to include approximately 2,632 acres, including the SD Project already covered by the SD Project EIS/EIR. The County prepared the Sunrise Douglas Community Plan/SunRidge Specific Plan EIR (herein, Community Plan/Specific Plan EIR). For the Community Plan area, the Community Plan/Specific Plan EIR analyzed an overall conceptual framework and policy direction for urbanization of the area covered by the Community Plan. Conceptual land uses were assumed for the Community Plan area outside of the Specific Plan area in order to evaluate the cumulative impacts of future urban development of this area. For

the Specific Plan area, the EIR analyzed detailed land use and public facilities plans and corresponding zoning for near-term urban development within the Specific Plan area. The Community Plan/Specific Plan EIR also considered the findings and mitigation measures of the SD Project 404 permit because the SD Project is within the boundaries of the Specific Plan area. Thus, after the certification of the Community Plan/Specific Plan EIR in 2002, development proposed for 1,225 of the 2,632 total acres of the Specific Plan had been covered by the Corps EIS/EIR and the entirety had been covered by a subsequently prepared EIR. The Corps and other federal agencies engaged the County and Landowners within the Specific Plan area to create a Conceptual Strategy for wetland preservation.

In August 2005, the City of Rancho Cordova, which now has jurisdiction over the Sunrise Douglas Community Planning area, certified a Mitigated Negative Declaration (MND) for the Sunridge East Projects, which include the Douglas Road 98 project. In so doing, the City relied on the Sunrise Douglas Community Plan/SunRidge Specific Plan Final Environmental Impact Report, which was certified by the Sacramento Board of Supervisors on June 19, 2002.

#### C. Conceptual-Level Strategy for Avoiding, Minimizing and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area

In May, 2002, prior to its certification of the Community Plan/Specific Plan EIS/EIR, the County initiated meetings regarding potential wetlands and endangered species permitting strategies for the entire Community Plan area. The U.S. Fish and Wildlife Service, the Corps and U.S. Environmental Protection Agency (the Federal Agencies or Agencies), the California Department of Fish and Game, and a majority of landowners and interested developers within the Specific Plan area attended these meetings. No resolution was reached. On July 17, 2002, the County approved both the Community Plan and the SunRidge Specific Plan. The conditions of approval for the Specific Plan require individual applicants to obtain any necessary Corps permit for fill of waters of the United States. On July 1, 2003, with the incorporation of the City of Rancho Cordova (City), the Community Plan area came under the City's land use jurisdiction.

In early 2004, Congressman Doug Ose asked that all parties come together for further meetings among the stakeholders. The goal of these meetings was to cooperatively develop a conceptual on-site avoidance and off-site mitigation strategy that would satisfy the mandates of federal law administered by the Federal Agencies while allowing for development of the Specific Plan

according to existing land use plans. As a result, the Corps, US Fish and Wildlife Service and the US Environmental Protection Agency (Federal Agencies) developed a strategy that in concept would result in a workable framework for the planned development in the Community Plan and be consistent with the requirements under the Clean Water Act, the Endangered Species Act and other applicable laws.

The Conceptual-Level Strategy for Avoiding, Minimizing and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area dated June 12, 2004 (herein, Conceptual Strategy, incorporated by this reference) sets out 10 principles and standards to assist property owners in identifying alternatives that minimize individual and cumulative effects on aquatic resources and sensitive species. Together with the 10 standards and principles, the Agencies released a Conceptual Preserve map avoidance within the Community Plan area. This map worked in collaboration with the aquatic resource habitat within the Community Plan/Specific Plan area. The Conceptual Strategy preserve area will be protected and managed in perpetuity according to an Agencies-approved preserve management plan. The Map, together with the 10 principles and standards and an agency approved preserve management plan, was to create a mitigation strategy designed to insure that the functions of preserved aquatic resource habitat would be maintained. These protective and restorative measures were designed to protect the conditions of aquatic resource habitat within the Specific Plan, and to minimize both the project-by-project and cumulative effects associated with the development of the Specific Plan.

As part of the Conceptual Strategy process, the Corps addressed its approach to NEPA compliance within the Community Plan area. For the unpermitted area of the SunRidge Specific Plan (the Sunridge Specific Plan area excluding the SD Project), the Corps requested that the permit applicants prepare an analysis of potential cumulative impacts and an evaluation of the practicability of different preserve designs. This analysis applied to seven individual applications for permits that were pending before the Corps, including four projects noticed in the same Public Notice as the Project. (Public Notice No. 200000336; PN# 200100230, PN# 200100252, and PN#199700006).

The City of Rancho Cordova and the Corps are in the process of preparing an EIS/EIR for the SunCreek Specific Plan portion of the Community Plan.

Based on the Conceptual Strategy and Regional Alternatives Information (discussed below), the US Environmental Protection Agency (US EPA) by letter dated November 8, 2004, and the US Fish and

Wildlife Service (US FWS) by their Biological Opinion for the Douglas Road 98 project dated January 12, 2005, confirmed their decision not to elevate the Corps' 404 permit decision on Douglas Road 98 and other applications pending in the SunRidge Specific Planning Area, pursuant to the 404(q) Memorandum of Agreement between the Federal Agencies. The Corps confirmed its' concurrence of the Conceptual Strategy by letter dated October 29, 2004, to Mr. John Hodgson in response to his summary of the negotiations.

The Regional Alternatives Information SunRidge Specific Plan Subarea, Sacramento County, California, dated November, 2004 (referred to herein as the Alternatives Information Document) (Appendix E) addresses regional and sub-regional cumulative impacts that may occur from the Conceptual Preserve plan developed by the Agencies. The Alternatives Information Document analyzes the Conceptual Preserve and eight other alternative preserve configurations according to criteria for minimizing jurisdictional impacts and providing connected preserve area(s), in light of cost, logistics and existing technology. The Corps incorporates the Alternatives Information Document into, and makes it a part of, this Environmental Assessment by reference.

## II. Environmental and Public Interest Factors Considered:

A. Purpose and need: The overall project purpose is to construct a residential development in Sacramento County. Construction resultant from the fill would provide additional housing to accommodate job growth and help address the existing housing shortage within Sacramento County.

### B. Alternatives [33 CFR 320.4(b)(4), 40 CFR 230.10]

The applicant submitted alternatives information (Appendices F and G) for the project. In summary, the applicant considered the practicability of potential alternative locations for the project. The applicant concluded there were no practicable alternative locations for construction of the Douglas Road 98 project that would meet the project purpose and result in fewer environmental impacts.

The applicant provided alternatives information for three on-site design alternatives, including the proposed project. The alternatives information discussed the multi-agency Conceptual Strategy as it applies to the project. The applicant discussed the project within the framework of the ten principles and standards discussed in the Conceptual Strategy, and analyzed its level of compliance with the principles and the associated



preserve map created for the entire Specific Plan area.

1. No action. The no permit alternative is the same as the no fill alternative discussed in the applicant's September 2005, Supplemental Alternatives Submittal. To avoid direct and indirect impacts to wetlands, the no permit alternative would require avoidance of all waters of the U.S., including a 250-foot or 50-foot buffer. The 250-foot buffer would require avoidance of 92.9 acres of land area (out of the 105.3 total), with 12.2 acres remaining for development. The remaining developable acreage would be further constrained by the size and sprawling pattern of the wetlands, including vernal pools, across the site.

The 50-foot buffer yielded a remaining net developable acreage of approximately 63 acres (out of the 105.3 total), resulting in linear, convoluted, or fragmented lands that would be inefficient to develop. Both buffer sizes would result in a no permit alternative that would not leave sufficient contiguous land to feasibly construct a residential development. In considering alternatives that would avoid all jurisdictional waters, the applicant also considered the use of bridges and Conspan-type structures to avoid fill of waters, yet issues of maintaining safe and efficient circulation patterns still remain, making this alternative logistically infeasible and therefore not a practicable alternative.

2. Other project designs (smaller, larger, different, etc.). The applicant provided information on two different avoidance alternatives, with varying levels of avoidance. The applicant determined that any on-site preserve configuration would result in an isolated preserve which would not continue to possess vernal pool and/or wetland functions and values in the long term. Additionally, the applicant indicated that any on-site preserve that would be consistent with the principles and standards of the Conceptual Strategy would reduce the acreage available for development to a point that would preclude construction of a development consistent with the project purpose.

The applicant also participated in extensive discussions with the Federal Agencies in developing the Conceptual Strategy and accompanying Conceptual Preserve Map for projects within the Specific Plan area. The Conceptual Strategy and Preserve Map identify: (1) wetland and vernal pool avoidance areas within the Specific Plan, and (2) ten principles and strategies necessary to create an aquatic resource habitat avoidance and preserve area within the Specific Plan area that ensures overall project consistency with the requirements of the Endangered Species Act and Clean Water Act. The applicant has demonstrated that, as proposed, Douglas Road 98 complies with the Conceptual Strategy

and Preserve Map.

3. Other sites available to the applicant: The applicant was unable to identify any sites within the Specific Plan area which were available and of sufficient size.

4. Other sites not available to the applicant (40 CFR 230.10): The 404(b)(1) Alternatives Analysis for Douglas Road 98 considered eight potential alternative sites within the Specific Plan area. As discussed in the Regional Alternatives Document, these sites did not meet the availability criterion because they were currently under development by other owners, and/or did not meet the environmental criterion because they were not less environmentally damaging as they were likely to have equal or greater impacts to aquatic ecosystems on their sites.

5. Corps selected alternative: The Corps' selected alternative is the applicant's preferred alternative with inclusion of the following special conditions:

1. The project shall comply with the provisions of the Conceptual Level Strategy for Avoiding, Minimizing, and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area dated June, 2004. Specifically, you shall minimize impervious surfaces and develop and implement a stormwater/runoff plan which is designed to maintain watershed integrity through such means as vegetated swales, infiltration trenches, and constructed wetland filter strips to treat stormwater and runoff from the impervious surfaces.

2. This Corps permit does not authorize you to take any threatened or endangered species, in particular the vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardii*), or designated critical habitat. In order to legally take a listed species, you must have a separate authorization under the Endangered Species Act Section 10 permit, or a Biological Opinion under Endangered Species Act Section 7, with incidental take provisions with which you must comply.) The enclosed Fish and Wildlife Service Biological Opinion (Number 1-1-04-F-0314, dated January 12, 2005), contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with incidental take that is also specified in the Biological Opinion. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached Biological Opinion, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the

Biological Opinion, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The Fish and Wildlife Service is the appropriate authority to determine compliance with the terms and conditions of its Biological Opinion, and with the Endangered Species Act. The permittee must comply with all conditions of this Biological Opinion, including those ascribed to the Corps.

3. You shall develop a final comprehensive mitigation and monitoring plan, which must be approved by the Army Corps of Engineers prior to initiation of construction activities. The plan shall include mitigation location and design drawings, vegetation plans, including target species to be planted, and final success criteria, presented in the format of the Sacramento District's Habitat Mitigation and Monitoring Proposal Guidelines, dated December 30, 2004. The purpose of this requirement is to insure replacement of functions and values of the aquatic environment that would be lost through project implementation.

4. To mitigate for the loss of 3.91 acres of waters of the United States, you shall construct at least 3.91 acres of vernal pool habitat at a Corps approved location.

5. You shall construct the required compensatory mitigation concurrently with, or in advance of, the start of construction of the permitted activity.

6. You shall complete construction of the compensatory mitigation no later than December 31, 2006.

7. To insure that compensatory mitigation is completed as required, you shall notify the District Engineer of the date you start construction of the authorized work and the start date and completion date of the compensatory mitigation construction, in writing and no later than ten (10) calendar days after each date.

8. To provide a permanent record of the completed compensatory mitigation work, you shall provide two complete sets of as-builts of the completed work within the off-site mitigation area(s) to the Corps of Engineers. The as-builts shall indicate changes made from the original plans in indelible red ink. These as-builts shall be provided to this office no later than 60 days after the completion of construction of the mitigation area wetlands.

9. You shall establish and maintain, in perpetuity, compensatory preserves containing the 3.91 acres of created/restored vernal pool habitat required by Special

Condition 4 at a Corps approved location, and 7.82 acres of high quality vernal pool habitat at a Corps approved location. The purpose of the preserves is to insure that project implementation does not result in a net loss of functions and values of the aquatic environment.

10. To minimize external disturbance to preserved waters of the United States, you shall establish a buffer of at least 250 feet, consisting of native upland or wetland vegetation from the outer limit of jurisdiction of the entire perimeter of all created, preserved, and avoided waters of the United States, including wetlands within the required preserves.

11. To insure that the preserves are properly managed, you shall develop specific and detailed preserve management plans for the off-site mitigation, preservation, and avoidance areas. The plans shall be submitted to and specifically approved, in writing, by the Corps of Engineers prior to engaging in any work authorized by this permit. This plan shall describe in detail any activities that are proposed within the preserve area(s) and the long term funding and maintenance of each of the preserve areas.

12. To protect the integrity of the preserves and avoid unanticipated future impacts, no roads, utility lines, trails, benches, equipment or fuel storage, grading, firebreaks, mowing, grazing, planting, disking, pesticide use, burning, or other structures or activities shall be constructed or occur within the off-site mitigation, preservation, and avoidance areas without specific, advance written approval from the Corps of Engineers.

13. To prevent unauthorized access and disturbance, you shall, prior to December 31, 2006, install fencing and appropriate signage around the entire perimeter of the preserves. All fencing surrounding mitigation, preservation, avoidance, and buffer areas shall allow unrestricted visibility of these areas to discourage vandalism or disposing of trash or other debris in these areas. Examples of this type of fencing include chain link and wrought iron.

14. Prior to initiating any activity authorized by this permit, you shall, to insure long-term viability of mitigation, preservation, and avoidance areas:

a. Establish a fully-funded endowment to provide for maintenance and monitoring of the off-site mitigation, preservation, and avoidance areas.

b. Designate a Corps approved conservation-oriented third

party entity to function as preserve manager and to hold the required conservation easements.

c. Record permanent conservation easements and deed restrictions maintaining all mitigation, preservation, and avoidance areas as wetland preserve and wildlife habitat in perpetuity. Copies of the proposed deed restriction and conservation easement language shall be provided to the Corps of Engineers for approval prior to recordation.

d. Provide copies of the recorded documents to the Corps of Engineers no later than 30 days prior to the start of construction of any of the activities authorized by this permit.

15. To assure success of the preserved and created waters of the United States, you shall monitor compensatory mitigation, avoidance, and preservation areas for five years or until the success criteria described in the approved mitigation plan are met, whichever is greater. This period shall commence upon completion of the construction of the mitigation wetlands. Additionally, continued success of the mitigation wetlands, without human intervention, must be demonstrated for three consecutive years, once the success criteria have been met. The mitigation plan will not be deemed successful until this criterion has been met.

16. You shall submit monitoring reports to this office for each year of the five-year monitoring period, and for each additional year, if remediation is required, by December 1 of each year. You shall submit an additional monitoring report at the end of the three-year period demonstrating continued success of the mitigation program without human intervention.

17. You must allow representatives from the Corps of Engineers to inspect the authorized activity and any mitigation, preservation, or avoidance areas at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

18. You shall have a biologist, who is familiar with vernal pool and seasonal wetland habitats, monitor all construction activities (including staging, laydown, or access) along the north side of Douglas Road and along the east side of Grantline Road. The monitor shall immediately notify the Corps of Engineers if any impacts to aquatic habitats occur during the proposed road improvements.

C. Physical/chemical characteristics and anticipated changes

(check applicable blocks and provide concise description of impacts).

(X) Substrate: The substrate primarily consists of Redding Bluff loam, Redding Gravelly loam, Fiddymont fine sandy loam, and Red Bluff-Redding complex. The project site is characterized by flat terrain and gently sloping topography. The project would affect all soils on the 105.3-acre site, including all 3.91 acres of waters of the United States. This fill does not constitute a substantial impact because it will be mitigated through the creation of 3.91 acres of vernal pool habitat at a Corps approved location and the preservation of 7.82 acres of vernal pool habitat at a Corps approved location. The impact on substrate overall is adverse but considered minor.

(X) Currents, circulation or drainage patterns: Site drainage flows south and southwest through the site. Filled areas will be developed as part of the project and drainage from these areas will be re-routed to the extent necessary to comply with post-construction stormwater plans for the project site. Runoff from the project will be conveyed off-site via storm drain to a storm water detention basin. The applicant is expected to comply with all post-construction storm water treatment requirements as set out in the City of Rancho Cordova's MS-4 permit and implement necessary water quality Best Management Practices to avoid the potential for substantial adverse nuisance flows from the project to enter into waters of the United States. As a result, off-site impacts will be avoided.

(X) Suspended Particulates; Turbidity: Wetlands on-site likely have slightly turbid water during the rainy season. There is potential for increased turbidity during and after project construction. This potential will be minimized through compliance with the City of Rancho Cordova's MS-4 permit. Water quality BMPs required under the City's MS-4 permit will avoid substantial adverse impacts resultant from the entrance of suspended particulates and turbid runoff into waters of the United States. Only minimal impacts are expected provided the applicant complies with the State Water Quality Certification.

(X) Water quality (temperature, salinity patterns and other parameter): Filled areas developed as part of the project have the potential to contribute urban pollutants to runoff from the site into waters of the United States. These pollutants could include hydrocarbons, nitrates and ammonia, and heavy metals. As with turbidity, the project is required to implement construction and operational BMPs that will avoid substantial adverse impacts from polluted urban runoff into waters of the United States. Minimal impacts are expected provided the applicant complies with

the State Water Quality Certification.

(X) Flood control functions: The entire project site is outside the 500-year floodplain and the project does not place housing within any 100-year flood hazard areas. The existing wetlands and aquatic ecosystems within the project do not provide flow control functions beyond protection from the most frequent storm events. Flood control infrastructure for the project will avoid substantial adverse effects from the permitted fill.

(X) Storm, wave and erosion buffers: Jurisdictional areas on the project site currently provide only minimal erosion buffers, consisting mainly of existing vegetation within the jurisdictional areas. The permitted fill will impact the existing vegetation, but any impact to erosion buffers will be minimized through implementation of construction and operational stormwater BMPs that will include the timely revegetation of filled areas left exposed, and detention of project runoff to prevent substantial adverse erosion off-site.

( ) Erosion and accretion patterns: No effect.

(X) Aquifer recharge: The limited groundwater recharge in the project area occurs primarily along the 0.08 acres of ephemeral drainage on the project site. Soils and underlying hardpan on the project site result in little infiltration from the project area. Runoff from impervious surfaces created as a result of the permitted fill would be collected and diverted through on-site drainage controls and ultimately released downstream. Some infiltration from these features would occur, but at different locations and at different rates than under existing conditions. No substantial adverse effects would likely occur.

(X) Baseflow: None.

Additionally, for projects involving the discharge of dredged material:

( ) Mixing zone, in light of the depth of water at the disposal site; current velocity, direction and variability at the disposal site; degree of turbulence; water column stratification discharge vessel speed and direction, rate of discharges per unit of time; and any other relevant factors affecting rates and patterns of mixing. No effect.

D. Biological characteristics and anticipated changes (check applicable blocks and provide concise description of impacts)

(X) Special aquatic site (wetlands, mudflats, coral reefs, pool and riffle areas, vegetated shallows, sanctuaries and refuges, as defined in 40 CFR 230.40-45): The project site currently contains 3.91 acres of special aquatic sites. The project, as proposed, will impact all 3.91 acres, including 3.70 acres of vernal pools, 0.04 acres of depressional seasonal wetlands, 0.09 acres of riverine seasonal wetlands, and 0.08 acres of ephemeral drainage.

The applicant will compensate the adverse effects of the project on the aquatic environment through a combination of preservation and restoration or creation of waters of the United States. The proposed compensatory mitigation is consistent with the mitigation requirements of the Agencies' Conceptual Strategy and Conceptual Preserve Map. The proposed project will otherwise comply with the 10 principles and standards of the Conceptual Strategy, where applicable.

Compensatory mitigation will consist of restoration/creation of 3.91 acres of wetlands, including vernal pools on appropriate soils at a Corps approved location, which provides a 1:1 ratio of impacted to created wetlands. Areas restored or created should eventually obtain similar functions as wetland areas impacted in the project site, assuring no net loss of wetland acreage as a result of the permitted fill.

The preservation component consists of preserving 7.82 acres of high functioning vernal pool habitat at a Corps approved location. The applicant has proposed to accomplish the required preservation at Borden Ranch. However, Borden Ranch has not received Corps approval.

Typically the Corps does not consider the creation of mitigation wetlands at a 1:1 ratio to the acreage of impacted waters as adequate compensatory mitigation. Usually a higher ratio is required to provide a margin of safety to reflect anticipated success and to account for the time it will take the created habitats to acquire the functions and values lost when the authorized fill occurred. However, in consideration of the relatively high level of preservation which is proposed within the Sunrise Douglas Community Plan area and the proposed 2:1 preservation ratio which is to occur off-site at a Corps approved location, the Corps has determined the proposed 1:1 creation ratio will adequately replace the wetland functions lost through implementation of the Douglas 98 project.

(X) Habitat for fish and other aquatic organisms: 3.91 acres of wetland and vernal pool habitat for the federally listed vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool



tadpole shrimp (*Lepidurus packardii*) will be affected by the permitted fill.

The applicant has proposed mitigation measures designed to mitigate impacts to aquatic habitat from the proposed fill. Mitigation includes off-site preservation of high quality vernal pool habitat at a Corps approved location, in addition to creation of vernal pool and wetland habitat at a Corps approved location. The preserved habitat will be similar both geographically and hydrologically to those areas impacted. Mitigation ratios are set at 1:1 for off-site creation and 4:1 for off-site preservation. Finally, the preservation and creation sites will be maintained and preserved in perpetuity as habitat resources. The funding and management of these areas provides environmental benefits in the form of habitat restoration, creation and preservation. Thus, these measures will mitigate the effects of the proposed fill on aquatic habitat to below substantial levels.

(X) Wildlife habitat (breeding, cover, travel, general): The project site provides foraging habitat for raptors, other birds, and terrestrial species. Impacts to the aquatic habitat types will be offset by off-site preservation and off-site creation of wetland habitats. The approximately 101 acres of upland habitats within the project site will be permanently lost during project implementation. This will result in a net adverse effect, which although it contributes to the cumulative loss of grassland habitats in Sacramento County and the Central Valley, is expected to be below substantial levels.

(X) Endangered or threatened species: As discussed previously, wetlands and vernal pools subject to fill are assumed by the applicant to contain the threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and the endangered vernal pool tadpole shrimp (*Lepidurus packardii*). The Service issued a no-jeopardy biological opinion (1-1-04-F-0314), dated January 12, 2005 on the proposed fill activities for the Douglas Road 98 project. The Service concluded that the fill activities of the Corps Selected Alternative will not jeopardize the continued existence of the listed vernal pool crustaceans because mitigation proposed as part of the project, plus compliance with the agencies Conceptual Strategy and Conceptual Preserve Map will offset impacts to listed species and their habitats. The Biological Opinion requires that mitigation measures proposed by the applicant be implemented through the 404 permit, and the implementation of those mitigation measures is included as a condition of the permit issued. Based on the conclusions of the no-jeopardy opinion, and the likelihood of success of planned mitigation, the permitted fill will not have substantial effects

on endangered or threatened species, as mitigated.

(x ) Biological availability of possible contaminants in dredged or fill material, considering hydrography in relation to known or anticipated sources of contaminants; results of previous testing of material from the vicinity of the project; known significant sources of persistent pesticides from land runoff or percolation; spill records for petroleum products or designated (Section 311 of the CWA) hazardous substances; other public records of significant introduction of contaminants from industries, municipalities, or other sources: According to the City of Rancho Cordova's MND, on page 3-28, the project site has no known past hazardous materials involvement. Additionally, although there is documented groundwater contamination in the plan area, the project does not include the use of on-site wells. Therefore, the potential for the project to result in exposure to the groundwater contamination is unlikely.

E. Human use characteristics and impacts (check applicable blocks and provide concise description of impacts):

(x ) Existing and potential water supplies; water conservation: According to the City's MND, page 3-51, there is presently no water delivery infrastructure to the project area. The water supply plan for the project and the remainder of the Sunrise Specific Plan area is to construct water supply facilities in phases as the demand increases. The plan includes construction of a groundwater treatment plant, formerly known as the North Vineyard Well Field, near the intersection of Florin and Excelsior Roads to extract groundwater from the underlying aquifer. Eventually, it is expected that this facility will deliver a maximum flow rate of 10 million gallons per day. Operation of the facility ultimately will be incorporated with surface water and recycled water elements to create a conjunctive use program. In the interim, mitigation measure 16.1c of the MND (page 3-52), places a cap on development until safe and reliable water supplies have been identified and acquired. Implementation of the mitigation measures of the MND should result in no adverse effect to existing or potential water supplies.

( ) Recreational or commercial fisheries: No effect.

( ) Other water related recreation: No effect.

(X) Aesthetics of the aquatic ecosystem: The vernal pools which are interspersed within the grasslands of the project site, are regionally appreciated for the aesthetic values they possess when in bloom. Several of the pools may be observed by commuters along Douglas Boulevard and Grantline Road. All of the existing

aesthetic values of the project site would be lost during project implementation. Although the applicant will create a similar acreage of aquatic habitats, which should have similar aesthetic values to those within the project site, the proposed mitigation area at Gill Ranch is in a more remote location and the aesthetic values will be observed by far fewer individuals. Implementation of the project will result in an adverse but minor effect on the aesthetics of the aquatic ecosystem.

( ) Parks, national and historic monuments, national seashores, wild and scenic rivers, and wilderness areas, research sites, etc.: No effect.

(X) Traffic/transportation patterns: Current traffic and transportation patterns in the area of the proposed project exhibit growth underway in Sacramento County. Small collector roads connect to large arterial roadways. Potential traffic impacts were addressed in the Traffic Circulation Section of the Sunrise Douglas Community Plan and Sunridge Specific Plan (SDCP/SRSP) Master Environmental Impact Report (EIR). The SRSP would increase A.M. and P.M. peak hours and daily vehicle trips compared to existing traffic conditions. The SDCP/SRSP EIR identified traffic and circulation mitigation measures for development projects to adopt. Implementation of the proposed mitigation measures should reduce impacts to an adverse but minor level.

(X) Energy consumption or generation: Development of the project would require energy for grading and fill, and would require additional energy for construction, operation and maintenance of improvements and open space areas. Additionally, occupation of the project's 693 homes would result in a much increased energy demand over existing conditions on the project site. The applicant has indicated that there is adequate capacity available to serve these future energy needs, and the impacts are not substantial.

( ) Navigation: No effect.

(X) Safety: The project will implement construction safety measures such that there is no potential for a substantial effect to safety.

(X) Air quality: The proposed permit has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit will not exceed de minimis levels of direct emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later

indirect emissions are generally not within the Corps continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit action.

(X) Noise: Motor vehicle traffic is the primary existing noise source in the project area. Additional sources of noise may include the nearby Kiefer Road landfill, American River Aggregates, Douglas Security Park, the Sacramento Rendering Company, and the Cordova Shooting Center. Implementation of the proposed project would result in substantially elevated noise levels during construction. Over the long term, occupation of the residences and maintenance of the common space areas will result in increased noise levels due to elevated vehicle traffic, lawnmower and leaf blower usage, interaction among the residents, and other activities. Additionally, implementation of the project would result in the location of residences in close proximity to roadways. However, the applicant has indicated that land uses proposed on all portions of the project are expected to meet the County Noise Level Performance Standards (NLPSS) and County Land Use Compatibility standards set by the County's General Plan Noise Element (Community Plan/Specific Plan EIR, pp. 12.9c). These indicators are a common threshold used for assessment of substantial noise impacts, and indicate the project will not result in substantial noise impacts.

(X) Historic properties (Section 106 National Historic Preservation Act): According to the report, entitled *Determination of Eligibility and Effect for the Douglas Road 98 Project Area, Sacramento County*, the project site contains no sites listed, or eligible for listing, on the National Register of Historic Places or any recorded prehistoric or historic resources. The findings of the report were based on a records search at the North Central Information Center of the California Historical Resources Information System, Native American consultation, and a field survey of the project site. Based on the report, we have determined that the proposed action is not expected to have an effect on historic properties.

(X) Land Use Classification: Construction of the project will occur lands previously used for agricultural activities. These lands are located within the General Plan Urban Policy Area and are shown as new Urban Growth Area in the Sacramento County General Plan, indicating the County's intent to plan for the urbanization of this area within the 20-year time frame of the General Plan. (Community Plan/Specific Plan EIR, p. 3.5.) The Corps's permit will have no substantial effects on the land use classification of the Project area.

(X) Economics: Construction associated with the project will provide jobs and may generate revenue for the local economy. In the long term, the project will help to address growing housing demand in the Sacramento County area. Housing shortage in the area has the potential to negatively affect continued economic growth in the southeast County area, and the greater Sacramento County area as a whole.

(X) Prime and unique farmland (7 CFR Part 658): The California Department of Conservation's Farmland Mapping and Monitoring Program designated the project site as grazing land and farmland of local importance, not as prime or unique farmland. According to the City of Rancho Cordova's MND, neither the grazing nor farmland of local importance designation qualifies the project site as prime and unique farmland.

(X) Food and fiber production: Previous use of the site as grazing land would have contributed to the production of beef and likely leather products. No food and fiber production benefits are likely to remain after project implementation. Therefore, the project would have a minor but adverse effect on food and fiber production.

(X) General water quality: The existing quality of water in wetlands and other waters of the United States on the project site results from local precipitation, drainage from adjacent areas, and residues of agricultural chemicals on site. Fill of wetlands and construction of the applicant's proposed project has the potential to add urban pollutant runoff. Pursuant to Section 401 of the Clean Water Act, the applicant has obtained certifications from the Central Valley Regional Water Quality Control District, issued December 30, 2004 (File No. 5A34CR00184). The 401 Certifications concluded that the proposed project has proposed sufficient measures to adequately protect the identified beneficial uses of surrounding and downstream water courses. The applicant will comply with all post-construction storm water treatment requirements as set out in the City of Rancho Cordova's MS-4 permit and implement necessary water quality Best Management Practices to prevent substantial impacts to the water quality of surrounding and downstream areas.

(X) Mineral needs: Current activities at the project site do not require mineral needs. Construction of the project will necessitate the importation of aggregate, concrete, and asphalt. These materials will likely be supplied locally. No negative impacts are expected.

(X) Consideration of private property: The project area is

currently private property owned by the applicants. The project is being permitted as proposed and the applicant's use of private property has been given appropriate consideration.

(X) Minority and Low Income Populations: The proposed action has been evaluated in accordance with Title VI of the Civil Rights Act and Executive Order 12898 regarding environmental justice populations. Impacts to the minority and low-income populations in the permit area will not be disproportionately high.

( ) Other:

F. Summary of secondary and cumulative effects: .

The Service estimates that any jurisdictional wetland or vernal pool habitat within 250 feet of project development will be indirectly impacted due to increased human presence, changes to hydrology or other created conditions. Habitat to the east and north is divided from the project Site by a major roadway and therefore indirect impacts are not anticipated. Because lands to the west and south are within the approved Sunrise Douglas Community Plan/SunRidge Specific Plan area, habitat in these areas would be directly removed and offset by adjacent proposed development. Therefore, separate Section 7 consultation will be initiated on lands adjacent to the project site and indirect impacts to these areas are expected to be offset through this process. The Service did not include indirect wetland impacts in its issuance of its no-jeopardy biological opinion for the permitted fill, and concluded that the applicant's proposed mitigation measures sufficiently offset direct impacts to wetland and vernal pool habitat.

Cumulative effects are the incremental effects of the agency's proposed action, and past, present, and reasonably foreseeable future actions in the locale of the agency's action. For analysis of cumulative impacts, the Corps has focused on the larger 1,345-acre subarea of the SunRidge Specific Plan area because a number of actions are currently pending in the area that could have potentially substantial cumulative effects. The City of Rancho Cordova has completed the land use entitlement process for each of these projects within this area, and the proposed actions are well defined and the potential impacts are foreseeable. Moreover, each of the 404 permit applications pending in the SunRidge subarea are for geographically contiguous jurisdictional features and the permitted actions are planned to occur roughly during the same time frame. Because of the certainty of the land use entitlements, and the related geography and timing of the effects, they have the potential to be

cumulative.

The Conceptual Strategy, and the detailed analysis in the Regional Alternatives Information address potential cumulative effects to both aquatic and non-aquatic resources in the Subarea. The collaborative effort of the Federal Agencies and the numerous applicants participating in the Conceptual Strategy resulted in a plan to preserve wetlands and vernal pools in the area that collectively reduced adverse effected jurisdictional waters from almost 60 acres under the adopted Specific Plan, to just over 44 acres, while preserving 41.2% of vernal pool habitat within the Specific Plan. Each project has agreed to demonstrate consistency with the Conceptual Strategy and to incorporate mitigation that will ensure no net loss of wetlands. It is estimated that over 50% of the waters in the Community Planning Area will be protected under the conceptual preserve design. This is a substantial reduction of impacts to waters of the US as compared to the proposed level of development from the County of Sacramento. Thus, the Conceptual Strategy results in avoidance of adverse cumulative effects by (1) increasing avoidance and preservation of wetlands and vernal pools within the Subarea from what was initially proposed under the Specific Plan, (2) strategically identifying avoidance areas in a manner that minimizes edge-to-area ratios and maximizes connectivity, (3) coalescing these individual projects avoidance and minimization efforts into a regional reserve designed to connect to the previously approved and existing Anatolia preserve, thereby increasing connectivity between project avoidance areas and connectivity to downstream wetlands and vernal pools, and (4) creating large, intact corridors supporting the Morrison and Laguna Creek watersheds and associated vernal pools in the Specific Plan area. The Conceptual Strategy also sets out principles and standards for development surrounding the avoided wetlands and vernal pools that will reduce urban edge effects on these areas and to promote long-term retention of wetland and vernal pool functions. Last, the Conceptual Strategy areas are required to be monitored and managed in perpetuity according to the preserve management plan to be submitted for Federal Agencies approval. The measures specified in the Conceptual Strategy for the creation of a preserve according to the Conceptual Preserve map will avoid cumulatively substantial impacts to jurisdictional wetlands and vernal pools within the Specific Plan area.

Future projects in the Sun Creek portion of the Community Plan area are as yet too uncertain to include within a cumulative impacts assessment at this time. The City of Rancho Cordova has prepared a draft Specific Plan for the SunCreek portion of the Community Plan area, which is immediately to the south of the SunRidge Specific Plan area. The Corps and the City are

preparing a joint EIS/EIR for the SunCreek Specific Plan, which will further consider potential cumulative effects. The Community Plan/Specific Plan EIR does not provide more than conceptual information on jurisdiction impacts within the SunCreek area (Community Plan/Specific Plan EIR, p.3.5.) The current EIS/EIR process will modify and refine land uses in this area, including the creation of a jurisdictional wetland and vernal pool preserve within the SunCreek area. Although impacts to wetlands are likely, because the EIS/EIR process is at an early stage it is not reasonably foreseeable to predict the impacts that could result from that future project. Subsequent applications for fill for projects within the Community Plan area will also be appropriately evaluated under NEPA and the conceptual strategy.

Together, past measures taken to reduce impacts at the Anatolia project (SD Project) combined with measures specified in the Conceptual Strategy and Conceptual Preserve for the SunRidge Specific Plan area, assure that adverse effects to jurisdictional wetland and vernal pool areas are not cumulatively substantial.

In addition to potential cumulative impacts to jurisdictional wetlands and vernal pools, the development of the project, in conjunction with development of other projects noticed in PN# 200000336 and others within the Specific Plan area, may have cumulative impacts to other categories of the human environment. The County's Community Plan/Specific Plan EIR discusses potentially substantial cumulative effects from development in the Specific Plan area. The County identified mitigation measures through the Specific Plan EIR, and incorporated land use planning policies within the Specific Plan that are designed to address cumulative impacts in these other categories such as traffic, noise, air quality and groundwater levels. The mitigation measures in the City of Rancho Cordova's Mitigated Negative Declaration for the Sunridge East Properties, including the Douglas Road 98 Project, in addition to measures implemented by the County's adoption of the SD Project EIS/EIR Mitigation and Monitoring Program, and future mitigation measures created for the SunCreek Specific Plan area, will assure adequate treatment of these categories of cumulative impacts.

The growth inducing effects of the permitted fill are expected to be minimal, as this area has already been designated as an urban growth area by the County's 1993 General Plan.

### III. Findings:

#### A. Other authorizations:



1. Water quality certification: The applicant obtained water quality certifications from the Central Valley Regional Water Quality Control Board on December 28, 2004, Files Nos. 5A34CR00184. The 401 certifications, including special conditions, are attached hereto as Appendix B.

Date: December 28, 2004

Issued:   X  

Denied:           

Waived:           

Special Conditions: Yes   X   No        (if yes see attached)

2. State and/or local authorizations (if issued): Streambed Alteration Agreement. Prior to engaging in any work authorized by this permit, the applicant will obtain a streambed alteration agreement if required by the California Department of Fish and Game.

B. A complete application was received on October 6, 2003. A Public Notice describing the project was issued on February 6, 2004, and sent to all interested parties including appropriate state and Federal agencies (Public Notice No. 200000336). Public Notice No. 200000336 also included information four other projects within the Specific Plan area requiring individual permit authorization. Thus, comments received on the Public Notice typically addressed the five applications discussed in the Public Notice as a whole rather than Douglas Road 98 in particular. As they bear on this permit action, Comments received have been reviewed and are summarized below:

#### 1. Summary of Comments Received

##### a. Federal

##### 1) U.S. Environmental Protection Agency (EPA):

EPA responded by letter dated April 26, 2004. EPA believed the 5 permit applications, as discussed in the Public Notice, would collectively cause unacceptable impacts to Aquatic Resources of National Importance (ARNI). However, EPA believed that implementation of the proposed Conceptual Strategy and creation of a large aquatic resource habitat preserve according to the Conceptual Preserve map created by the agencies would resolve Clean Water Act issues.

##### 2) U.S. Fish and Wildlife Service (FWS):

FWS commented by letter dated April 26, 2004. The Service

requested preparation of an alternatives analysis in compliance with the 404(b)(1) guidelines. The Service did not concur with the conclusions of the Sunrise Douglas Community Plan/SunRidge Specific Plan EIR regarding the identification of an environmentally superior alternative. The Service commented on proposed recreated stream channels to be constructed within portions of the Specific Plan area. The Service believed impacts to water quality due to increased urban runoff were inadequately addressed. The Service recommended against in-stream storm water detention ponds. The Service believed proposed development within the Community Plan area would likely impact the Stone Lakes National Wildlife Refuge downstream of the Community Plan area. The Service commented on the potential of off-line water quality basins to impact the hydrology of streams running through the site. The Service commented that development within the Community Plan area would impact special status species. The Service commented that development within the Community Plan area would result in unacceptable impacts to ARNI. The Service commented that a comprehensive on-site mitigation strategy for wetlands and vernal pools in the Community Plan area was necessary. The Service commented that wetland mitigation and monitoring plan for the entire Community Plan area should be submitted to the federal agencies for their review. The Service believed that all interrelated projects receiving Nationwide Permits within the Community Plan area should instead be considered through the Individual Permit process. The Service recommended the adoption of the Conceptual Strategy and Conceptual Preserve map created by the agencies. The Service requested that the Corps initiate consultation under Section 7 of the Endangered Species Act.

3) National Marine Fisheries Service (NMFS): Not applicable.

4) Other: Not applicable.

b. State and local agencies

California Department of Transportation ( CalTrans ) commented by letter dated March 25, 2004. CalTrans requested that any runoff from the proposed development not contribute a contaminant load to storm waters entering the State Highway System (SHS) right-of-way, and that all runoff entering the SHS meet Regional Board standards for clean water. CalTrans requested that increased flows to the SHS be mitigated. CalTrans requested the incorporation of environmental Best Management Practices to mitigate adverse drainage impacts.

c. Organizations:

The California Native Plant Society (CNPS) commented by letter dated March 30, 2004. CNPS commented that the fill proposed under the Public Notice would impact an unusually high concentration and diversity of vernal pools in Sacramento County.

CNPS commented it was inappropriate for the Corps to evaluate the proposed fill permits as individual actions because they are part of a single planning area (Specific Plan). CNPS commented that a piecemeal approach would discount substantial cumulative project area effects on vernal pools. CNPS commented that an Environmental Impact Statement was needed to assess the combined effect of Plan-area development and alternatives. CNPS commented that a County-wide study had shown the Community Plan area to have a high concentration and diversity of vernal pools. CNPS commented that the area hosted several listed species. CNPS requested that the permit applicants be required to include on-site preservation as part of their mitigation package approved fill, and that it was not possible to fully mitigate for lost wetland area through preservation in distant areas of the County. CNPS requested that the vernal pool creation be avoided, especially within undisturbed vernal pool landscapes.

Stone Lakes National Wildlife Refuge Association (Stone Lakes) commented by letter on March 3, 2004. Stone Lakes made similar comments as CNPS, and commented that mitigation of impacts through preservation of vernal pools should preserve vernal pools with comparable geology, soil types, sizes, depths and densities. Stone Lakes requested that all rare plant occurrences be preserved, particularly Slender Orcutt Grass. Stone Lakes comments that the public has not had an opportunity to comment on a specific reserve mitigation plan for the SunRidge area until this point.

Barbara Vlamis, Executive Director of the Butte Environmental Council (BEC) commented by letter dated April 24, 2004. BEC commented that the applicants failed to provide alternatives to the project under 42 U.S.C. 4332 (2)(c)(Vi), & (E). BEC commented that it was inappropriate for the Corps to evaluate the proposed permit actions noticed under the Public Notice as individual projects, and that such an approach would ignore the significant cumulative effects of the projects and others in the Community Plan area on the vernal pool ecosystem in Sacramento County. BEC commented that the Public Notice does not provide a cumulative impact analysis for public view. BEC requested that a more thorough mitigation and monitoring proposal be submitted for public review, and that preservation of intact vernal pools off-site was not adequate mitigation. BEC requested that permit processing be suspended until an EIS was prepared.

Citizens Committee to Complete the Refuge (CCCR) commented by letter dated April 26, 2004. CCCR commented that vernal pools in the Community Plan area should be considered ARNI. CCCR commented that fill proposals noticed in the Public Notice were for related and dependent projects through their reliance on shared existing and proposed community infrastructure, and should therefore be considered as a single project. CCCR commented that the applicants should prepare an Alternatives Analysis under the 404(b)(1) guidelines to rebut the presumption that a practicable alternative exists to the proposed fill. CCCR commented that the applicants had made no attempt to minimize impacts. CCCR commented that the Corps should prepare an EIS prior to rendering a permit decision, and that impacts from the applicant's proposed fill be considered in concert. CCCR commented that minimal information regarding mitigation for impacts to jurisdictional waters had been provided to the public.

d. Individuals:

Many individuals submitted form comment letters regarding the proposed permits noticed under the Public Notice. The Corps reviewed and considered each letter, regardless of whether it was a form letter, but in the instance of a form letter, the comments set out by the first letter entered into the record for this Public Notice will be summarized and responded to herein, and the individual authors whom submitted version of each form letter are noted in Appendix C herein. Response to the form letter shall be deemed response to each form received. Also noted in Appendix C are authors of numerous letters received in support of the Public Notice. Their comments have been reviewed and noted, if not specifically responded to herein.

Mr. David Wyatt commented by letter dated March 26, 2004. Mr. Wyatt commented that the fill applications covered in the Public Notice be considered cumulatively for significant impacts on natural communities in the impact area. Mr. Wyatt commented that sensitive species within the areas proposed for fill. Mr. Wyatt commented that the Corps' no net loss policy for wetlands required the consideration of creation of large preserves. Mr. Wyatt suggested a 250-foot buffer for vernal pool preserve areas.

Ms. Mary Beth Metcalf, M.D. commented by letter dated March 24, 2004. Ms. Metcalf requested that an EIS be prepared, that public hearings be arranged to disseminate additional information collected on environmental impacts.

Joan E. Berry commented by letter dated March 22, 2004. Ms. Berry commented that the Corps should preserve natural habitat in the Specific Plan area rather than approve development.

Irma Acevedo commented by letter dated March 22, 2004. The second page of Ms. Acevedo's letter was missing when admitted to the record. Ms. Acevedo commented that it is inevitable and logical to deduce that by evaluating their applications as individual projects the U.S. Army Corps of Engineers would fail to prove true protection. Ms. Acevedo requested an analysis of alternatives to development within the Specific Plan area and that public hearings be held on the subject.

Rob Millberry commented by letter dated March 26, 2004. Mr. Millberry commented that the vernal pool habitat within the Community Plan area, despite its subtlety should be saved because of their rarity and high quality.

Sara M. Lee commented by letter dated March 26, 2004. Ms. Lee commented that 10 percent of the remaining vernal pools in Sacramento County are included in the Community Plan area and the Corps should not approve their fill. Ms. Lee expressed concern that authorized fill of wetlands would result in negative impacts to water quality and greater demands on water supply. Ms. Lee commented that proposed fill would threaten the survival of vernal pool fairy shrimp. Ms. Lee requested that the Service be consulted on the proposed fill and that mitigation should not be in the form of creation. Ms. Lee expressed concern that the proposed fill for the Community Plan area would cause additional off-site impacts to hydrology of unfilled wetland areas.

M. Nasserri commented by letter dated March 12, 2004. M. Nasserri requested that the EPA, the Service and the Corps create a strategy for preserving wetlands and vernal pools in the SunRidge Specific Plan and Community Plan areas.

Elizabeth Kuehner commented by letter dated March 10, 2004. Ms. Kuehner commented that the vernal pool species in the Community Plan area were worthy of preservation.

Adrian A. Barnett commented by letter dated March 10, 2004. Mr. Barnett commented that the Corps should take action to preserve the Mather Field Vernal Pools.

Patricia Foulk commented by letter dated March 5, 2004. Ms. Foulk commented that potential fill of wetlands within the Specific Plan and Community Plan area would lead to irreversible fragmentation of vernal pools in these areas. Ms. Foulk commented that the fill proposed under the Public Notice would result in substantial loss of listed species. Ms. Foulk commented that development within the Community Plan area would impact hydrology in the Community Plan area and surrounding areas, and result in a loss of diversity of vernal pool types.

Ms. Foulk commented that the success of creation mitigation is not scientifically supported and is not adequate mitigation for natural habitat. Ms. Foulk commented that the Specific Plan EIR did not sufficiently analyze wetland impacts and that an EIS should be prepared. Ms. Foulk commented that existing traffic conditions indicate the necessity of an EIS. Ms. Foulk commented that small, vest pocket preserve would not sufficiently preserve vernal pool habitat and species.

Jean V. Shepard commented by letter dated March 3, 2004. Ms. Shepard commented that all applications for fill covered by the Public Notice should be considered in concert as one application. Ms. Shepard requested that a large, connected wetland preserve be created in the area of the projects covered by the Public Notice.

Carin High commented by letter dated March 15, 2004. Ms. High submitted questions on behalf of Florence LaRiviere, Chairperson of Citizens Committee to Complete the Refuge, whose comments are summarized above.

Bonnie Tran Commented by letter dated March 22, 2004. Ms. Tran submitted comments regarding another application for fill, and requested that a vernal pool preserve established in the Mather Field area.

Alexandra Lamb commented by letter dated March 22, 2004. Ms. Lamb commented that off-site preservation would not mitigate for potential impacts of the fill proposed in the Public Notice. Ms. Lamb commented that the Corps should preserve all vernal pools proposed for impact under the Public Notice and prepare an EIS covering the proposed fill.

Patricia Jones commented by letter dated March, 2004. Ms. Jones expressed concern over use of creation as a method for mitigating impacts to wetlands and vernal pools. Ms. Jones requested the preparation of an EIS for the fill proposed under the Public Notice.

## 2. Evaluation

I have reviewed and evaluated, in light of the overall public interest, the documents and factors concerning this permit application as well as the stated views of other interested agencies and the concerned public. In doing so, I have considered the possible consequences of this proposed work in accordance with regulations published in 33 CFR Parts 320 to 330 and 40 CFR Part 230. The following paragraphs include my evaluation of comments received and how the project complies with

the above-cited regulations.

a. Consideration of comments

(1) US EPA responded by letter dated April 26, 2004. EPA believed the permit applications as discussed in the Public Notice would collectively cause unacceptable impacts to Aquatic Resources of National Importance (ARNI). Since 2002, the Corps, EPA, USFWS and other state and local agencies and landowners met to resolve the significant environmental concerns associated with the Sunrise Douglas Community Plan/SunRidge Specific Plan. As a result, the agencies produced a plan (A Conceptual-Level Strategy for Avoiding, Minimizing and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area, dated June 2004, and a map (Sunrise-Douglas Community Planning Area dated March 8, 2004) to significantly reduce impacts to waters by outlining large preserve areas along with a strategy for conservation. EPA stated in their letter that implementation of the conceptual-level strategy referenced above serves as a baseline for environmental protection. Properly implemented, it would resolve EPAs CWA issues through avoidance of aquatic resources and minimization of impacts. The proposed Douglas Road 98 project complies with the Conceptual Strategy created for the SunRidge Specific Plan Area.

Consistent with the Conceptual Strategy, the applicant will compensate for impacts to wetlands through preservation of existing high quality wetlands at a Corps approved location pursuant to a Management Plan. The applicant also proposes to compensate for impacts to wetlands by creating high quality wetlands at a Corps approved mitigation site pursuant to a Mitigation and Monitoring Plan prepared for and submitted to the Corps for review and approval. Thus, these measures offset any impacts to wetlands and vernal pools on the site and address EPA's concerns.

(2) The United States Fish and Wildlife Service commented by letter dated April 26, 2004. The Service requested preparation of an Alternatives Analysis in compliance with the 404(b)(1) Guidelines. The applicant has submitted an individual alternatives analysis for the project, and has participated in the creation of the Regional Alternatives Document. The Alternatives Analysis submitted by the applicant determined that the project site is the least environmentally damaging practicable alternative site of comparable size and availability within the Specific Plan area, and determined that the proposed project design was the least environmentally damaging practicable, considering cost, logistics and existing technology.

The Service did not concur with the conclusions of the Sunrise Douglas Community Plan/SunRidge Specific Plan EIR regarding the identification of an environmentally superior alternative. However since their comment, the Service has participated in the finalization of the Conceptual Strategy and Conceptual Preserve map for the Specific Plan area.

The Service commented on proposed re-created stream channels to be constructed within portions of the Specific Plan area. This comment relates to development within the Community Plan area generally. Fill permitted pursuant to the Douglas Road 98 application will not be used to create and re-created stream channels, nor are there any proposed within the entire project.

The Service believed impacts to water quality due to increased urban runoff were inadequately addressed. Impacts to water quality from the permitted fill for the project will be minimal. The applicant will be required to comply with all requirements of the City's MS-4 permit in assuring adequate treatment of urban runoff, including implementation of water quality BMPs on the project site.

The Service recommended against in-stream storm water detention ponds. Fill permitted pursuant to the Douglas Road 98 application will not be used to create any in-stream detention ponds, nor are there any proposed within the entire Project.

The Service believed proposed development within the Community Plan area would likely impact the Stone Lakes National Wildlife Refuge downstream of the Community Plan area. Since Douglas Road 98 is not within the Upper Morrison Creek sub-watershed, any off-site flows resultant from fill permitted for the Project are not likely to reach the Stone Lakes Refuge, and therefore would have minimal impact on the Refuge.

The Service commented on the potential of off-line water quality basins to impact the hydrology of streams running through the site. Fill activities permitted pursuant to the Douglas Road 98 application will not contribute to the creation of any off-line water quality basins, nor are there any proposed within the entire project. The project will otherwise implement adequate water quality BMPs to assure minimization of impacts to water quality from permitted fill for the Project.

The Service commented that development within the Community Plan area would impact special status species. The Service has subsequently issued a no-jeopardy biological opinion for proposed fill of the project, concluding that mitigation measure proposed for impacts to jurisdictional waters are sufficient to offset



impacts to listed species and their habitat.

The Service commented that development within the Community Plan area would result in unacceptable impacts to ARNI. Please see our response to EPA's similar comment regarding ARNI, in d.(1) above. Subsequent to this comment, the Service has assisted in finalizing the Conceptual Strategy and accompanying Conceptual Preserve map, which enumerate protections necessary to adequately protect wetlands and vernal pools within the Specific Plan area.

The Service commented that a comprehensive on-site mitigation strategy for wetlands and vernal pools in the Community Plan area was necessary. Since this comment, the Service has assisted in finalizing the Conceptual Strategy and accompanying Conceptual Preserve Map for wetlands in the Specific Plan area. The Douglas Road 98 project will comply with the principles and standards of the Conceptual Strategy and complies with the Conceptual Preserve Map. Landowners in the remaining area of the Community Plan outside the Specific Plan have agreed to prepare and EIS to further analyze impacts to wetlands in that portion of the Community Plan.

The Service commented that a wetland mitigation and monitoring plan for the Community Plan area should be submitted to the federal agencies for their review. The areas of permitted fill on the Douglas Road 98 project will be mitigated through preservation at a Corps approved location, and through compensation at a Corps approved location.

The Service believed that all interrelated projects receiving Nationwide Permits within the Community Plan area should instead be considered through the Individual Permit process. In this case, the proposed fill related to the Douglas Road 98 Project is being considered under the individual permit process. Additionally, the applicant has requested authorization for all fill reasonably related to the project, and therefore has complied with Corps regulations requiring the inclusion of fill activities necessary for a particular project under one permit application.

The Service recommended the adoption of the Conceptual Strategy and Conceptual Preserve map created by the agencies. Subsequent to this comment, the Service assisted in finalizing the Conceptual Strategy and Conceptual Preserve Map, and has been requiring compliance with them as a condition of its biological opinions, including the no-jeopardy opinion for Douglas Road 98.

The Service requested that the Corps initiate consultation under Section 7 of the Endangered Species Act. The Corps has completed

a Section 7 consultation with the Service for the permitted fill on the Douglas Road 98 project, receiving a no-jeopardy biological opinion on January 12, 2005.

(3) CalTrans requested that any runoff from the proposed development not contribute a contaminant load to storm waters entering the State Highway System (SHS) right-of-way, and that all runoff entering the SHS meet Regional Board standards for clean water. CalTrans requested that increased flows to the SHS be mitigated. CalTrans requested the incorporation of environmental Best Management Practices to mitigate adverse drainage impacts.

The applicant will minimize impacts to water quality that could result from permitted fill through implementing applicable pre- and post-construction BMPs and otherwise complying with the requirements of the City's MS-4 permit. Additionally, the Douglas Road 98 project will abide by the conditions of the Clean Water Act Section 401 Water Quality Certifications for Douglas Road 98, dated December 28, 2004.

(4) The California Native Plant Society (CNPS) commented that the fill proposed under the Public Notice would impact an unusually high concentration and diversity of vernal pools in Sacramento County. The proposed 404 permit for Douglas Road 98 will affect approximately 3.70 acres of vernal pools. These pools are dispersed throughout the Project site, unlike other portions of the Specific Plan area that retain high concentrations of pools and wetlands in large vernal pool and wetland complexes. The site's off-site connections to the north and east have been cut off by the existing Douglas and Grant Roads. Land to the west and south are proposed for fill on the Sunridge Park and Grantline 208 sites. Given the small amount of vernal pool on the site, Douglas Road 98 does not provide a high concentration of high quality vernal pool habitat that may be characteristic of other areas of Sacramento County.

CNPS commented it was inappropriate for the Corps to evaluate the proposed fill permits as individual actions because they are part of a single planning area (the Specific Plan). The Douglas Road 98 project and the remaining Specific Plan development have been evaluated under the Conceptual Strategy.

The CEQ's NEPA regulations also require that federal agencies consider connected or cumulative actions under the same NEPA review, and grant the Corps discretion to consider similar actions together under a single review. (40 CFR Part 1508.25.) Under the guidelines, federal actions are connected if they, for example, automatically trigger other actions, cannot proceed

unless other actions are taken previously or simultaneously, or are otherwise interdependent parts of a larger action and depend on the large action for their justification. Cumulative actions must also be included if, when viewed with other proposed actions, have cumulatively significant impacts that can be discussed in the same impact statement. Similar actions may be considered together when the best way to adequately assess the combined impacts of the similar actions would be to do so under one impact statement.

The Sacramento District uses an independent utility test to determine whether its actions are connected to other actions. An action is said to have independent utility, thus not connected, if it would take place with or without any other actions. Applying this standard, the fill necessary for the Douglas 98 project has independent utility because it could move forward regardless of whether the other applications under the Public Notice are approved or the associated projects constructed. The applicant has included all fill necessary to construct required roadway, potable water, wastewater disposal and other infrastructure that it cannot otherwise obtain from currently existing infrastructure in the area.

Under the CEQ NEPA regulations, separate federal actions that have a cumulatively significant impact should also be included under the same NEPA review. This requirement is subject to a rule of reason: where projects that may ultimately necessitate Corps permit actions are insufficiently detailed to contribute to a meaningful analysis of their environmental impacts, the Corps is not required to include them. In this instance, all those activities within the Specific Plan area that have sufficient detail to be included in a cumulative analysis discussion, i.e., those that have submitted 404 permit applications, have been included within the cumulative impacts discussion of section V.F, above, in addition to earlier discussions of cumulative impacts in the area in the SD Project EIS/EIR and Community Plan/Specific Plan EIR. Using information from those previous studies as well as information in the current record, the cumulative impacts discussion in this Permit Evaluation concluded that this permit action would not result in cumulatively substantial impact that would warrant the preparation of an EIS.

CNPS commented that a piecemeal approach would discount significant cumulative effects on vernal pools of proposed fill under the Public Notice, and that an Environmental Impact Statement was needed to assess the combined effect of development and alternatives. NEPA and its implementing regulations do not require an EIS for this permit decision. Under NEPA and federal

law applying NEPA, a federal agency must review its proposed action to determine whether it will significantly affect the human environment, including cumulatively, and should prepare an EIS when, in the agency's determination, significant effects will occur that warrant the preparation of an intensive study of the agency's action and its effects, and when such an intensive study would provide additional meaningful information to the public and the decision-making agency. The potentially significant cumulative impacts of development of the entire Specific Plan and Community Plan areas have already been addressed by the County's publicly available Specific Plan EIR, as discussed in these findings. Preparation of an EIS for effects occurring as the result of the permitted fill would not provide additional information to the public or to the Corps. The preparation of an EIS does not have the potential to provide the Corps with additional information on impacts that are within its authority or ability to control. Last, the Corps, EPA, USFWS and other state and local agencies and landowners met to resolve the significant environmental concerns associated with the Sunrise Douglas Community Plan/SunRidge Specific Plan. As a result, the agencies produced a plan (A Conceptual-Level Strategy for Avoiding, Minimizing and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area, dated June 2004) and a map (Sunrise-Douglas Community Planning Area dated March 8, 2004) to significantly reduce impacts to waters by outlining large preserve areas along with a strategy for conservation, thereby obviating the need to prepare an EIS.

CNPS commented that a County-wide study had shown the Community Plan area to have a high concentration and diversity of vernal pools. The applicant responded to the Service's similar comment in response to comment (2), above.

CNPS commented that the area hosted several listed species. However, the Service, through Section 7 consultation with the Corps, has determined that mitigation proposed by the applicant will offset impacts to listed species from the permitted fill.

CNPS requested that the permit applicants be required to include on-site preservation as part of their mitigation package for approved fill, and that it was not possible to fully mitigate for lost wetland area through preservation in distant areas of the County. The Conceptual Strategy and Conceptual Preserve map creates a preserve system for the Specific Plan area that includes on-site avoidance through the Specific Plan. According to the Conceptual Preserve map, on-site avoidance is not necessary at Douglas Road 98, particularly because the preservation of vernal pools on site would further degrade through time due to surrounding urban development, are small in

acreage and lack habitat connectivity.

CNPS requested that the Community Plan area contain a large core preserve area with inter-connected wildlife corridors. The Service, the Corps and EPA have collaborated to create such an area through the final Conceptual Strategy and Conceptual Preserve map.

CNPS requested that vernal pool creation be avoided, especially within undisturbed vernal pool landscapes. Douglas Road 98 proposes an off-site creation/restoration component to its mitigation proposal. The Corps and the Service both have final approval authority over this off-site creation/restoration component to assure that created wetlands and vernal pools do not damage existing features and are created and managed appropriately.

(5) Stone Lakes National Wildlife Refuge Association (Stone Lakes) submitted similar comments as CNPS. Responses to the CNPS comments, at Section (4) above, are applicable to Stone Lake s comments. In addition, Stone Lakes commented that mitigation of impacts through preservation of vernal pools should preserve vernal pools with comparable geology, soil types, sizes, depths and densities. The applicant intends to preserve existing high quality vernal pool habitat at a Corps approved location.

Stone Lakes requested that all rare plant occurrences be preserved, particularly slender orcutt grass. The Conceptual Strategy does not call for a preserve on the project site. Any on-site preserve configuration would result in an isolated preserve and would not comply with the Ten Principles. Further, any on-site preserve that would be consistent with the principles and standards of the Conceptual Strategy would reduce the acreage available for development to a point that would preclude construction of a development consistent with the project purpose. The Corps and the Service have approved the applicant s proposal for the preservation component of its mitigation plan that would consist of preservation of 15.64 acres of vernal pool habitat at a Corps approved location. This provides a 4:1 ratio of wetlands supporting endangered and rare species, including the slender orcutt grass.

Stone Lakes comments that the public has not had an opportunity to comment on a specific preserve mitigation plan for the SunRidge area until this point. However, specific mitigation proposals are not typically contained in the public notice or circulated for comment.

(6) Butte Environmental Council (BEC) commented that the

applicants failed to provide alternatives to the project under 42 U.S.C. §§ 4332(2)(c)(Vi), & (E). However, Corps regulations do not required publication of alternatives in a Public Notice. (33 CFR Part 325.3.) Additionally, the Public Notice provides sufficient information for the public to consider and suggest possible fill alternatives to the Corps for consideration as part of the public interest review.

BEC commented that it was inappropriate for the Corps to evaluate the proposed permit actions noticed under the Public Notice as individual projects, and that such an approach would ignore the significant cumulative effects of the projects and others in the Community Plan area on the vernal pool ecosystem in Sacramento County. The applicant responded to similar comments from CNPS at section (4), above.

BEC commented that the Public Notice does not provide a cumulative impact analysis for public view. This document analyses potential cumulative impacts from the permitted fill. In addition, information on the cumulative impacts of proposed wetland and vernal pool fill has been available to the commenter through the Community Plan and Specific Plan EIR since 1998.

BEC requested that a more thorough mitigation and monitoring proposal be submitted for public review, and that preservation of intact vernal pools off-site was not adequate mitigation. The applicant responded to similar comment from CNPS and Stone Lakes at sections (4) and (5), above. The applicant's mitigation proposal for permitted fill has been reviewed by the Service, who determined that it offset impacts to listed vernal pool species and their habitats to be filled as part of the project.

BEC requested that permit processing be suspended until an EIS was prepared. We responded to a similar comment from CNPS at section (4), above. We do not believe an EIS is warranted for this permit action.

(7) Citizens Committee to Complete the Refuge (CCCR) commented that vernal pools in the Community Plan area should be considered an ARNI. EPA identified them as an ARNI.

CCCR commented that fill proposals noticed in the Public Notice were related by dependency on shared existing and proposed community infrastructure, and should therefore be considered as a single project. We have responded to a similar comment from CNPS, at section (4), above. The Douglas Road 98 project was given full consideration under the Conceptual Strategy.

CCCR commented that the applicants should prepare an Alternatives

Analysis under the 404(b)(1) guidelines to rebut the presumption that a practicable alternative exists to the proposed fill. We responded to a similar comment from the Service at section (2), above. The applicant has submitted an alternatives analysis, as discussed in section I of this decision document.

CCCR commented that the applicants had made no attempt to minimize impacts. The submitted 404(b)(1) analyzed three on-site avoidance alternatives. As discussed in this decision document, the alternatives analysis concluded that the applicant's proposed project was the least environmentally damaging practicable alternative.

CCCR commented that the Corps should prepare an EIS prior to rendering a permit decision, and that impacts from the applicant's proposed fill be considered in concert. We responded to a similar comment from CNPC in section (4), above.

CCCR commented that minimal information regarding mitigation for impacts to jurisdictional waters had been provided to the public. The applicant has indicated in its application that it will mitigate for impacts to vernal pools and wetlands permitted for fill through the purchase of mitigation credits at a Corps approved location, and creation at a Corps approved site. This is consistent with the Conceptual Strategy and Conceptual Preserve map created by the agencies.

(8) Mr. David Wyatt commented that the fill applications covered in the Public Notice be considered cumulatively for significant impacts on natural communities in the impact area. The applicant responded to a similar comment from CNPS in section (4), above. In addition, this decision document has considered the potential cumulative impacts of the permitted fill, consistent with the request of the commenter.

Mr. Wyatt commented that sensitive species surveys should be conducted to determine the presence/absence of listed species within the areas proposed for fill. The applicant responded to a similar comment from CNPS at section (4), above. The Service has issued a no-jeopardy biological opinion concerning the permitted fill for the Project, and has concluded that the applicant's proposed mitigation offsets impacts to listed species and their habitats.

Mr. Wyatt commented that the Corps' no net loss policy for wetlands required the consideration of creation of large preserves. The agencies' Conceptual Strategy and Conceptual Preserve map is intended to create a large preserve of vernal pool and wetland habitat. As proposed, the Douglas Road 98

project complies with the Conceptual Strategy and Conceptual Preserve map.

Mr. Wyatt suggested a 250-foot buffer for vernal pool preserve areas. Comment noted. The Conceptual Strategy created by the agencies incorporates buffer requirements for the created preserve.

(9) Ms. Mary Beth Metcalf, M.D. requested that an EIS be prepared, that public hearings be arranged to disseminate additional information collected on environmental impacts. The applicant responded to similar comments from CNPS and Stone Lakes at sections (3) and (4), above.

(10) Joan E. Berry commented that the Corps should preserve natural habitat in the Specific Plan area rather than approve development. The Corps, together with EPA and the Service, have identified large blocks of vernal pool and wetland habitat to be preserved in the Specific Plan area through the Conceptual Strategy, while still allowing reasonable economic use of privately owned land within the Specific Plan area.

(11) Irma Acevedo commented that it is inevitable and logical to deduce that by evaluating their applications as individual projects the U.S. Army Corps of Engineers would fail to provide true protection. We responded to similar comments from CNPS at section (4), above. Ms. Acevedo requested an analysis of alternatives to development within the Specific Plan area and that public hearings be held on the subject. We responded to similar comments from BEC and Stone Lakes, at sections (5) and (6), above.

(12) Rob Millberry commented that the vernal pool habitat within the Community Plan area, despite its subtlety should be saved because of their rarity and high quality. We responded to similar comments from Ms. Berry at section (10), above.

(13) Sara M. Lee commented that 10 percent of the remaining vernal pools in Sacramento County are included in the Community Plan area and the Corps should not approve their fill. We have responded to similar comments from Ms. Berry, in section (10), above. The Conceptual Strategy and Conceptual Preserve map was conceived in large part due to the agencies recognition of comments such as Ms. Lee's. The Strategy developed for the Specific Plan area permits compliance with Endangered Species Act and Clean Water Act protections for vernal pools in this area in conjunction with permitting reasonable development on private lands within the Specific Plan area. In this case, the permitted fill for Douglas Road 98 will impact isolated vernal pools that



are not scheduled for protection under the agencies Conceptual Preserve map.

Ms. Lee expressed concern that authorized fill of wetlands would result in negative impacts to water quality and greater demands on water supply. We have responded to similar comments from the Service regarding water quality at section (2), above. We did not conclude that the permitted fill would cause significant water quality or water supply impacts, and that the impact of the permitted fill for these categories of environmental impacts is adequately mitigated.

Ms. Lee commented that proposed fill would threaten the survival of vernal pool fairy shrimp. We responded to similar comments at section (2), above. Noting that the Service issued a no-jeopardy biological opinion for vernal pool fairy shrimp for the permitted fill covered by the Permit Evaluation, concluding that mitigation proposed by the applicant adequately offset impacts to fairy shrimp and its habitat resulting from the permitted fill.

Ms. Lee requested that the Service be consulted on the proposed fill and that mitigation should not be in form of creation. We responded to similar comments from the Service at section (2), above.

Ms. Lee expressed concern that the proposed fill for the Community Plan area would cause additional off-site impacts to hydrology of unfilled wetlands areas. The Service, in its no-jeopardy opinion, took indirect impacts to wetlands and vernal pools into account.

(14) M. Nasserri requested that the EPA, the Service and the Corps create a strategy for preserving wetlands and vernal pools in the Specific Plan area. The Conceptual Strategy and Conceptual Preserve map was designed to address this comment.

(15) Elizabeth Kuehner commented that the vernal pool species in the Community Plan area were worthy of preservation. We addressed similar comments from Ms. Lee and Ms. Berry at sections (10) and (13), above.

(16) Adrian A. Barnett commented the Corps should take action to preserve the Mather Field Vernal Pools. The permitted action will not impact vernal pools at Mather Field. The agencies are implementing the Conceptual Strategy to protect vernal pools in the Specific Plan area.

(17) Patricia Foulk commented that potential fill of wetlands within the Specific Plan and Community Plan area would lead to

irreversible fragmentation of vernal pools in these areas. Compliance with the agencies Conceptual Strategy and Conceptual Preserve map will assure that large, intact area of vernal pools and wetlands are preserved through the Specific Plan area. The Douglas Road 98 project is consistent with these plans.

Ms. Foulk commented that the fill proposed under the Public Notice would result in substantial loss of listed species. We have responded to similar comments from the Service in section (2), the CNPS in section (4), and Mr. Wyatt in section (8), above. The Corps has received a no-jeopardy biological opinion from the Service covering the permitted fill.

Ms. Foulk commented that development within the Community Plan area would impact hydrology in the Community Plan area and surrounding areas, and result in a loss of diversity of vernal pool types. The agencies Conceptual Strategy is designed to reduce impacts to wetlands and vernal pools within the SunRidge Specific Plan unpermitted areas. For the remainder of the Community Plan area, to the south, the agencies and landowners have agreed to prepare an Environmental Impact Statement to address impacts to vernal pools and vernal pool species. Together, these actions will assure that permitting actions in the Community Plan area will not significantly impact wetland hydrology.

Ms. Foulk commented that the success of creation mitigation is not scientifically supported and is not adequate mitigation for natural habitat. We have responded to similar comments from CNPS at section (4), above.

Ms. Foulk commented that the Specific Plan EIR did not sufficiently analyze wetland impacts and that an EIS should be prepared. We have addressed similar comments from CNPS at section (4), above. In this case, the permitted fill for the Douglas Road 98 project will not result in significant impacts to wetlands, either individually or cumulatively. As discussed, the permitted fill is considered the least environmentally damaging practicable alternative for this site, and will not result in jeopardy to listed wetland and vernal pool species. It is also consistent with the Conceptual Strategy and will contribute to preservation of areas identified on the Conceptual Preserve map. These measures will assure that the permitted fill for the Project will not have a cumulative impact to wetlands in the area.

Ms. Foulk commented that existing traffic conditions indicate the necessity of an EIS. Traffic decision document addresses the potential impacts to traffic from the permit fill. As discussed,

the permitted fill is not expected to contribute to any roadways or intersections expected to be significantly impacted due to traffic.

Ms. Foulk commented that small, vest pocket preserves would not sufficiently preserve vernal pool habitat and species. The permitted fill in this case would not contribute to the creation of vest pocket preserves. The Conceptual Strategy further addresses this concern through the creation of a larger preserve stretching across multiple properties in the Specific Plan area.

(18) Jean V. Shepard commented that all applications for fill covered by the Public Notice should be considered in concert as one application. We addressed a similar comment from CNPS and the Service at sections (3) and (4), above. Ms. Shepard requested that a large, connected wetland preserve be created in the area of the projects covered by the Public Notice. We addressed a similar comment from Ms. Foulk in (17), above.

(19) Carin submitted questions on behalf of Florence LaRiviere, Chairperson of Citizens Committee to Complete the Refuge. Responses to the CCCR comments are set out above at section (7), above.

(20) Bonnie Tran submitted comments regarding another application for fill noticed in the Public Notice.

(21) Alexandra Lamb commented that off-site preservation would not mitigate for potential impacts of the fill proposed in the Public Notice. Ms. Lamb commented that the Corps should preserve all vernal pools proposed for impact under the Public Notice and prepare an EIS covering the proposed fill. We addressed similar comments from CNPS at section (4), above.

(22) Patricia Jones expressed concern over use of creation as a method for mitigating impact to wetlands and vernal pools. Ms. Jones requested the preparation of an EIS for the fill proposed under the Public Notice. We responded to similar comments from CNPS at section (4), above.

b. Evaluation of Compliance with Section 404(b)(1) guidelines (restrictions on discharge, 40 CFR 230.10). (A check in a block denoted by an asterisk indicates that the project does not comply with the guidelines.):

1) Alternatives test:

Yes ☐ No ☒ i) Based on the discussion in II B, are there available, practicable alternatives having less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharges into waters of the United States or at other locations within these waters?

Yes ☒ No ☐ ii) Based on II B, if the project is in a special aquatic site and is not water dependent, has the applicant clearly demonstrated that there are no practicable alternative sites available?

2) Special restrictions. Will the discharge:

Yes ☐ No ☒ i) Violate state water quality standards?

Yes ☐ No ☒ ii) Violate toxic effluent standards (under Section 307 of the Act)?

Yes ☐ No ☒ iii) Jeopardize endangered or threatened species or their critical habitat?

Yes ☐ No ☒ iv) Violate standards set by the Department of Commerce to protect marine sanctuaries?

Yes ☒ No ☐ v) Evaluation of the information in II C and D above indicates that the proposed discharge material meets testing exclusion criteria for the following reason(s).

(x) based on the above information, the material is not a carrier of contaminants.

( ) the levels of contaminants are substantially similar at the extraction and disposal sites and the discharge is not likely to result in degradation of the disposal site and pollutants will not be transported to less contaminated areas.

( ) acceptable constraints are available and will be implemented to reduce contamination to acceptable levels within the disposal site and prevent contaminants from being transported beyond the boundaries of the disposal site.

3) Other restrictions. Will the discharge contribute to significant degradation of waters of the United States through adverse impacts to:

Yes ☐ No ☒ i) Human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife, and special aquatic sites?

Yes ☐ No ☒ ii) Life states of aquatic life and other wildlife?

Yes ☐ No ☒ iii) Diversity, productivity and stability of the aquatic ecosystem, such as loss of fish or wildlife habitat, or loss of the capacity of wetlands to assimilate nutrients, purify water or reduce wave energy?

Yes ☐ No ☒ iv) Recreational, aesthetic and economic values?

4) Actions to minimize potential adverse impacts (mitigation).

Yes ☒ No ☐ Will all appropriate and practicable steps (40 CFR 230.70 77) be taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystems?

Refer to Section II(b) (5) for special conditions.

c. General Evaluation [33 CFR 320.4 (a)]:

1) The relative extent of the public and private need for the proposed work. The project will address a public need for housing opportunities in an area with existing housing shortages. It will address the private need of the project proponent to realize the gain from project implementation.

2) The practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work. Alternative sites were considered, however, these sites were found to be impracticable (see IV.B above). Pursuant to these findings, the proposed fill is the least environmentally damaging practicable location and amount needed to affect the project purpose.

3) The extent and permanence of the beneficial and/or detrimental effects the proposed structures or work may have on the public and private uses to which the area is suited. The loss of 3.91 acres of waters in the project area will be effectively permanent and detrimental. The mitigation created by the applicant will be permanent, with dedication of a conservation easement or other appropriate legal instruments over mitigation areas. As identified in the County's General Plan, Community Plan and Specific Plan, the area has been chosen for urban residential development as it is proximate to regional job centers and transportation. Permitted fill will have a beneficial effect on meeting housing demand, and on the public and private uses for which this area has been designated through the County's zoning and land use designations.

d. Significant National Issues: None.

3. Determinations:

a. Finding of No Significant Impact (FONSI) (33 CFR Part 325). Having reviewed the information provided by the applicant, all interested parties and the assessment of environmental impacts contained in Part II of this document, I find that this permit action will not have a significant impact on the quality of the human environment. Therefore, an Environmental Impact Statement will not be required.

b. Section 404(b) (1) Compliance/Non-compliance Review (40 CFR 230.12).

( ) The discharge complies with the guidelines.

(x) The discharge complies with the guidelines, with the inclusion of the appropriate and practicable conditions listed above (in II.B.5) to minimize pollution or adverse effects to the affected ecosystem.

( ) The discharge fails to comply with the requirements of these guidelines because:

( ) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem and that alternative does not have other significant adverse environmental consequences.

( ) The proposed discharge will result in significant degradation of the aquatic ecosystem under 40 CFR 230.10(b) or (c).

( ) The discharge does not include all appropriate and practicable measure to minimize potential harm to the aquatic ecosystem, namely

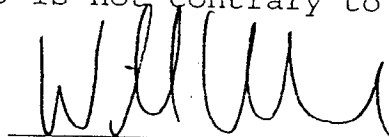
( ) There is not sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with the guidelines.

c. Section 176(c) of the Clean Air Act: I have analyzed the proposed project for conformity applicability and determined that the proposed activities in this permit action will not exceed de minimis levels of direct emissions of a criteria pollutant or its precursors, and are exempt by 40 CFR 93.152. Any later indirect emissions generally cannot be practicably controlled by the Corps of Engineers and, for these reasons, the permit decision does not

require a conformity determination.

d. Public interest determination: I find that issuance of a Department of the Army permit (with special conditions), as prescribed by regulations published in 33 CFR Parts 320 330, and 40 CFR Part 230 is not contrary to the public interest.

PREPARED BY:

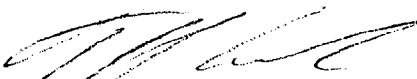


William Ness  
Chief, Sacramento County Office

DATE:

1/27/06

REVIEWED BY:

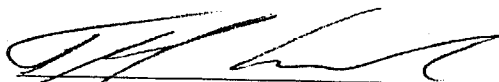


Tom Cavanaugh  
Acting Chief, Central California/Nevada Section

DATE:

1/31/06

APPROVED BY:



Tom Cavanaugh  
Acting Chief, Central California/Nevada Section

DATE:

1/31/06

- Appendix A Public Notice 200000336
- Appendix B Water Quality Certification,  
File No. WDID# 5A34CR00182
- Appendix C List of Form Comment Letter Authors to PN  
#200000336
- Appendix D Section 3.0, Environmental Setting, Impacts, and  
Mitigation Measures, of the July 2005, Mitigated  
Negative Declaration for the Sunridge East  
Projects.
- Appendix E November 2004, Regional Alternatives Information  
SunRidge Specific Plan Subarea, Sacramento County,  
California
- Appendix F January 14, 2005, Clean Water Act Section  
404(b)(1) Alternatives Analysis and On-Site  
Minimization Measures, Sunridge Property: Douglas  
Road 98
- Appendix G September 2005, Supplemental Alternatives  
Submittal, Douglas 98, Sunridge Specific Plan

DEPARTMENT OF THE ARMY PERMIT EVALUATION  
AND DECISION DOCUMENT

Applicant: Jim Galovan  
Grantline Douglas 103 Investors, LLC  
Application No.: 199700006

This document constitutes my Environmental Assessment, Statement of Findings and review and compliance determination according to the Section 404(b)(1) guidelines for the proposed work described in the attached Public Notice (Appendix A) as Douglas Road 103 (Application No. 199700006) (hereafter referred to as Douglas 103 or project).

Additionally, the Corps incorporates by reference the following documents: 1) Section 3.0, Environmental Setting, Impacts, and Mitigation Measures of the August 2005 Sunridge East Projects Mitigated Negative Declaration (Appendix C); 2) November 2004 Regional Alternatives Information SunRidge Specific Plan Subarea, Sacramento County, California (Appendix D); 3) April 2006 Section 404(b)(1) Supplemental Alternatives Analysis for Douglas 103 (Appendix E).

I. Proposed Project:

The proposed project is located within the SunRidge Specific Plan Area, which is within the larger Sunrise Douglas Community Plan Area, in Rancho Cordova, Section 10, Township 8 North, Range 7 East, on the U.S.G.S. Buffalo Creek 7.5 quadrangle, in Sacramento County, California. The maps of the site and the description of the proposed work are in the attached Public Notice, and further described below.

The project site encompasses 106.4 acres. The planned land uses for the Douglas 103 project include construction of approximately 40 acres of residential, park, and parkway development, 15.6 acres of commercial space, 7.3 acres of major roads, and a 43.8-acre wetland and habitat preserve. Additionally the project will construct off-site improvements to Douglas and Grantline Roads. The project will be constructed in four phases. The first phase includes construction of the Americanos Boulevard/Douglas Road intersection and widening of Douglas Road west of Americanos. Phase 2 involves widening Douglas Road from Americanos to Grantline Road, widening portions of Grantline Road north and south of Douglas, and the construction of Snyder Road on-site. Phase 3 includes construction of Americanos Boulevard through the Doug 103 site and the northwest development area.



Phase 4 involves construction of the eastern development area.

The site is comprised of level to gently rolling terrain, consisting mainly of non-native grasslands, and is located within the headwaters of the Morrison Creek watershed. Vernal pools lie within the grasslands. The majority of the site has been used historically as grazing land, which has not substantially altered the hydrology of the project site from its historical condition. There are no structures situated on the site.

#### Prior Environmental Review in the Sunrise Douglas Area:

The Sunrise Douglas area in southeast Sacramento County is generally comprised of the area bounded by Douglas Road to the north, Sunrise Boulevard to the west, Grant Line Road to the east and the Jackson Highway to the south. This area has been the subject of extensive land use planning and attendant environmental review processes under the California Environmental Quality Act (CEQA) and, to a lesser degree, the National Environmental Policy Act (NEPA).

Beginning in 1987, the Sammis Company (Sammis) initiated a development project in the Sunrise Douglas area that became known as the Sunrise Douglas Project (herein referred to as the SD Project). The SD Project was originally planned as an industrial project covering approximately 1,225.5 acres of land owned/controlled by Sammis, bounded on the west by Sunrise Boulevard, and on the north and south by Douglas Road and Keifer Boulevard, respectively. Sammis applied for County approvals for the industrial development, but changed its proposal to a predominantly residential project about two years later (in 1989), after the announcement of the potential closure of adjacent Mather Field. The residential project required a General Plan amendment, zoning change, and permit from the Corps for fill of jurisdictional areas within the SD Project area. Sammis request for General Plan amendment was the last of its kind in the Sunrise Douglas area because the County subsequently imposed a moratorium on general plan amendments pending its 1993 revision of the County General Plan.

The Corps and the County identified potentially significant environmental impacts associated with the SD Project, and as Lead Agencies, prepared a joint Environmental Impact Statement/Environmental Impact Report for the project under NEPA and CEQA, respectively (the SD Project EIS/EIR).

#### A. The SD Project EIS/EIR

The Final SD Project EIS/EIR, published in January, 1992,

evaluated the impacts of a primarily residential project on approximately 1,225 acres. According to the EIS/EIR, the information therein was intended for use by all agencies concerned with major developments in the County (SD Project EIS/EIR, p.1-1). The EIS/EIR determined the project area contained 82.14 acres of jurisdictional waters, including 68.06 acres of vernal pools. The development as proposed would impact approximately 38.15 acres, including 26.97 acres of vernal pools. The Corps considered this a significant impact without appropriate mitigation. The SD Project EIS/EIR proposed a combination of avoidance and on-site creation of wetlands and vernal pools within a 482-acre preserve in the SD Project area, and an off-site creation of wetlands and creation component. All told, the SD Project EIS/EIR required a minimum of 27.01 acres of vernal pools creation (3.8 acres on-site and 23.02 acres off-site) and 14.08 acres of wetland creation on- and off-site. The SD Project EIS/EIR concluded that these on-site and off-site measures, together with provisions of the Wetlands Compensation Plan authored for the wetland/vernal pool reserve, would at least maintain wetland and vernal pool functions and values in the areas, thus sufficiently mitigate impacts to wetland and vernal pools on site (SD Project EIS/EIR, pp. B-42-43).

The SD Project EIS/EIR considered all other potentially substantial impacts from the development of the project and proposed mitigation measures to reduce all but a few impacts to below significant levels, in accordance with the requirements of NEPA and CEQA. The SD Project has been substantially constructed; however, the off-site mitigation requirements of the project have not been satisfied.

#### B. Sunrise Douglas Community Plan Sunridge Specific Plan EIR

In 1993, at about the same time as the certification of the SD Project EIS/EIR, the County initiated a Specific Plan process for the greater Sunrise Douglas area, encompassing over 5,000 acres of land, including the SD Project. The County then modified its approach and adopted a more conceptual Community Plan for the greater Sunrise Douglas area, encompassing approximately 6,042 acres, while reducing the area covered by the detailed Specific Plan to include approximately 2,632 acres, including the SD Project already covered by the SD Project EIS/EIR. The County prepared the Sunrise Douglas Community Plan/SunRidge Specific Plan EIR (herein, Community Plan/Specific Plan EIR). For the Community Plan area, the Community Plan/Specific Plan EIR analyzed an overall conceptual framework and policy direction for urbanization of the area covered by the Community Plan. Conceptual land uses were assumed for the Community Plan area outside of the Specific Plan area in order to evaluate the

cumulative impacts of future urban development of this area. For the Specific Plan area, the EIR analyzed detailed land use and public facilities plans and corresponding zoning for near-term urban development within the Specific Plan area. The Community Plan/Specific Plan EIR also considered the findings and mitigation measures of the SD Project 404 permit because the SD Project is within the boundaries of the Specific Plan area. Thus, after the certification of the Community Plan/Specific Plan EIR in 2002, development proposed for 1,225 of the 2,632 total acres of the Specific Plan had been covered by the Corps EIS/EIR and the entirety of Plan area had been covered by a subsequently prepared EIR. The Corps and other federal agencies engaged the County and Landowners within the Specific Plan area to create a Conceptual Strategy for wetland preservation.

On March 6, 2006, the City of Rancho Cordova, which now has jurisdiction over the Sunrise Douglas Community Planning area, adopted the Mitigated Negative Declaration (MND) for the Sunridge East Projects, which include the Douglas Road 103 project. The City issued a Notice of Determination for the MND on March 7, 2006. In so doing, the City relied on the Sunrise Douglas Community Plan/SunRidge Specific Plan Final Environmental Impact Report, which was certified by the Sacramento Board of Supervisors on June 19, 2002.

#### C. Conceptual-Level Strategy for Avoiding, Minimizing and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area

In May, 2002, prior to its certification of the Community Plan/Specific Plan EIS/EIR, the County initiated meetings regarding potential wetlands and endangered species permitting strategies for the entire Community Plan area. The U.S. Fish and Wildlife Service (USFWS), the Corps, and the U.S. Environmental Protection Agency (USEPA) (collectively, the Federal Agencies or Agencies), the California Department of Fish and Game, and a majority of landowners and interested developers within the Specific Plan area attended these meetings. No resolution was reached. On July 17, 2002, the County approved both the Community Plan and the SunRidge Specific Plan. The conditions of approval for the Specific Plan require individual applicants to obtain any necessary Corps permit for fill of waters of the United States. On July 1, 2003, with the incorporation of the City of Rancho Cordova, the Community Plan area came under the City's land use jurisdiction.

In early 2004, then Congressman Doug Ose asked that all parties come together for further meetings among the stakeholders. The goal of these meetings was to cooperatively develop a conceptual

on-site avoidance and off-site mitigation strategy that would satisfy the mandates of federal law administered by the Federal Agencies while allowing for development of the Specific Plan according to existing land use plans. As a result, the Corps, USFWS, and USEPA developed a strategy that in concept would result in a workable framework for the planned development in the Community Plan and be consistent with the requirements under the Clean Water Act, the Endangered Species Act and other applicable laws.

The Conceptual-Level Strategy for Avoiding, Minimizing and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area dated June 12, 2004 (herein, Conceptual Strategy, incorporated by this reference) sets out 10 principles and standards to assist property owners in identifying alternatives that minimize individual and cumulative effects on aquatic resources and sensitive species. Together with the 10 standards and principles, the Agencies released a Conceptual Preserve Map showing recommended avoidance areas within the Community Plan area. The Map, together with the 10 principles and standards and an agency approved preserve management plan, was to create a recommended mitigation strategy designed to insure that the functions of the preserved aquatic resource habitat would be maintained, and to minimize both the project-by-project and cumulative effects associated with the development of the Community Plan.

For the unpermitted area of the SunRidge Specific Plan (the Sunridge Specific Plan area excluding the SD Project), the Corps requested that the permit applicants prepare an analysis of potential cumulative impacts and an evaluation of the practicability of different preserve designs. This analysis applied to seven individual applications for permits that were pending before the Corps, including three projects noticed in the same Public Notice as the Project (Public Notice Number 200000336). The other 3 projects (including Douglas 103) were separately noticed in Public Notice Numbers 200100230, 200100252, and 199700006).

The City of Rancho Cordova and the Corps are in the process of preparing an EIS/EIR for the SunCreek Specific Plan portion of the Community Plan.

Based on the Conceptual Strategy and Regional Alternatives Information (discussed below), the USEPA, by letter dated November 8, 2004, and the USFWS, by their Biological Opinion for the Douglas Road 103 Project dated March 16, 2006, confirmed their decision not to elevate the Corps Section 404 permit decision on Douglas 103 and other applications pending in the

SunRidge Specific Planning Area, pursuant to the 404(q) Memorandum of Agreement between the Federal Agencies. The Corps confirmed its concurrence of the Conceptual Strategy by letter dated October 29, 2004, to Mr. John Hodgson in response to his summary of the negotiations.

The Regional Alternatives Information SunRidge Specific Plan Subarea, Sacramento County, California, dated November 2004 (referred to herein as the Regional Alternatives Analysis) addresses regional and sub-regional cumulative impacts that may occur from the Conceptual Preserve plan developed by the Agencies. The Regional Alternatives Analysis analyzes the Conceptual Preserve and eight other alternative preserve configurations according to criteria for minimizing jurisdictional impacts and providing connected preserve area(s), in light of cost, logistics and existing technology. The Corps incorporates the Regional Alternatives Analysis into, and makes it a part of, this Environmental Assessment by reference.

#### Jurisdictional Impacts Related to the Douglas 103 Project

The project site and the off-site roadway improvement areas contain approximately 4.97 acres of waters of the United States. This jurisdictional acreage includes 4.23 acres of vernal pools, 0.37 acre of seasonal wetland, 0.09 acre of ephemeral drainage, and 0.28 acre of Morrison Creek, an intermittent drainage.

The project would result in the placement of fill material into 1.98 acres of waters of the United States, including 1.66 acres of vernal pools, 0.01 acre of depressional seasonal wetland, 0.21 acre of riverine seasonal wetland, and 0.07 acre of ephemeral drainage, and 0.03 acre of Morrison Creek. Approximately 1.92 acres of the 1.98 acres to be filled are considered habitat for listed vernal pool branchiopods. In addition to direct impacts, 5.27 acres of vernal pool branchiopod habitat located within the preserve or along the off-site roadway improvements have upland buffers of less than 250 feet and would be adversely indirectly affected by the surrounding development. A total of 7.25 acres of aquatic habitats would be permanently adversely affected by the proposed development (direct impact to 1.98 acres and indirect impacts to 5.27 acres). The project would be constructed in four phases. Phase I would include widening Douglas Road west of Americanos Boulevard and constructing the Americanos/Douglas intersection. Phase II would involve widening Douglas Road from Americanos Boulevard to Grantline Road, constructing Snyder Road on the project site, and widening portions of Grantline Road north and south of the Douglas Road intersection. Phase III would be construction of the northwest development area and Americanos Boulevard through the project

site. Phase IV would be construction of the eastern development area.

#### Proposed Mitigation

The applicant proposes as mitigation a combination of preservation and restoration/creation of waters of the United States, which is consistent with the Conceptual Strategy. Of the 4.97 acres of wetlands on the project site, the Applicant will avoid and manage in perpetuity 2.99 wetland acres within the approximately 43.8-acre on-site preserve. Additionally, the applicant will compensate off-site by preserving at least 5.89 acres of vernal pool habitat at a Corps approved location. The preserved lands will be monitored in perpetuity to provide for the long-term conservation of aquatic resources and endangered species. The proposed preservation equals a 2:1 preservation ratio for all directly impacted aquatic features, and a 1:1 preservation ratio for all indirectly impacted features within the central project site. No preservation is proposed to offset indirect impacts along the roadway improvement areas, as the applicant indicated that this would be financially infeasible.

The applicant proposes to restore wetlands at a 1:1 restoration/creation-to-loss ratio. The applicant's proposed restoration/creation component, which is based on 1.98 acres of direct impact to Waters of the United States and indirect impacts to 5.27 acres, would consist of restoration/creation of 7.25 acres of vernal pool habitat at a Corps approved location. Areas restored/created at the Corps approved mitigation site should retain similar functions to wetland areas impacted at the project site, and when combined with the proposed project level and plan level preservation, should assure no net loss of wetland functions or services as a result of the permitted fill. The Corps and the USFWS will review and approve the applicant's compensatory mitigation proposal, mitigation and monitoring plan, preserve management plan, and conservation easements prior to project implementation to ensure success of the creation and preservation areas. The compensatory mitigation would also be implemented in four phases, with compensation for each phase of development occurring prior to or commensurate with the phase's impacts.

#### II. Environmental and Public Interest Factors Considered:

A. Purpose and need: The overall project purpose is to construct a mixed use development of 75 to 150 acres within the Urban Services Boundary of Sacramento County. Construction resultant from the fill would therefore provide additional housing to accommodate job growth and help address the projected housing

shortage within Sacramento County.

B. Alternatives [33 CFR 320.4(b)(4), 40 CFR 230.10]

The applicant submitted an alternatives analysis for the project, which is incorporated by reference. In summary, the Regional Alternatives Analysis considered an analysis of potential alternative locations for the SunRidge Specific Plan. The Regional Alternatives Analysis concluded there were no practicable alternative locations for construction of the Specific Plan Area projects, including Douglas 103.

The applicant provided a supplemental alternative analysis in connection with four on-site design alternatives, including the proposed project. This alternatives information discussed the project within the framework of the ten principles and standards discussed in the Conceptual Strategy, and analyzed its level of compliance with the principles and the associated preserve map created for the entire Specific Plan area.

1. No action. The no permit alternative is the same as the full avoidance alternative discussed in the applicant's supplemental alternatives analysis. To avoid direct and indirect impacts to the aquatic environment, the no permit alternative would require avoidance of all waters of the U.S., including a 250-foot buffer. This would require avoidance of 94.1 acres of land area (out of the 106.7 total), with 12.6 acres remaining for development. The remaining developable acreage would be further constrained by the transmission lines transecting the northwest portion of the Project site and the size and sprawling pattern of the aquatic resources across the site. The applicant also evaluated the no permit alternative with a 50-foot buffer. This analysis yielded a remaining net developable acreage (which excludes 7.3 acres of major roads and 79.6 acres of open space) of approximately 19.8 acres (out of the 106.7 total), resulting in linear, convoluted, or fragmented lands that would be inefficient to develop. Both buffer sizes would result in a no permit alternative that would not leave sufficient contiguous land to feasibly construct a residential development. In considering alternatives that would avoid all jurisdictional waters, the applicant included spanning structures to avoid Morrison Creek and underlying wetlands for the expansion of Douglas Road and the construction of Americanos Boulevard. Based upon a review of information provided by the applicant, the Corps determined the no permit alternative does not constitute the least environmental damaging practicable alternative because it would not meet the overall project purpose and would result in a prohibitory increase in the cost per net developable acre.

2. Other project designs (smaller, larger, different, etc.). The applicant provided information on one avoidance alternative, which would result in a 50-foot buffer around 4.07 acres of jurisdictional waters in the central and eastern portions of the site. However, based on a review of information provided by the applicant, the Corps determined this alternative would result in a substantial decrease of developable acreage and would be inconsistent with the overall project purpose.

3. Other sites available to the applicant: The applicant was unable to identify any sites within the Specific Plan area which were available and of sufficient size.

4. Other sites not available to the applicant. (40 CFR 230.10): The Regional Alternatives Analysis considered eight potential alternative sites within the Specific Plan area. As discussed in the Regional Alternatives Analysis, these sites did not meet the availability criterion because they were currently under development by other owners, and/or did not meet the environmental criterion because they were not less environmentally damaging as they were likely to have equal or greater impacts to aquatic ecosystems on their sites.

5. Corps selected alternative: The Corps' selected alternative is the applicant's preferred alternative with inclusion of the following special conditions:

1. The project shall comply with the provisions of the Conceptual Level Strategy for Avoiding, Minimizing, and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area dated June, 2004.

2. This Corps permit does not authorize you to take any threatened or endangered species, in particular the vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardii*), or designated critical habitat. In order to legally take a listed species, you must have a separate authorization under the Endangered Species Act Section 10 permit, or a Biological Opinion under Endangered Species Act Section 7, with incidental take provisions with which you must comply.) The USFWS Biological Opinion (Number 1-1-06-F-0041, dated March 16, 2006), contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with incidental take that is also specified in the Biological Opinion. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with the incidental take statement in the Biological Opinion, which terms and conditions are



incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the Biological Opinion, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its Biological Opinion, and with the Endangered Species Act. The permittee must comply with all conditions of this Biological Opinion, including those ascribed to the Corps.

3. You shall develop a final comprehensive mitigation and monitoring plan, which must be approved by the Army Corps of Engineers prior to initiation of construction activities. The plan shall address all mitigation phases and include mitigation location and design drawings, vegetation plans, including target species to be planted, and final success criteria, presented in the format of the Sacramento District's Habitat Mitigation and Monitoring Proposal Guidelines, dated December 30, 2004. The purpose of this requirement is to insure replacement of functions and values of the aquatic environment that would be lost through project implementation.

4. To mitigate for the loss of 1.98 acres of waters of the United States, and indirect impacts to an additional 5.27 acres of waters of the United States, you shall construct 7.25 acres of vernal pool habitat at a Corps approved location. In order to help ensure the success and long-term viability of the created habitats, they should be created at a density that approximates that found near the creation site in naturally-occurring complexes of the same aquatic type.

5. You shall construct the required compensatory mitigation for each phase; as shown by the enclosed May 02, 2007, electronic mail from Ellen Berryman of Berryman Ecological; concurrently with, or in advance of, the start of construction of that phase of the permitted activity.

6. You shall complete construction of the compensatory mitigation for each development phase by October 1st of the year in which the phase was initiated.

7. To insure that compensatory mitigation is completed as required, you shall notify the District Engineer of the date you start construction of each phase of the authorized work and the start date and completion date of each phase of the compensatory mitigation construction, in writing and no

later than ten (10) calendar days after each date.

8. To provide a permanent record of the completed compensatory mitigation work, you shall provide two complete sets of as-builts of the completed work within the off-site mitigation area(s) to the Corps of Engineers. The as-builts shall indicate changes made from the original plans in indelible red ink. The as-builts for each phase shall be provided to this office no later than 60 days after the completion of construction of the phase's mitigation area wetlands.

9. You shall establish and maintain, in perpetuity, wetland and wildlife preserves containing the 7.25 acres of created/restored vernal pool habitat required by Special Condition 4, the 2.99 acres of jurisdictional waters located at the on-site preserve, and 5.89 acres of naturally-occurring vernal pool habitat at a Corps approved location.

10. To minimize external disturbance to preserved or created/restored waters of the United States, you shall establish an adequate buffer, consisting of native upland or wetland vegetation surrounding the entire perimeter of all created, restored, or preserved waters of the United States, including wetlands within the off-site preserves. The buffer widths shall be proposed within the compensatory mitigation and monitoring plan and the preserve management plans and shall be explicitly approved in writing by the Corps prior to any work in waters of the U.S. The on-site preserve shall contain a buffer as shown on the enclosed site plan.

11. To insure that the preserves are properly managed, you shall develop specific and detailed preserve management plans for the on-site and off-site mitigation, preservation, and avoidance areas. The plans shall be submitted to and specifically approved, in writing, by the Corps of Engineers prior to engaging in any work authorized by this permit. The plans shall describe in detail any activities that are proposed within the preserve areas and the long term funding and maintenance of each of the preserve areas.

12. To prevent unauthorized access and disturbance, you shall, prior to December 31, 2007, install fencing and appropriate signage around the entire perimeter of the preserves. All fencing surrounding mitigation, preservation, avoidance, and buffer areas shall allow unrestricted visibility of these areas to discourage vandalism or disposing of trash or other debris in these areas. Examples

of this type of fencing include chain link and wrought iron.

13. To protect the integrity of the preserves and avoid unanticipated future impacts, no roads, utility lines, trails, benches, equipment or fuel storage, grading, firebreaks, mowing, grazing, planting, disking, pesticide use, burning, or other structures or activities shall be constructed or occur within the on-site or off-site mitigation, preservation, and avoidance areas without specific, advance written approval from the Corps of Engineers.

14. Prior to initiating any activity authorized by this permit, you shall, to insure long-term viability of mitigation, preservation, and avoidance areas:

a. Establish fully-funded endowments to provide for maintenance and monitoring of the on-site and off-site mitigation, preservation, and avoidance areas.

b. Designate appropriate and Corps-approved conservation-oriented third party entities to function as preserve managers and to hold the required conservation easements.

c. Record permanent conservation easements and deed restrictions maintaining all mitigation, preservation, and avoidance areas as wetland preserve and wildlife habitat in perpetuity. Copies of the proposed deed restriction and conservation easement language shall be provided to the Corps of Engineers for approval prior to recordation.

d. Provide copies of the recorded documents to the Corps of Engineers prior to the start of construction of any of the activities authorized by this permit. Construction may not commence until the Corps reviews the recorded documents and provides written approval.

15. To assure success of the preserved and created waters of the United States, you shall monitor compensatory mitigation, avoidance, and preservation areas for five years or until the success criteria described in the approved mitigation plan(s) are met, whichever is greater. This period shall commence upon completion of the construction of the mitigation wetlands. Additionally, continued success of the mitigation wetlands, without human intervention, must be demonstrated for three consecutive years, once the success criteria have been met. The mitigation plan will not be deemed successful until this criterion has been met.

16. You shall submit monitoring reports to this office for each year of the five-year monitoring period, and for each additional year, if remediation is required, by December 1st of each year. You shall submit an additional monitoring report at the end of the three-year period demonstrating continued success of the mitigation program without human intervention.

17. You must allow representatives from the Corps of Engineers to inspect the authorized activity and any mitigation, preservation, or avoidance areas at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

18. You shall have a biologist, who is familiar with vernal pools, monitor all construction activities within 250 feet of the preserve boundary. The monitor shall ensure no unauthorized activities occur within the preserve boundary during project implementation.

19. You shall design and construct all crossings of waters of the United States to retain a natural substrate, and to accommodate all reasonably foreseeable wildlife passage and expected high flows.

C. Physical/chemical characteristics and anticipated changes (check applicable blocks and provide concise description of impacts).

(X) Substrate: The substrate primarily consists of Redding Gravelly Loam and Fiddymont Fine Sandy Loam. The project site is characterized by flat terrain and gently sloping topography. The project would affect approximately 62.9 acres of soils (including 7.3 acres for major roads) on the 106.7-acre site. These impacts will be partially mitigated through the creation of 7.25 acres of vernal pool habitat at a Corps approved location. The impact on substrate overall is adverse but considered minor and therefore less than significant.

(X) Currents, circulation or drainage patterns: Site drainage occurs to the south and southwest through surface or near surface flows. Filled areas will be developed as part of the Corps Selected Alternative and drainage from these areas will be re-routed to the extent necessary to comply with post-construction stormwater plans for the project site. Runoff from the Corps Selected Alternative will be conveyed off-site via storm drain to a storm water detention basin. The applicant is expected to comply with all post-construction storm water

treatment requirements as set out in the City of Rancho Cordova's MS-4 permit and implement necessary water quality Best Management Practices to avoid the potential for substantial adverse nuisance flows from the project to enter into waters of the United States. As a result, off-site impacts will be adverse but should be minor and less than significant.

(X) Suspended Particulates; Turbidity: Wetlands on-site likely have slightly turbid water during the rainy season. There is potential for increased turbidity during and after project construction. This potential will be minimized through compliance with the City of Rancho Cordova's MS-4 permit. Water quality BMPs required under the City's MS-4 permit will avoid substantial adverse impacts resultant from the entrance of suspended particulates and turbid runoff into waters of the United States. Only minimal impacts are expected provided the applicant complies with the State Water Quality Certification.

(X) Water quality (temperature, salinity patterns and other parameter): Filled areas developed as part of the Project have the potential to contribute urban pollutants to runoff from the site into waters of the United States. These pollutants could include hydrocarbons, nitrates and ammonia, and heavy metals. As with turbidity, the project is required to implement construction and operational BMPs that will avoid substantial adverse impacts from polluted urban runoff into waters of the United States. Minimal impacts are expected provided the applicant complies with the State Water Quality Certification.

(X) Flood control functions: The entire project site is outside the 500-year floodplain and the project does not place housing within any 100-year flood hazard areas. The Flood control infrastructure for the project will avoid substantial adverse effects from the permitted fill on downstream areas.

(X) Storm, wave and erosion buffers: Jurisdictional areas on the Project site currently provide only minimal erosion buffers, consisting mainly of existing vegetation within the jurisdictional areas. The permitted fill will impact the existing vegetation, but any impact to erosion buffers will be minimized through implementation of construction and operational storm water BMPs that will include the timely revegetation of filled areas left exposed, and detention of project runoff to prevent significant adverse erosion off-site. The City of Rancho Cordova's MND for the Sunridge East projects also addressed this issue on pages 3-31 through 3-36, and called for mitigation measures MM 8.1, MM 8.2a, MM 8.2b, and MM 8.2c, which if implemented should ensure less than significant impacts.

( ) Erosion and accretion patterns: No effect.

(X) Aquifer recharge: Groundwater recharge in the project area occurs primarily along the Morrison Creek drainage on the project site. Soils and underlying hardpan in the preserve area on the project site result in little infiltration from the undeveloped portions of the project area. Aquifer recharge from the project site is therefore minimal because of these site conditions. Runoff from new impervious surfaces created as a result of the permitted fill would be collected and diverted through on-site drainage controls and ultimately released downstream. Some infiltration from these features would occur. Thus, recharge would still occur, but at different locations and at different rates than under existing conditions, and no substantial adverse effects would likely occur.

( ) Baseflow: No effect.

Additionally, for projects involving the discharge of dredged material:

( ) Mixing zone, in light of the depth of water at the disposal site; current velocity, direction and variability at the disposal site; degree of turbulence; water column stratification discharge vessel speed and direction, rate of discharges per unit of time; and any other relevant factors affecting rates and patterns of mixing. No effect.

D. Biological characteristics and anticipated changes (check applicable blocks and provide concise description of impacts)

(X) Special aquatic site (wetlands, mudflats, coral reefs, pool and riffle areas, vegetated shallows, sanctuaries and refuges, as defined in 40 CFR 230.40-45): The project site currently contains 4.6 acres of special aquatic sites. The project, as proposed, would result in the permanent loss of 1.88 acres of special aquatic sites, including 1.66 acres of vernal pools and 0.22 acre of seasonal wetlands. The project, however, would also include a 43.8-acre preserve containing 2.73 acres of special aquatic sites, including 2.57 acres of vernal pools and 0.16 acre of seasonal wetlands.

Compensatory mitigation will consist of restoration/creation of 7.25 acres of vernal pools on appropriate soils at a Corps approved location, which provides a 1:1 ratio of impacted to created wetlands. Areas restored or created should retain similar functions as wetland areas impacted in the Project site, assuring no net loss of wetland acreage and functions as a result

of the permitted fill. The preservation component consists of preserving 5.89 acres of high functioning and naturally occurring vernal pools offsite at a Corps approved location. With implementation of the compensatory mitigation, impacts to special aquatic sites will not be significant.

(X) Habitat for fish and other aquatic organisms: Habitat for aquatic invertebrates, including the federally listed vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardii*) will be adversely affected by the permitted fill.

The applicant has proposed measures designed to mitigate impacts to aquatic habitat from the proposed fill. Mitigation includes off-site preservation of high quality vernal pool habitat at a Corps approved location, in addition to creation of vernal pool habitat at a Corps approved location. The preserved habitat will be similar to those areas impacted. The proposed mitigation ratios for direct impacts to vernal pool branchiopod habitat are 1:1 for off-site creation and 2:1 for off-site preservation. The proposed mitigation ratios for indirect impacts to vernal pool branchiopod habitat, not located along the proposed Douglas Road or Grantline Road improvements, are at 1:1 for off-site creation and 1:1 for a combination of on-site and off-site preservation. The proposed mitigation ratio for indirect impacts along the roadway improvement areas is 1:1 creation/restoration. The preservation and creation sites will be maintained and preserved in perpetuity as wetland and wildlife habitat. These measures should mitigate the effects of the proposed fill on aquatic habitat to below significant levels.

(X) Wildlife habitat (breeding, cover, travel, general): The areas of proposed fill provide foraging habitat for raptors and other birds, and breeding and foraging habitat for terrestrial species such as coyotes and jack rabbits. Impacts to these habitat types will be offset by on-site and off-site preservation and off-site creation of aquatic habitats. Overall the impact should be adverse but minor and therefore not significant.

(X) Endangered or threatened species: As discussed previously, wetlands and vernal pools subject to fill are assumed by the applicant to contain the threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and the endangered vernal pool tadpole shrimp (*Lepidurus packardii*). The Service issued a no-jeopardy biological opinion (1-1-06-F-0041), dated March 16, 2006 on the proposed fill activities for the Douglas Road 103 project. The Service concluded that the proposed development will not jeopardize the continued existence of the listed vernal

pool crustaceans because mitigation proposed as part of the Project, plus compliance with the Conceptual Strategy and Conceptual Preserve Map will offset impacts to listed species and their habitats. The Biological Opinion requires that mitigation measures proposed by the applicant be implemented through the 404 permit, and the implementation of those mitigation measures is included as a condition of the permit issued. Based on the conclusions of the no-jeopardy opinion, and the proposed mitigation, the permitted fill will not have significant effects on endangered or threatened species.

(x ) Biological availability of possible contaminants in dredged or fill material, considering hydrography in relation to known or anticipated sources of contaminants; results of previous testing of material from the vicinity of the project; known significant sources of persistent pesticides from land runoff or percolation; spill records for petroleum products or designated (Section 311 of the CWA) hazardous substances; other public records of significant introduction of contaminants from industries, municipalities, or other sources: According to the City of Rancho Cordova's MND, on page 3-28, the project site has no known past hazardous materials involvement. Additionally, although there is documented groundwater contamination in the plan area, the project does not include the use of on-site wells. Therefore, the potential for the project to result in exposure to the groundwater contamination is unlikely.

E. Human use characteristics and impacts (check applicable blocks and provide concise description of impacts):

(x ) Existing and potential water supplies; water conservation: The project will not rely upon on-site wells due to documented groundwater contamination that precludes municipal use. Water will instead be provided by the local water district from a groundwater source (North Vineyard Well Field) outside the project area. The Sacramento County Water Agency has considered the effect the project would have on water supply in their Zone 40 Water Supply Plan EIR, as has the City of Rancho Cordova in their General Plan EIR. The City, in their General Plan EIR concluded that adequate water supplies are available to serve buildout to the City's corporate limits, which includes the project and Sunrise Douglas Community Plan Area. The project does not include any water conservation measures. Any such measures, such as mandating low flow showerheads or restricting landscape watering, would be a result of local requirements. The project's effect on existing water supplies should be adverse but minor and therefore not significant.

( ) Recreational or commercial fisheries: No effect.



( ) Other water related recreation: No effect.

(X) Aesthetics of the aquatic ecosystem: The aquatic habitats on the project site are of high aesthetic function as they primarily consist of vernal pools which are renown for their unique floristic display. While the project would result in the loss of almost 2 acres of vernal pools, the effect will be reduced to a less than significant level through the proposed on-site and off-site preservation and restoration of vernal pool habitats.

( ) Parks, national and historic monuments, national seashores, wild and scenic rivers, and wilderness areas, research sites, etc.: No effect.

(X) Traffic/transportation patterns: Current traffic and transportation patterns in the area of the proposed project demonstrate growth underway in Sacramento County. Small collector roads connect to large arterial roadways. Potential traffic impacts were addressed in the Traffic Circulation Section of the Sunrise Douglas Community Plan and Sunridge Specific Plan (SDCP/SRSP) Master Environmental Impact Report (EIR). The SRSP would increase A.M. and P.M. peak hours and daily vehicle trips compared to existing traffic conditions. The SDCP/SRSP EIR identified traffic and circulation mitigation measures for development projects to adopt. The traffic impacts resulting from the project would be adverse but are considered minor overall, and therefore not significant when incorporating mitigation measures.

(X) Energy consumption or generation: Implementation of the Project would require energy for grading and fill, and would require additional energy for construction, operation and maintenance of improvements, and the resulting habitation. The applicant has indicated that there is adequate capacity available to serve these future energy needs. Therefore the impact is considered adverse but minor, and therefore not significant.

( ) Navigation: No effect.

(X) Safety: The project will implement construction safety measures such that there is no potential for a significant effect to safety. The Project also includes roadway improvements which should improve local traffic safety conditions.

(X) Air quality: The proposed permit has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. The Corps has determined that the activities proposed under this permit will not exceed de

minimis levels of direct emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit action.

(X) Noise: Noise levels resulting from Construction and habitation of the Project are expected to meet the County Noise Level Performance Standards (NLPSS) and County Land Use Compatibility standards set by the County's General Plan Noise Element (Community Plan/Specific Plan EIR, pp. 12.9c). These indicators are a threshold used to assess noise impacts, and indicate the Project will not result in significant noise impacts.

(X) Historic properties (Section 106 National Historic Preservation Act): According to the information available, including Peak and Associates' *Determination of Eligibility and Effect for the Douglas Road 103 Project Area*, the project site does not contain any sites listed, or eligible for listing, on the National Register of Historic Places. No previously recorded prehistoric or historic resources exist within the project site. Therefore, the proposed action is not expected to have an effect on historic properties.

(X) Land Use Classification: The proposed fill activity will occur in conjunction with construction of residential development on lands previously used for agricultural activities. These lands are located within the General Plan Urban Policy Area and are shown as new Urban Growth Area in the Sacramento County General Plan, indicating the County's intent to plan for the urbanization of this area within the 20-year time frame of the General Plan. (Community Plan/Specific Plan EIR, p. 3.5.) Therefore the project will not have significant effects on the land use classification of the Project area.

(X) Economics: Construction associated with the project will provide jobs and may generate revenue for the local economy. In the long term, the project will help to address the projected housing demand in the Sacramento County area.

(X) Prime and unique farmland (7 CFR Part 658): The California Department of Conservation's Farmland Mapping and Monitoring Program designated the project site as grazing land and farmland of local importance, not as prime or unique farmland. According to the City of Rancho Cordova's MND, neither the grazing nor farmland of local importance designation qualifies the project site as prime and unique farmland.

Therefore, the project will have no effect on prime and unique farmland.

(X) Food and fiber production: The project area has historically been used for cattle grazing which would likely have resulted in the production of beef and leather. As grazing of the property does not appear to have been intensive, the project would result in an adverse but minor effect on food and fiber production.

(X) General water quality: The existing quality of water in wetlands and other waters of the United States on the project site results from local precipitation, drainage from adjacent areas and residues of agricultural chemicals on site. Fill of wetlands and construction of the applicant's proposed project has the potential to add urban pollutant runoff.

Pursuant to Section 401 of the Clean Water Act, the applicant has obtained a technically conditioned certification from the Central Valley Regional Water Quality Control District, issued September 21, 2006 (WDID# 5A34CR00258). The 401 Certification requires the applicant to implement measures to adequately protect the identified beneficial uses of surrounding and downstream water courses. The applicant will also comply with all post-construction storm water treatment requirements as set out in the City of Rancho Cordova's MS-4 permit and implement necessary water quality Best Management Practices to prevent substantial impacts to the water quality of surrounding and downstream areas. With implementation of the water quality certification conditions, impacts to water quality will be less than significant.

(X) Mineral needs: Current activities at the project site do not require mineral needs. Construction of the project will necessitate the importation of aggregate, concrete, and asphalt. These materials will likely be supplied locally. No negative impacts are expected.

(X) Consideration of private property: The project area is currently private property owned by the applicants. The project is being permitted primarily as proposed and the applicant's use of private property has been given appropriate consideration.

(X) Minority and Low Income Populations: The proposed action has been evaluated in accordance with Title VI of the Civil Rights Act and Executive Order 12898 regarding environmental justice populations. Impacts to the minority and low-income populations in the permit area will not be disproportionately high.

( ) Other:

**F. Summary of secondary and cumulative effects:**

Vernal pool habitats within 250 feet of project development will be indirectly impacted due to increased human presence, changes to hydrology or other created conditions. Habitat to the north of Douglas Road and west of Grantline Road will be indirectly impacted by the proposed road improvements. Because lands immediately to the east, west, and south are within the approved Sunrise Douglas Community Plan/SunRidge Specific Plan area, habitat in these areas would for the most part be directly removed and offset by adjacent proposed developments and the terms and conditions imposed on them through the Section 7 or DA permit process. The applicant's proposed mitigation measures for indirect impacts resulting from the central development (1:1 preservation and 1:1 creation) should sufficiently offset indirect impacts to vernal pool habitat when taken into consideration with the overall level of preservation in the plan area.

Cumulative effects are the incremental effects of the agency's proposed action, and past, present, and reasonably foreseeable future actions in the locale of the agency's action. For analysis of cumulative impacts, the Corps has focused on the larger 1,345-acre subarea of the SunRidge Specific Plan area because a number of actions are currently pending in the area that could result in a potentially substantial cumulative effect. The City of Rancho Cordova has completed the land use entitlement process for each of these projects within this area, and the proposed actions are well defined and the potential impacts are foreseeable. Moreover, each of the 404 permit applications pending in the SunRidge subarea are for geographically contiguous jurisdictional features and the permitted actions are planned to occur roughly during the same time frame. Because of the certainty of the land use entitlements, and the related geography and timing of the effects, they have the potential to be cumulative.

The Conceptual Strategy, and the detailed analysis in the Regional Alternatives Information address potential cumulative effects to both aquatic and non-aquatic resources in the Subarea. The collaborative effort of the Federal Agencies and the numerous applicants participating in the Conceptual Strategy resulted in the development of guidelines designed to preserve wetlands and vernal pools in the area that collectively reduced adverse effects to jurisdictional waters from almost 60 acres under the adopted Specific Plan, to just over 44 acres, while preserving 41.2% of vernal pool habitat within the Specific Plan. Each

project has agreed to demonstrate consistency with the Conceptual Strategy and to incorporate mitigation that will ensure no net loss of wetlands. It is estimated that over 50% of the waters in the Community Planning Area will be protected under the conceptual preserve design. This is a substantial reduction of impacts to waters of the U.S. as compared to the proposed level of development from the County of Sacramento. Thus, the implementation of the Conceptual Strategy by each project results in avoidance of adverse cumulative effects by (1) increasing avoidance and preservation of wetlands and vernal pools within the Subarea from what was initially proposed under the Specific Plan, (2) strategically identifying avoidance areas in a manner that minimizes edge-to-area ratios and maximizes connectivity, (3) coalescing the individual projects' avoidance and minimization efforts into a regional reserve designed to connect to the previously approved and existing Anatolia Preserve, thereby increasing connectivity between project avoidance areas and connectivity to downstream wetlands and vernal pools, and (4) creating large, intact corridors supporting the Morrison and Laguna Creek watersheds and associated vernal pools in the Specific Plan area. The Conceptual Strategy also sets out principles and standards for development surrounding the avoided wetlands and vernal pools that will reduce urban edge effects on these areas and to promote long-term retention of wetland and vernal pool functions. Last, the Conceptual Strategy areas are required to be monitored and managed in perpetuity according to the preserve management plan to be submitted for Federal Agencies approval. The measures specified in the Conceptual Strategy for the creation of a preserve according to the Conceptual Preserve map will avoid cumulatively substantial impacts to jurisdictional wetlands and vernal pools within the Specific Plan area. For projects that demonstrate consistency with the Conceptual Strategy, compliance with the Strategy will be incorporated as a condition of the Section 404 permit.

Future projects in the Sun Creek portion of the Community Plan area are as yet too uncertain to include within a cumulative impacts assessment at this time. The City of Rancho Cordova has prepared a draft Specific Plan for the SunCreek portion of the Community Plan area, which is immediately to the south of the SunRidge Specific Plan area. The Corps and the City have begun preparation of a joint EIS/EIR for the SunCreek Specific Plan area, which will further consider potential cumulative effects. The Community Plan/Specific Plan EIR does not provide more than conceptual information on jurisdiction impacts within the SunCreek area (Community Plan/Specific Plan EIR, p.3.5.) The current EIS/EIR process will modify and refine land uses in this area, including the creation of a jurisdictional wetland and vernal pool preserve within the SunCreek area. Although impacts

to wetlands are likely, because the EIS/EIR process is at an early stage it is not reasonably foreseeable to predict the impacts that could result from that future project. Subsequent applications for fill for projects within the Community Plan area will also be appropriately evaluated under NEPA and the conceptual strategy.

Together, past measures taken to reduce impacts at the Anatolia project (SD Project) combined with measures specified in the Conceptual Strategy and Conceptual Preserve for the SunRidge Specific Plan area, as implemented by each project, assure that adverse effects to jurisdictional wetland and vernal pool areas will not be cumulatively significant.

In addition to potential cumulative impacts to jurisdictional wetlands and vernal pools, the development of the project, in conjunction with development of other projects noticed in PN# 200000336 and others within the Specific Plan area, may have cumulative impacts to other categories of the human environment. The County's Community Plan/Specific Plan EIR discusses potentially substantial cumulative effects from development in the Specific Plan area. The County identified mitigation measures through the Specific Plan EIR, and incorporated land use planning policies within the Specific Plan that are designed to address cumulative impacts in these other categories such as traffic, noise, air quality and groundwater levels. The mitigation measures in the City of Rancho Cordova's Mitigated Negative Declaration for the Sunridge East Properties, including the Douglas Road 103 Project, in addition to measures implemented by the County's adoption of the SD Project EIS/EIR Mitigation and Monitoring Program, and future mitigation measures created for the SunCreek Specific Plan area, will assure adequate treatment of these categories of cumulative impacts. Therefore, cumulative impacts are considered less than significant.

The growth inducing effects of the project are expected to be minimal as this area has already been designated as an urban growth area by the County's 1993 General Plan.

### III. Findings:

#### A. Other authorizations:

1. Water quality certification: The applicant obtained water quality certifications from the Central Valley Regional Water Quality Control Board on September 21, 2006, Files No. 5A34CR00258. The technically conditioned 401 certification is attached as Appendix B.

Date: \_\_\_\_\_  
 Issued: \_\_\_\_\_X\_\_\_\_\_  
 Denied: \_\_\_\_\_  
 Waived: \_\_\_\_\_

Special Conditions: Yes X No \_\_\_\_\_ (if yes see attached)

2. State and/or local authorizations (if issued): Streambed Alteration Agreement. Prior to engaging in any work authorized by this permit, the applicant will obtain a streambed alteration agreement if required by the California Department of Fish and Game.

B. A complete application was received on December 7, 2005. A Public Notice describing the project was issued on December 22, 2005, and sent to all interested parties including appropriate state and Federal agencies (Public Notice No. 199700006). Only one comment letter was received. That comment letter, from the U.S. Environmental Protection Agency, was reviewed and is summarized and responded to below:

U.S. Environmental Protection Agency (January 10, 2006)

Comment 1: While the applicant's proposal could be refined to comply with the Conceptual Strategy and the preserve map of the parcels within the SDCPA, it is not currently consistent with them or the overarching Federal Guidelines. The primary flaws are the lack of a compensatory mitigation plan and alternatives analysis (both offsite and onsite).

Response: The project includes a compensatory mitigation plan and other measures to mitigate for impacts to waters of the United States and aquatic habitat. More specifically, the project includes as mitigation a combination of preservation and restoration/creation of waters of the United States, which is largely consistent with the Conceptual Strategy and Reserve Map. Of the 4.97 acres of waters of the U.S. on the project site, 2.99 acres will be avoided and perpetually managed within the on-site preserve. Additionally, the project includes offsite preservation of approximately 5.89 acres of vernal pool habitat at a Corps approved mitigation site. The preserved lands will be managed and monitored in perpetuity to provide for the long-term conservation of aquatic resources and endangered species.

Vernal pools will also be restored/created at a 1:1 ratio for direct and indirect impacts at a Corps approved location. This restoration/creation component, which is based on 1.99 acres of direct impact to waters of the United States and indirect impacts to 5.27 acres of vernal pool branchiopod

habitat, would consist of restoration/creation of 7.25 acres of vernal pools at a Corps approved location. Areas restored/created at the Corps approved mitigation site should retain similar functions to wetland areas impacted at the project site, which when combined with the proposed project and plan level preservation, should assure no net loss of wetland acreage and function as a result of the permitted fill.

The project will be implemented pursuant to standards established in the Conceptual Strategy. As contemplated in the Conceptual Strategy, the 43.8-acre on site preserve proposed as part of the Douglas Road 103 Project will preserve a significant reach of Morrison Creek and be part of a larger 161-acre vernal pool grassland habitat preserve.

Projects in the Sunridge Specific Plan Area, including the Douglas Road 103 Project, were addressed in the Regional Alternatives Information, SunRidge Specific Plan Subarea (Foothill Associates 2004) document ( Regional Alternatives Analysis ), which evaluated a variety of alternatives to development contemplated in the Conceptual Strategy. The Regional Alternatives Analysis evaluated the preserve concept contained in the Conceptual Strategy together with eight alternative preserve alignments.

In addition to the Regional Alternatives Analysis, the applicant submitted to the Corps a Supplemental Alternatives Analysis for the Douglas Road 103 Project in April 2006. The Supplemental Alternatives Analysis evaluated an on-site alternative to the Douglas Road 103 Project, and based on its review of that information, the Corps concluded that the on-site design for the proposed project is the LEDPA.

Comment 2: The primary flaws are the absence of an evaluation of an elevated roadway system for north-south road proposed to traverse the wetland preserve. EPA would expect to see a full evaluation of this elevated roadway option. Our conditional agreement on the Conceptual Strategy and preserve map included a requirement for elevated roadways to ensure wildlife and hydrologic connectivity within the preserve areas.

Response: We concur that elevated roadways are important to ensure wildlife and hydrologic connectivity within the preserve area. This concern is reflected in the Conceptual Strategy and, in particular, in Principle #4 of the Ten Principles, which recommends the use of elevated roads, arched crossings and other practices for transportation corridors that must traverse Preserve Areas to minimize direct and indirect impacts to aquatic resources and maintain the integrity of Preserve Areas.



Consistent with Principle #4's guidance, the applicant's Supplemental Alternatives Analysis evaluated three spanning designs to avoid impacts to Morrison Creek. These designs were evaluated in a separate study, Alternative Spanning Designs to Avoid Impacts to Morrison Creek on Douglas 103 Project Site, attached to the Supplemental Alternatives Analysis as Attachment A. This study determined that the preferred alternative design is a 20-foot span, which is both financially and technologically feasible, and will result in no direct impacts to Morrison Creek. However, at the further urging of the Corps the applicant agreed to increase the proposed span over Morrison Creek from 20 to 32 feet, and to include 4 additional culverts along the preserve section of the roadway, each of which will provide a 6'11'w x 4'9"h wildlife crossing.

Comment 3: The Federal Guidelines are written hierarchically to ensure that utmost efforts are made to achieve the objective of the Clean Water Act to eliminate all discharges of pollutants into the Nation's waters. Once the applicant has demonstrated the proposed project is the least environmentally damaging practicable alternative, compensatory mitigation is used to offset unavoidable impacts that remain. The applicant should provide a compensatory mitigation plan that is consistent with the Conceptual Strategy. We urge you to work closely with the SDCPA landowners and developers to ensure that a single conservation easement holder is retained for the purpose of managing the preserves and monitoring compliance with compensatory mitigation requirements. To do otherwise would foster an unmanageable situation where different properties would be managed and monitored using disparate methods and timeframes. This, too, was discussed with the landowners, but a unified approach has still not been developed and presented to the federal agencies for review.

Response: See response to Comment 1 above regarding the applicant's mitigation proposal. The applicant and other project applicants in the area have proposed that preserve areas for projects in the Sunrise Douglas Community Plan Area be managed by the Sacramento Valley Conservancy and the easement and endowment for those areas be held by the Wildlife Heritage Foundation. The Service is in agreement with these arrangements. This unified approach should be satisfactory to EPA.

Comment 4: The proposed Douglas Road 103 project is within the Sunrise Douglas Community Planning Area (SDCPA). Over the years, EPA has invested heavily in assisting Sacramento County with regional planning and permitting, and we have been active in multi-party negotiations to resolve the regulatory issues for the entire 6,025-acre SDCPA. Our efforts on permitting for projects

within the SDCPA commenced in 1988 when the Sammis Corporation applied for a Clean Water Act (CWA) Section 404 permit from the U.S. Army Corps of Engineers (Corps) for what is now the Anatolia property.

Response: Comment noted.

Comment 5: In February 2004, a series of negotiations commenced wherein a local Congressman asked EPA, the Corps, and the U.S. Fish and Wildlife Service (FWS) to develop an integrated permitting strategy for the SDCPA to address provisions of the CWA and the Endangered Species Act (ESA). These talks involved the three federal agencies, all the landowners, developers, and their environmental consultants, and resulting in the following agency-produced documents: (1) a ten-point Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area, (Conceptual Strategy) dated June 2004; and (2) a preserve map of the parcels within the SDCPA that need protection in perpetuity so the entire development complies with the federal regulations. The agencies deemed these preserves minimally protective of aquatic resources, and virtually all the landowners in the Sunridge and Suncreek Community Planning Areas agreed upon the preserve configuration for both individual parcels and for the collection of parcels that comprise conservation corridors within the affected areas of the watersheds of Laguna and Morrison creeks.

Response: Comment noted.

a. Evaluation of Compliance with Section 404(b)(1) guidelines (restrictions on discharge, 40 CFR 230.10). (A check in a block denoted by an asterisk indicates that the project does not comply with the guidelines.):

1) Alternatives test:

Yes      No x      i)      Based on the discussion in II B, are there available, practicable alternatives having less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharges into waters of the United States or at other locations within these waters?

Yes x      No      ii)      Based on II B, if the project is in a special aquatic site and is not water dependent, has the applicant clearly demonstrated that there are no practicable alternative sites available?

## 2) Special restrictions. Will the discharge:

Yes            No ☒ i)    Violate state water quality standards?

Yes            No ☒ ii)   Violate toxic effluent standards (under  
Section 307 of the Act)?

Yes            No ☒ iii) Jeopardize endangered or threatened species  
or their critical habitat?

Yes            No ☒ iv)   Violate standards set by the Department of  
Commerce to protect marine sanctuaries?

Yes ☒ No        v)    Evaluation of the information in II C and D  
above indicates that the proposed discharge material meets  
testing exclusion criteria for the following reason(s).

(☒) based on the above information, the material is not a  
carrier of contaminants.

(    ) the levels of contaminants are substantially similar at the  
extraction and disposal sites and the discharge is not likely to  
result in degradation of the disposal site and pollutants will  
not be transported to less contaminated areas.

(    ) acceptable constraints are available and will be implemented  
to reduce contamination to acceptable levels within the disposal  
site and prevent contaminants from being transported beyond the  
boundaries of the disposal site.

3) Other restrictions. Will the discharge contribute to  
significant degradation of waters of the United States through  
adverse impacts to:

Yes            No ☒ i)    Human health or welfare, through pollution of  
municipal water supplies, fish, shellfish, wildlife, and special  
aquatic sites?

Yes            No ☒ ii)   Life states of aquatic life and other  
wildlife?

Yes            No ☒ iii) Diversity, productivity and stability of the  
aquatic ecosystem, such as loss of fish or wildlife habitat, or  
loss of the capacity of wetlands to assimilate nutrients, purify  
water or reduce wave energy?

Yes            No ☒ iv)   Recreational, aesthetic and economic values?

4) Actions to minimize potential adverse impacts (mitigation).

Yes x No Will all appropriate and practicable steps (40 CFR 230.70 77) be taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystems?

Refer to Section II(b) (5) for special conditions.

b. General Evaluation [33 CFR 320.4 (a)]:

1) The relative extent of the public and private need for the proposed work. The project will address a projected public need for housing opportunities in the Sacramento area. It will address the private need of the project proponent to realize the gain from project implementation.

2) The practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work. Alternative sites were considered, however, these sites were found to be impracticable (see IV.B above). Pursuant to these findings, the proposed fill is the least environmentally damaging practicable location and amount needed to affect the project purpose.

3) The extent and permanence of the beneficial and/or detrimental effects the proposed structures or work may have on the public and private uses to which the area is suited. The loss of 1.98 acres of waters in the project area will be effectively permanent and detrimental. The mitigation created by the applicant will be permanent, with dedication of a conservation easement over mitigation areas. As identified in the County's General Plan, Community Plan and Specific Plan, the area has been chosen for urban residential development as it is proximate to regional job centers and transportation. The project should have a beneficial effect on meeting the projected housing demand, and on the public and private uses for which this area has been designated through the County's zoning and land use designations.

c. Significant National Issues: None.

2. Determinations:

a. Finding of No Significant Impact (FONSI) (33 CFR Part 325). Having reviewed the information provided by the applicant, all interested parties and the assessment of environmental impacts contained in Part II of this document, I find that this permit action will not have a significant impact on the quality of the human environment. Therefore, an Environmental Impact Statement will not be required.

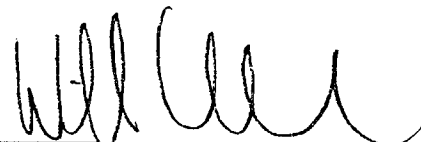
b. Section 404(b)(1) Compliance/Non-compliance Review (40 CFR 230.12).

- ( ) The discharge complies with the guidelines.
- (x) The discharge complies with the guidelines, with the inclusion of the appropriate and practicable conditions listed above (in II.B.5) to minimize pollution or adverse effects to the affected ecosystem.
- ( ) The discharge fails to comply with the requirements of these guidelines because:
  - ( ) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem and that alternative does not have other significant adverse environmental consequences.
  - ( ) The proposed discharge will result in significant degradation of the aquatic ecosystem under 40 CFR 230.10(b) or (c).
  - ( ) The discharge does not include all appropriate and practicable measure to minimize potential harm to the aquatic ecosystem, namely
  - ( ) There is not sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with the guidelines.

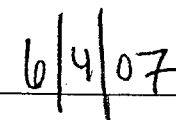
c. Section 176(c) of the Clean Air Act: I have analyzed the proposed project for conformity applicability and determined that the proposed activities in this permit action will not exceed de minimis levels of direct emissions of a criteria pollutant or its precursors, and are exempt by 40 CFR 93.152. Any later indirect emissions generally cannot be practicably controlled by the Corps of Engineers and, for these reasons, the permit decision does not require a conformity determination.

d. Public interest determination: I find that issuance of a Department of the Army permit (with special conditions), as prescribed by regulations published in 33 CFR Parts 320 330, and 40 CFR Part 230 is not contrary to the public interest.

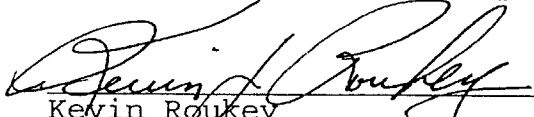
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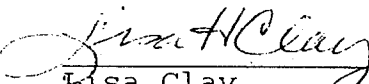
  
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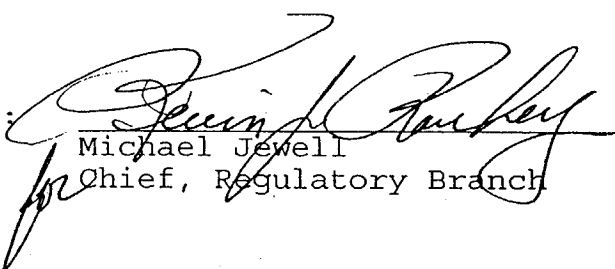
DATE:



Chief, Sacramento County Office

REVIEWED BY:  DATE: 6/5/07  
 Kevin Roukey  
 Chief, Central California/Nevada Section

REVIEWED BY:  DATE: 6/5/2007  
 Lisa Clay  
 Office of Counsel

APPROVED BY:  DATE: 6/5/07  
 Michael Jewell  
 Chief, Regulatory Branch

- Appendix A Public Notice 199700006
- Appendix B Water Quality Certification, File No. WDID# 5A34CR00258
- Appendix C Section 3.0, Environmental Setting, Impacts, and Mitigation Measures, of the SunRidge East Projects Mitigated Negative Declaration.
- Appendix D November 2004, Regional Alternatives Information SunRidge Specific Plan Subarea, Sacramento County, California
- Appendix E April 2006, 404(b)(1) Supplemental Alternatives Analysis for Douglas Road 103

# Clean Water Act §404(b)(1) Alternatives Supplemental Submittal

Sunrise Douglas Arista del Sol Property

Sacramento County, California

---

Prepared for:  
U.S. Army Corps of Engineers

On Behalf of:  
Pappas Investments  
2020 L Street  
Sacramento, CA 95814

April 21, 2006

Submitted by:  
 **FOOTHILL ASSOCIATES**  
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# Clean Water Act §404(b)(1) Alternatives Supplemental Submittal

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2020 L Street  
Sacramento, CA 95814

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RECEIVED  
APR 23 2006  
U.S. ARMY CORPS OF ENGINEERS  
SACRAMENTO DISTRICT

Submitted by:

 **FOOTHILL ASSOCIATES**

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Appendix A — Regional Alternatives Information Sunridge Specific Plan SubArea

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## 1.0 INTRODUCTION

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### 1.1 Applicant

Pappas Investments  
Attn: Thad Johnson  
2020 L Street, 5th Floor  
Sacramento, CA 95814

### 1.2 Applicant's Agents

Foothill Associates  
Attn: Ken Whitney  
655 Menlo Drive, Suite 100  
Rocklin, CA 95677  
(916) 435-1202

Sheppard, Mullin, Richter & Hampton, LLP  
Attn: Robert. Uram  
4 Embarcadero Center  
Seventeenth Floor  
San Francisco, CA 94111  
(415) 434-9100

### 1.3 Subject

Section 404 of the Federal Water Pollution Control Act (the "Clean Water Act" or "CWA") regulates the discharge of dredged or fill materials into waters of the United States ("Waters"). The Clean Water Act vests authority in the Army Corps of Engineers ("Corps") to regulate such discharges via a program of reviewing and selectively permitting requests for fill authorization. [33 U.S.C. § 1344 (d).]

### 1.4 Background

In the course of its permitting authority, the Corps must make a finding that its authorization to fill Waters complies with the environmental protection guidelines established by the Environmental Protection Agency ("EPA") at 40 CFR Part 230, known as the *Section 404(b)(1) Guidelines*, ("Guidelines"). In part to address their responsibilities under the Guidelines, the Corps and the EPA, together with the U.S. Fish and Wildlife Service (the "Service," together the "Agencies"), crafted *A Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving On-Site Aquatic Resource Habitat in the Sunrise Douglas Community Plan Area* (herein the "Conceptual Strategy").

The Conceptual Strategy is designed to result in a regional avoidance and preserve concept that meets the Agencies' requirements under the Clean Water Act, the Endangered Species Act and other applicable laws, and provide a workable framework for the planned development in the



Sunrise-Douglas Community Plan ("Community Plan") area and Sunridge Specific Plan ("Specific Plan") area (Figure 1). In conjunction with the Conceptual Strategy, the Agencies prepared a Conceptual Preserve map of vernal pool and wetland avoidance within the Community Plan area designed to minimize direct and cumulative impacts to vernal pool and wetland functions and values within the area (Figure 2). The Agencies' Conceptual Strategy also sets out 10 principles and standards to guide property owners in identifying project designs that minimize individual and cumulative effects on aquatic resources and sensitive species. Property owners within the non-permitted Subarea of the Specific Plan area also prepared and submitted to the Corps a Regional Alternatives Information document that analyzed the Preserve identified by the Conceptual Strategy, and eight alternative preserve alignments, according to selection criteria including logistics, environmental, cost and compatibility with existing land use designations (Appendix A). Of the proposed alternative preserve alignments, the Conceptual Preserve alternative, shown in Figure 2 best met the requirements of the selection criteria.

### 1.5 Objective

As requested by the Corps, this 404(b)(1) Alternatives Analysis document is provided as a supplement to the previously submitted Conceptual Strategy and Regional Alternatives Information.<sup>1</sup> An off-site alternatives analysis (OAA) for the entire Subplan Area was performed by the Sares-Regis Group (Sares-Regis, 1994) and was provided to the Corps previously. The intention of this document, as well as those previously provided, is to assist the Corps in establishing the Least Environmentally Damaging Practicable Alternative (LEDPA), thereby complying with the Guidelines.

Specifically, this document provides an analysis of three on-site design alternatives for the Pappas Investments property, including the Proposed Project. The alternatives are compared in terms of how well they conform to the principles and standards of the Conceptual Strategy, as well as the Guidelines. A discussion of the Arista del Sol project with respect to the ten principles and standards set out in the Conceptual Strategy is included in Appendix B.

### 1.6 Legal Framework

Any activity requiring an individual permit under Section 404 of the Clean Water Act must undergo an analysis of alternatives in order to identify the LEDPA pursuant to the requirement of the 404(b)(1) Guidelines. The Guidelines prohibit discharge of dredged or fill material to waters of the United States if there is a "practicable alternative to the proposed discharge that would have less impact on the aquatic ecosystem, provided that the alternative does not have other significant environmental consequences." [40 C.F.R. § 230.10(a).] An alternative is practicable "if it is available and capable of being done after taking into consideration cost, existing technology and logistics in light of the overall project purposes." [40 C.F.R. §§ 230.10(a) and 230.3(q).] "If it is otherwise a practicable alternative, an area not presently owned by an applicant which could reasonably be obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed activity may be considered." [40 C.F.R. § 230.10(a)(2).] Thus

<sup>1</sup> The Corps requested "on-site alternatives information to be provided by each applicant regarding the proposed steps to be taken on the Project Site to comply with the Conceptual Strategy." Letter from M. Jewell to J. Hodgson, October 29, 2004.



an alternative must meet the overall project purpose, the purpose for which the applicant submits the request for fill authorization, and must be consistent with cost, logistical and availability criteria to be deemed the LEDPA.

If the proposed activity would involve a discharge into a special aquatic site such as a wetland, the Section 404(b)(1) Guidelines distinguish between those projects that are water dependent and those that are not. A water-dependent project is one that requires access to water to achieve its basic purpose, such as a marina. A non-water dependent project is one that does not require access to water to achieve its basic purpose, such as a housing development. The Project purpose here is to build a medium-scale residential community in accordance with the Sunridge Specific Plan. The Proposed Project is not water dependent.

The Section 404(b)(1) Guidelines establish two presumptions for non-water dependent projects that propose a discharge into a special aquatic site, such as a wetland. First, it is presumed that there are practicable alternatives to non-water dependent projects, "unless clearly demonstrated otherwise." [40 C.F.R. § 230.10(a)(3).] Second, "where a discharge is proposed for a special aquatic site, all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise." [*Id.*] The thrust of the Guidelines is that applicants should design Proposed Projects to meet the project purpose while avoiding impacts to aquatic environments. This approach is emphasized in a Memorandum of Agreement between the EPA and the Corps Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines (1990) ("MOA"). The MOA articulates the Guidelines "sequencing" protocol as first, avoiding impacts, second, minimizing impacts, and third, providing practicable compensatory mitigation for unavoidable impacts with a preference for on-site, in-kind mitigation and no overall net loss of functions and values.

In addition to requiring the identification of the LEDPA, the Guidelines mandate that a project must not violate any applicable toxic effluent standard or prohibition, 40 C.F.R. § 230.10(b)(2), jeopardize the continued existence of any endangered or threatened species (or destroy or adversely modify critical habitat), 40 C.F.R. § 230.10(b)(3), cause or contribute to violations of any applicable state water quality standard, 40 C.F.R. § 230.10(b)(1), or cause or contribute to significant degradation of waters of the United States, 40 C.F.R. § 230.10(c). Prior to completing its review, the Corps also must evaluate the Proposed Project in light of the public interest. Finally, the Corps must ensure that its environmental review complies with the National Environmental Policy Act, codified at 42 U.S.C § 4321 *et. seq.*

A decision under the Guidelines should also avoid substantial impacts to non-aquatic environmental values. Under the Code of Federal Regulations, "[e]ven where a practicable alternative exists that would have less adverse impact on the aquatic ecosystem, the Guidelines allow it to be rejected if it would have 'other significant adverse environmental consequences.'" (40 C.F.R. § 230.10(a).) As explained in the preamble to the Federal Register notice issuing the 404(b)(1) Guidelines, this allows for consideration of "evidence of damages to other ecosystems in deciding whether there is a 'better' alternative." Hence, in applying the alternatives analysis required by the Guidelines, "*it is not appropriate to select an alternative where minor impacts on the aquatic environment are avoided at the cost of substantial impacts to other natural*

*environmental values.*" (U.S. Army Corps of Engineers, Guidance on Flexibility of the 404(b)(1) Guidelines and Mitigation Banking, Regulatory Guidance Letter 93-02 (Aug. 23, 1993) (emphasis added).)

The Corps' charge to render a determination under the "alternatives analysis" must also avoid unreasonably expensive alternatives. "If an alleged alternative is unreasonably expensive to the applicant, the alternative is not 'practicable.'" (45 Fed. Reg. 85336, 85343; see also U.S. Army Corps of Engineers, Guidance on Flexibility of the 404(b)(1) Guidelines and Mitigation Banking, Regulatory Guidance Letter 93-02 (Aug. 23, 1993).) In establishing that the definition of "practicable" depends on "cost" factors, EPA stated that "[o]ur intent is to consider those alternatives which are reasonable in terms of the overall scope/cost of the Proposed Project." (45 Fed. Reg. 85336, 85339.)



## 2.0 PROJECT DESCRIPTION

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### 2.1 Project Location

The Arista del Sol property is within the Sunridge Specific Plan Subarea, which is located in eastern Sacramento County, approximately five miles south of Highway 50 (Figure 1). Specifically, the Sunridge Specific Plan Subarea is situated east of Sunrise Boulevard, south of Douglas Road, west of Grant Line Road, and north of Jackson Road (State Route 16). The Subarea is located in portions of Sections 8, 9, 10, 15, 16, and 17 of Township 8 North, Range 7 East on the U.S.G.S. "Buffalo Creek, CA" 7.5' quadrangle.

The Subarea consists of the following Project Sites within the larger Sunridge Specific Plan Area: North Douglas, Montelena, Anatolia IV, Sunridge Village J, Sunridge Park, Douglas 103, Douglas 98, Grantline 208, and Arista del Sol.

The Arista del Sol Project Site lies west of and adjacent to Grant Line Road, south of Douglas Road, east of Jaeger Road, and north of and adjacent to the proposed Pyramid Boulevard. The site is located in Section 15 of Township 8 North, Range 7 East on the U.S.G.S. "Buffalo Creek, California" 7.5' quadrangle (Figure 1).

### 2.2 Project Description

The Proposed Project is comprised of  $\pm 209.9$  acres within the Arista del Sol boundary and an additional  $\pm 5.0$  within the Grant Line 220 property boundary, for a total of  $\pm 214.9$  acres. The Arista del Sol portion of the Proposed Project consists of approximately  $\pm 133.5$  acres of residential development,  $\pm 19.4$  acres for neighborhood parks,  $\pm 5.6$  acres of commercial mixed use development,  $\pm 8.1$  acres of drainage corridor and detention/water quality basin, and  $\pm 41.1$  net ( $\pm 43.3$  gross) acres of open space/wetland preserve to be preserved in perpetuity. The gross acreages of the above categories include greenbelt/paseo, landscape corridors, and roads within the property, including improvements to Grant Line Road. The proposed land uses for the subject property are in accordance with the proposed land uses set forth in the Sunrise-Douglas Community Plan and Sunridge Specific Plan. The project is situated to take advantage of the proposed extension of infrastructure to the Sunrise-Douglas Community Plan area, including sewer mains, sewer trunk lines, gas and electric mains, and water mains.

The Arista del Sol project work within the Grant Line 220 property boundary includes road construction and improvements needed to protect public health and safety and to meet the City of Rancho Cordova road improvement standards for this area. These improvements include  $\pm 4.6$  acres for the southern half of Chrysanthy Boulevard, such that development of the full width of Chrysanthy Boulevard is covered by the Proposed Project, and  $\pm 0.4$  acre for a transition lane in a 700-ft stretch on the west side of Grant line Road south of the Arista del Sol property.

### 2.3 Waters of the U.S. and Proposed Impacts

The Project Site contains  $\pm 17.41$  acres of waters of the United States including wetlands protected by the Clean Water Act. This total is comprised of  $\pm 17.34$  acres on the Arista del Sol property and  $\pm 0.07$  acre within the southern portion of the Chrysanthy Boulevard right-of-way on the Grant Line 220 property. Wetlands and other waters on the Project Site include ephemeral drainages, depressional and riverine seasonal wetlands, a seep, and vernal pools. Additionally, there are three stock ponds and a ditch located on the subject property. Acreages for each jurisdictional water class on the Arista del Sol property and within the additional Chrysanthy Boulevard right-of-way are shown in Table 1.

Table 1 — Waters of the U.S.

CLASSIFICATION	ACREAGE		
	Arista del Sol Property	Additional Chrysanthy Road R-O-W	Total
Vernal Pool	8.59	0.00	8.59
Depressional Seasonal Wetland	0.15	0.00	0.15
Riverine Seasonal Wetland	0.86	0.04	0.90
Seep	0.03	0.00	0.03
Ephemeral Drainage	0.15	0.03	0.18
Pond	7.56	0.00	7.56
Ditch	<0.01	0.00	<0.01
Total	17.34	0.07	17.41

The Proposed Project will directly impact  $\pm 13.88$  acres of jurisdictional waters. The wetland and other water features impacted under the Proposed Project would result in the on-site loss of  $\pm 0.08$  acre of depressional seasonal wetland,  $\pm 0.67$  acre of riverine seasonal wetland,  $\pm 0.03$  acre of seep wetland, and  $\pm 5.37$  acres of vernal pools. Other waters to be impacted include:  $\pm 0.17$  acre of ephemeral drainage,  $\pm 7.56$  acres for three stock ponds, and  $<0.01$  acre of ditch. The Proposed Project will preserve  $\pm 3.53$  acres of jurisdictional areas, including  $\pm 3.22$  acres of vernal pool,  $\pm 0.30$  acre of seasonal wetland, and  $\pm 0.01$  acre of ephemeral drainage ("Preserve"). The 41.1-acre Preserve will be maintained in perpetuity pursuant to the requirements of the Conceptual Strategy and mitigation measures imposed by the County's environmental review process.



### **3.0 SCREENING CRITERIA FOR ON-SITE ALTERNATIVES**

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The following criteria were used to evaluate three on-site design alternatives for the Arista del Sol Project, including the Proposed Project.

#### **3.1 Project Purpose**

- The alternative design must accommodate the project purpose of constructing a medium-scale residential community including resident-serving public service components (i.e., parks and commercial services) as well as infrastructure with adequate, contiguous developable acreage, defined as the same or more area than the Proposed Project.

#### **3.2 Logistics**

- The alternative design must provide for safe, efficient internal circulation and adequate access to adjacent road networks.
- The alternative design must provide for adequate distribution of infrastructure and utilities.

#### **3.3 Cost**

- The alternative design must avoid substantially greater costs per net developable acre than the Proposed Project.

#### **3.4 Environmental**

- The alternative design must have significantly less impacts to aquatic resources than the Proposed Project, without having other significant adverse environmental impacts.
- The alternative design must have significantly less adverse impacts on federally-listed species than the Proposed Project.
- The alternative design must be consistent with the principles and standards of the Conceptual Strategy, which were conceived to create a viable Regional Preserve for vernal pool and wetland habitat designed to minimize the cumulative effects associated with developing the Plan Subarea. The principles and standards include:
  - Preserve designs with a low preserve perimeter-to-area ratio,
  - Preservation of contiguous vernal pool and wetland features that provide (or contribute to) large, contiguous open space areas,
  - Designs allowing for a minimum of 250' buffers between vernal pool and wetland features and adjacent development that limit potential indirect impacts.

#### **3.5 Overall**

- An alternative is not a practicable alternative unless it meets all of the above criteria.

## 4.0 ANALYSIS OF ON-SITE ALTERNATIVES

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This On-Site Alternatives Analysis evaluates the Proposed Project and two alternative designs, a No-Fill Alternative and a Partial-Fill Alternative with an Eastern preserve, and provides a detailed comparison of the Proposed Project to these on-site alternatives.

### 4.1 Proposed Project

The Proposed Project design includes  $\pm 173.8$  gross acres of developable land and  $\pm 41.1$  acres of wetland preserve located on the western quarter of the Project Site. The net developable acreage, which is defined here as the residential and commercial lotted area, is  $\pm 125.3$  acres. The remaining 48.5 acres of unavoided area consists of parks, water quality detention basins and drainage corridor, landscape corridors, paseos, and roads, and represents approximately 23% of the project site acreage. The Proposed Project avoids  $\pm 3.53$  acres of jurisdictional area, mainly vernal pools. The on-site preserve is part of the Regional Preserve that focuses on the headwaters of one of the forks of Morrison Creek as well as habitat for vernal pool fairy shrimp and tadpole shrimp. The Proposed Project is shown in Figure 3.

### Project Purpose

The Proposed Project will develop approximately 80% of the site for residential and supporting uses. It is consistent with the principles and standards of the Conceptual Strategy and the Regional Preserve Map (Figure 2). Appendix B of this document details how the Proposed Project conforms to the ten principles and standards with on-site minimization measures. Therefore, the Project Purpose criterion is fully met.

### Logistics

The Proposed Project meets logistical requirements by providing for efficient internal circulation within the Project Site in accordance with the planned roadway alignments. All residential areas are accessible from both Americanos Blvd (north-south) and Chrysanthy Blvd (east-west), which are two major roadways planned throughout the Community Plan area. Furthermore, the Proposed Project accommodates resident-serving public service components accessible from all residential lots.

### Cost

The cost per net developable acre for the Proposed Project is \$188,535. Table 2 provides the itemized costs for the Proposed Project. The \$23.6 million cost of the Proposed Project has been determined to be practicable. No expensive bridging or alternative routing is required by this alternative as the preserve is consolidated on the western-most portion of the property, and the development area is contiguous.

**Table 2 — On-Site Alternatives Cost Detail - Proposed Project**

ITEM	COST (\$)
Major Roadway	3,305,294
Frontage	218,397
Sewer	3,493,725
Water	2,779,063
Drainage	3,511,188
Joint Trench / Dry Utilities	3,031,920
Interior streets	6,206,988
Common Grading Costs	1,076,904
<b>TOTAL</b>	<b>23,623,479</b>
<b>PER LOT</b>	<b>25,960</b>
<b><u>PER NET DEVELOPABLE ACRE</u></b>	<b><u>188,535</u></b>



## Environmental

The Proposed Project will impact  $\pm 13.88$  acres of jurisdictional waters. Avoidance and fill acreages by wetland/other water classes are given in Table 5. The Proposed Project is consistent with the principles and standards of the Conceptual Strategy and the Guidelines. The preserve area of the Proposed Project is large and contiguous with a low perimeter-to-area ratio (133 ft/ac) in accordance with principles and standards. The on-site preserve of the Proposed Project is part of the larger, contiguous  $\pm 209$ -acre Regional Preserve for the Subarea that will be managed in perpetuity to sustain populations of listed plants and invertebrates.

The Proposed Project is designed to maintain the overall hydrologic integrity of this Regional Preserve so as to ensure there will not be a net loss of functions and values of the remaining watershed area in the Regional Preserve. The Preserve on Arista del Sol is located in an area that receives overland and subsurface flow from only a portion of the development area. As a result of the natural contours of the property, the eastern half of the property drains to the southeast, away from the preserve area. The primary source of hydrology is direct precipitation and to a lesser degree surface and subsurface flow from the Grantline 208 Preserve to the north. Additionally, the relatively narrow area of land that would be developed directly south of the Preserve drains to the south and will not impact the hydrologic integrity of the Arista del Sol Preserve. In summary, the development of the Arista del Sol property has been designed to utilize the topography and hydrology of the site so that the overall hydrologic integrity of the Regional Preserve is maintained (Appendix B).

## Overall

The Proposed Project meets the project purpose, logistics, costs and environmental criteria. It retains adequate developable area while providing for safe and efficient internal circulation and connection to regional roadways. It retains adequate acreage for amenities, infrastructure, drainage corridors, and water quality detention basins within the project. The Proposed Project design avoids and preserves jurisdictional features necessary to maintain connectivity between portions of the Regional Preserve to the north of the Proposed Project, and maintains adequate buffers to protect this feature. This avoidance assures that the Project contributes to regional preservation of wetland and vernal pool habitat within the Specific Plan Subarea pursuant to the Conceptual Strategy. It is fully consistent with the principles and standards of the Conceptual Strategy.

### 4.2 Alternative One: No-Fill Alternative

Alternative One, the No-Fill Alternative, would avoid all  $\pm 17.41$  acres of jurisdictional waters on the Project Site, including  $\pm 8.59$  acres of vernal pool,  $\pm 1.05$  acre of seasonal wetland,  $\pm 0.03$  of slope wetland (seep),  $\pm 0.18$  acre of ephemeral drainage,  $\pm 7.56$  acres of pond, and  $<0.01$  of ditch. Table 5 in Section 4.4 provides a comparison of the avoided and filled acreages for each alternative. The use of standard 250-ft buffers around existing on-site wetlands excludes from development all but approximately 9.8 dispersed acres, and clearly eliminates the possibility of a residential development project on this site (Figure 4). Therefore, this analysis evaluates 50-ft avoidance buffers as a more practicable No-Fill Alternative (Figure 5).



## Project Purpose

The No-Fill Alternative with 50-ft wetland buffers leaves approximately  $\pm 122.0$  gross acres of total area outside of jurisdictional waters and surrounding buffers. This remainder land is extremely fragmented and does not provide sufficient contiguous land to practicably construct a residential development comparable to the Proposed Project. On this basis, the development cannot be well-configured. It would not be feasible to develop many of the small isolated patches of land, and the usable acreage is 84% or less of the gross amount. Figure 5 shows the gross remainder considering the 50-ft avoidance areas as well as the potential usable area determined by folding small and inaccessible areas, largely surrounded by preserve, into the preserve area. This provides a usable acreage of  $\pm 102.0$  acres. To be consistent with the project purpose, at least 23% of the unavoided area is needed for park, water quality detention basins and drainage corridor, landscape corridors and paseos, and roads, which leaves less than  $\pm 78.5$  acres (of the  $\pm 102$  acres) for residential and commercial development. Thus, the No-Fill Alternative provides less than 62.6% (78.5 acres/125.3 acres) of the net developable acreage for lots as does the Proposed Project. This difference represents a reduction of at least 339 lots (905-566 lots).

## Logistics

Given the fragmented, isolated distribution of the remaining developable land, any land plan designed around the No-Fill Alternative could not meet the requirement "for safe, efficient internal circulation and adequate access to adjacent road networks" without entering into avoidance areas. The poor connectivity of developable area would not provide for adequate distribution of infrastructure and utilities within the Project Site due to problems with access through wetland buffers. At least five internal wetland crossings would be required to access isolated or disconnected development areas as illustrated in Figure 5. Furthermore, neither Chrysanthy Boulevard nor Americanos Boulevard could be built as proposed without extensive bridging to avoid areas within these rights-of-way. Access to the existing Grant Line Road would be limited to the isolated patches of land on the eastern edge of the property.

## Cost

The No-Fill Alternative is not a viable alternative to the Proposed Project. This full avoidance alternative would be highly impractical to build. Extensive, extremely costly amounts of bridging within the site, estimated at \$5 million or more, would be required for the No-Fill Alternative to satisfy the logistics criterion including adequate, safe internal circulation and access to infrastructure and utilities. Wetland crossings for road construction would be expected to exceed an additional \$10 million, and are highly impractical. Thus, no specific land use plan has been developed on which to determine the development costs of this alternative. Even if the available acreage were contiguous and ideally configured, the gross acreage is inadequate to fulfill the project purpose. In terms of estimated usable land for development residential and commercial lots, this alternative provides less than 2/3 of the net developable acreage and more than doubles the cost per net developable acre. Therefore, the No-Fill Alternative does not meet the cost criterion.



## Environmental

The No-Fill Alternative avoids direct, fill impacts to  $\pm 17.41$  acres of jurisdictional waters on the Project Site. Based on the 50-foot buffer, the  $\pm 92.9$  acres of open space are comprised of thin, convoluted, and disconnected areas. This alternative does not result in significantly less adverse effects to aquatic ecosystems because all of the jurisdictional waters are within 250-ft of proposed development. Vernal pool habitat under these conditions cannot be considered "protected" according to USFWS guidelines and does not possess vernal pool and/or wetland functions and values in the long-term. Indirect effects from development include altered hydrology, urban runoff, disturbance by residents and introduced exotic plant species. Vegetation in wetland areas bridged by the construction of necessary access roads would suffer impacts from severely reduced sunlight.

Avoidance designs, such as the No-Fill Alternative, that are vulnerable to such edge effects do not adhere to the principles and standards in the Conceptual Strategy, particularly preservation of vernal pool hydrology and a low preserve perimeter-to-area ratio. The perimeter-to-area ratio is 634 ft/ac for the 50-ft buffers and 376 ft/ac for the enlarged avoided area that incorporates some of the inaccessible areas into avoidance. Both ratios are extremely high relative to the Proposed Project (133 ft/ac). General sizing criterion for viable vernal pool avoidance areas, set both by federal resource Agencies and widely accepted local studies of vernal pool preservation and management, favor large, densely-populated avoidance areas since larger areas are more effective at preserving vernal pool ecosystem functions and values.<sup>2</sup> This qualitative criterion is reflected in the Conceptual Strategy and the Specific Plan EIR.<sup>3</sup> Left unconnected, the avoided areas remaining under the No-Fill Alternative do not meet the acreage requirements for functioning vernal pool and wetland preserve areas, and reduce their functions and values.

The No-Fill Alternative does not meet the established environmental criteria nor does it conform to the 10 principles and standards of the Conceptual Strategy. In particular, this design does not "maintain corridors and large areas for wildlife and the propagation of flora" (principle 2) nor would it allow for only "compatible land uses next to preserves" (principle 6) because the preserve area is dispersed throughout the entire project site. With the 50-ft buffers, all aquatic resources on-site would be subject to indirect effects, which is inconsistent with principles 1 and 3 to "maintain natural existing water integrity and flows to downstream reaches" and "manage storm water to retain natural flow regime and water quality," respectively.

<sup>2</sup> See Jones and Stokes Associates, Inc. 1990. *Sacramento County Vernal Pools: Their Distribution, Classification, Ecology and Management*. Prepared for the County of Sacramento, Planning and Community Development Department; and California Department of Fish and Game. 1998. California Vernal Pool Assessment Preliminary Report (available at [http://www.dfg.ca.gov/whdab/wetlands/vp\\_asses\\_rept/southeastern.htm](http://www.dfg.ca.gov/whdab/wetlands/vp_asses_rept/southeastern.htm), last modified 1/31/05); and U.S. Fish and Wildlife Service, *Determining Vernal pool Preservation Credits Mainpage*, available at [http://sacramento.fws.gov/es/documents/vp\\_bank\\_cr.htm](http://sacramento.fws.gov/es/documents/vp_bank_cr.htm), last viewed on April 13, 2005.)

<sup>3</sup> Specific Plan EIR at p. 14.23: "Areas with dense concentrations of wetlands should be considered candidates for preservation. Preservation should be planned in relatively large contiguous blocks. Where wetland acreage is diffuse and preservation is impractical, impacts should be mitigated by a combination of on-site construction to the extent appropriate and off-site/mitigation bank preservation."



## Overall

The No-Fill Alternative is not the LEDPA as it does not meet the project purpose, logistics, cost or environmental criteria. This alternative fails to satisfy the project purpose as it provides only 70% gross of the unavoided land, or an estimated 62.6% net developable acreage for lots, as provided by the Proposed Project. This area has a scattered and convoluted configuration that would be difficult to develop.

The No-Fill Alternative could meet the logistics criterion if bridging were employed to avoid jurisdictional features, but this need would result in highly increased costs to provide necessary access to the larger areas available for development. The cost per developable acre more than doubles given bridging costs and the reduced acreage for development.

The No-Fill Alternative does not meet the environmental criterion as the primarily narrow and disconnected avoided areas on the Project Site cannot remain viable in the long term. Avoidance would not result in significantly less impacts to aquatic ecosystems given indirect and cumulative effects. Also, the open space preserve under the No-Fill Alternative is highly inconsistent with the Preserve map created by the Conceptual Strategy and the principles and standards of the Strategy.

The No-Fill Alternative is economically infeasible and not a practicable alternative.

### 4.3 Alternative Two: Eastern Preserve Alternative

Alternative Two, the Eastern Preserve Alternative is a partial-avoidance alternative that precludes fill of  $\pm 7.49$  acres of jurisdictional area, including:  $\pm 3.57$  acres of vernal pool,  $\pm 0.25$  acre of seasonal wetland,  $\pm 0.09$  acre of ephemeral drainage, and  $\pm 3.58$  acres of pond. Avoidance and fill acreages for this and other alternatives are shown in Table 5 in Section 4.4. Avoidance is focused on the eastern third of the Project Site in a  $\pm 54.0$ -acre preserve and is designed primarily to protect the tributary to Laguna Creek and vernal pools that may be linked via indirect or overland flow. The on-site preserve does not connect to the Regional Preserve identified in the Conceptual Strategy. The design for Alternative Two is shown in Figure 6.

## Project Purpose

The Eastern Preserve Alternative provides  $\pm 160.9$  acres of unavoided area, which is comprised of  $\pm 115.8$  acres of residential and commercial development as compared to the  $\pm 125.3$  acres of the Proposed Project. The design retains the small commercial area and has two parks as well as two detention basins as in the Proposed Project. The difference in net developable acreage represents an overall loss of approximately 8% residential area and 124 fewer lots. Therefore, this alternative does not fully satisfy the project purpose.

## Logistics

Access to the northeastern lots and Grant Line Road presents logistical problems for the Eastern Preserve Alternative design. This alternative does not meet the logistics criteria unless access from the northeastern lots or Grant Line Road to the residential development on the western 2/3

of the property was provided through the adjacent property or by bridging the eastern preserve. This condition is undesirable since the northern lots cannot easily access the community services, e.g., parks, and commercial area available to the lots on the western side of the preserve.

### Cost

The cost per net developable acre for this alternative is \$241,260. The itemized costs for Alternative 2 are shown in Table 3. The Eastern Preserve Alternative reduces the number of lots from 905 to 781 and increases the cost per net developable acre by approximately \$52,725 as compared to the Proposed Project (Table 4). Bridging of wetlands is required in this alternative and this adds a nearly \$2 million cost for wetland preserve crossings as shown below. Grading and interior road costs are lower and this is the result of a loss of lots. This alternative does not meet the cost criterion as the cost per net developable acre is substantially greater than that of the Proposed Project.

**Table 3 — On-Site Alternatives Cost Detail - Alternative 2 (Eastern Preserve)**

ITEM	COST (\$)
Major Roadway	3,343,692
Frontage	123,589
Sewer	2,662,890
Water	1,967,106
Drainage	2,572,577
Joint Trench / Dry Utilities	2,264,220
Interior streets	3,851,508
Common Grading Costs	340,415
Wetland Preserve Crossing	1,860,000
Additional Rd-5 Area <sup>4</sup>	8,951,909
<b>TOTAL</b>	<b>27,937,906</b>
<b>PER LOT</b>	<b>35,772</b>
<b><u>PER NET DEVELOPABLE ACRE</u></b>	<b><u>241,260</u></b>

<sup>4</sup> This is the non-lotted area in the northwestern portion of the property that is designated as residential in Alternative 2 (Figure 6) and is the preserve area of the Proposed Project (Figure 3).



## Environmental

The Eastern Preserve Alternative includes a  $\pm 54.0$ -acre preserve that would avoid  $\pm 7.49$  acres of jurisdictional area and fill  $\pm 9.92$  acres (Figure 6 and Table 5). This alternative does not protect vernal pool complexes on the western portion of the property that are associated with the Morrison Creek watershed. While the fill impacts are lower than the Proposed Project, it is important to note that this alternative only avoids an additional  $\pm 0.35$  acre of vernal pool as compared to the Proposed Project. Nearly half of the avoided "aquatic resources" in the preserve is comprised of a single, large stock pond. Vernal pool crustaceans have been found in this pond, thus it is considered vernal pool crustacean habitat. The cysts are likely transported to the pond via a riverine seasonal wetland connection to vernal pool. However, this pond is the result of the construction of artificial impoundment features, does not have the natural characteristics of the vernal pools on the site, particularly the botanical diversity associated with vernal pools, and would be considered of lesser value and function than vernal pools on the site.

The open space preserve is contiguous and has a low perimeter-to-area ratio of 121.0 ft/ac, which is slightly lower than the Proposed Project due to the larger size of this preserve. However, this preserve is exposed to indirect effects on all four sides. Indirect effects to vernal pool crustacean habitat are greater in this alternative than in the Proposed Project due to the close proximity of several large habitat features to on-site development. Vernal pool crustacean habitat subject to indirect effects are illustrated in Figure 5 and total 6.15 acres. The total direct and indirect effects to vernal pool crustacean habitat is 12.78 acres (Table 6). Therefore, this alternative does not result in significantly fewer impacts to aquatic ecosystems or listed vernal pool species.

Drainage and hydrologic integrity are related and important considerations in evaluating the Eastern Preserve Alternative. Drainage from on-site development would likely not differ between an eastern or western preserve; in general, the eastern half of the property drains to the east, and the western half to the west. However, the location of adjacent preserves with respect to the Arista del Sol preserve could greatly affect the amount of runoff from adjacent development as well as the hydrologic integrity. The Preserve Map of the Conceptual Strategy calls for a contiguous western preserve from Arista del Sol north through Grantline 208 to the Douglas 103 property. If the Arista del Sol preserve is located adjacent to the development to the north rather than contiguous with other preserve land, the on-site preserve would receive greater urban runoff. Likewise, with an isolated preserve, the natural hydrology of the Arista del Sol preserve wetlands cannot be maintained. The design does not adhere to associated principles and standards 1 ("maintain natural existing water integrity and flows to downstream reaches") and 2 ("maintain corridors and large areas for wildlife and the propagation of flora") of the Conceptual Strategy.

## Overall

The Eastern Preserve Alternative does not constitute the LEDPA for the following reasons:

This partial avoidance alternative does not meet the overall project purpose or cost criteria as this design reduces the amount of acreage available to construct a residential subdivision with associated services at a greater cost per net developable acre than the Proposed Project.

The Eastern Preserve Alternative is not likely to have fewer impacts to aquatic ecosystems and listed vernal pool species due to adverse effects on habitat and hydrology from surrounding development. It deviates from the viable Regional Preserve for vernal pool and wetland habitat designed to minimize cumulative effects associated with development of the Subplan area as part of the Conceptual Strategy.

The Conceptual Strategy was used in defining a contiguous preserve through the west side of the Arista del Sol, Grantline 208, and Douglas 103 properties and is part of the September 2004 Preserve Map agreed upon by the Agencies. The Agencies arrived at boundaries for the Preserve map based on their best professional judgment and best available information regarding regional and site-specific biology and hydro-geomorphology (such as wetland delineations, species accounts, and environmental impact reports), while recognizing that development is planned in the area. An Eastern Preserve design does not conform as well to the principles of the Conceptual Strategy and Guidelines as the Regional Preserve planned in the Proposed Project does.



#### 4.4 Comparison of Alternatives

A side-by-side comparison of the alternatives demonstrates that the Proposed Project best accomplishes the project purpose and fulfills the cost, logistics, and environmental criteria (Table 6).

##### Project Purpose

Both Alternatives One and Two provide significantly fewer lots. The developable area of Alternative One is extremely fragmented and clearly precludes the project purpose of contiguous developable area for the project.

##### Cost

Neither Alternative meets the cost criterion. Table 4 itemizes the project purpose and cost differences between the Proposed Project and alternatives. No actual total cost was calculated for the No-Fill Alternative (Alternative One) as it was determined that such a plan would be logistically infeasible and unreasonably expensive. The Eastern Preserve Alternative (Alternative Two) has a cost differential of 30% compared to the Proposed Project.

Table 4 — Cost Differentials for On-Site Alternatives

Alternative	Preserve Acres	Net Developable Acres	# of Lots	Fixed Costs (\$)	Fixed Costs per Net Developable Acre (\$/ac)	Differential (\$)	Percent Differential**
Proposed Project	41.1	125.3	905	23,623,479	188,535	N/A	N/A
Alternative 1*	112.7 (92.9)	78.5 (93.9)	566	N/A	N/A	N/A	N/A
Alternative 2	54.0	115.8	781	27,937,906	241,260	+52,725	30%

\*For Alternative 1, net developable acres and number of lots estimated based upon 84% usability of gross non-avoidance area. Numbers in parentheses show values before usability adjustment.

\*\*Percent Cost Differential calculated as follows: (Alt 2 Cost – PP Cost)/PP Cost\*100

##### Logistics

The Proposed Project conforms to the requirements for safe, efficient internal circulation and adequate access to adjacent road networks. In contrast, internal circulation in Alternative One would be extremely poor due to avoided areas and extensive bridging would be required to extend infrastructure to the fragmented developable areas. Both Chrysanthy and Americanos Boulevards could not be built as planned. Alternative Two does accommodate the road and utilities plan of the Proposed Project except for the northeastern lots which would be cut off from the rest of the developable area. Thus, Alternative Two falls short on the logistics criteria, as compared to the Proposed Project.

## Environmental

The Proposed Project is fully consistent with the principles and standards of the Conceptual Strategy, whereas both of the other alternatives are not. Environmental requirements for a contiguous preserve with a low perimeter-to-area ratio that protects the hydrologic integrity of the preserved wetlands and minimizes cumulative effects are best met by the Proposed Project preserve design. For example, the perimeter-to-area ratio of Alternative One is 470% greater than the Proposed Project. The Arista del Sol Preserve is based upon the Regional Preserve map that was developed in accordance with the Conceptual Strategy and involved considerable Agency participation.

Table 5 compares the jurisdictional impacts of the on-site alternatives but does not provide a complete depiction of impacts to aquatic resources and protected vernal pool species. Indirect effects must also be considered (as shown in Table 6), and the Proposed Project better protects against these impacts. Fill acreages are higher than those of Alternatives One and Two. However, the Arista del Sol Preserve would be protected on the northern boundary by the Grantline 208 Preserve, and indirect effects to vernal crustacean habitat within the on-site preserve would be less than both of these alternatives, resulting in lower total effects to vernal pool crustacean habitat (See Table 6).

**Table 5 — Comparison of Jurisdictional Impacts for On-Site Alternatives**

CLASSIFICATION	Proposed Project		Alternative 1 (No-Fill)		Alternative 2 (Eastern Preserve)	
	Avoided	Filled	Avoided	Filled	Avoided	Filled
Vernal Pool	3.22	5.37	8.59	0.00	3.57	5.02
Seasonal Wetland	0.30	0.75	1.05	0.00	0.25	0.80
Seep	0.00	0.03	0.03	0.00	0.00	0.03
Ephemeral Drainage	0.01	0.17	0.18	0.00	0.09	0.09
Pond	0.00	7.56	7.56	0.00	3.58	3.98
Total	3.53	13.88	17.41	0.00	7.49	9.92



**Table 6 — Summary Assessment of On-Site Alternatives**

<b>DESIGN ALTERNATIVE</b>	<b>PROJECT PURPOSE</b> Does the alternative achieve the project purpose of approximately 173 gross acres of unavoided area and 125.3 net developable acres?	<b>COST</b> Does the alternative avoid a substantially greater cost per net developable acre than the Proposed Project Alternative?	<b>LOGISTICS</b> Does the alternative conform to the Land Use Plan circulation design and school and park, water treatment and flood control designations and comply with the Conceptual Strategy?	<b>ENVIRONMENTAL</b> Does the alternative have significantly less impacts on vernal pool crustacean habitat than the Proposed Project Alternative?	<b>LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE</b>
Proposed Project Alternative	Yes	N/A \$188,535	Yes	N/A Impacts to VP Habitat = 11.65 (10.52 Direct and 1.13 Indirect)	Yes
Alternative 1	No Provides 122 gross acres, fragmented and poorly configured with small and inaccessible patches. Estimated to provide 78.5 net developable acres and 339 fewer lots.	No Expected to be cost prohibitive. Cannot feasibly construct a residential development given configuration of remaining land.	No Internal circulation would be extremely poor due to avoided areas. Extensive bridging between developable areas would be required. Access roads could not be built as proposed.	No All aquatic resources would be subject to indirect impacts.  Impacts to VP Habitat = 17.41 ac (Indirect)	No Does not meet the project purpose, has substantially higher costs, does not protect wetlands and protected species in the long run, and is inconsistent with the Conceptual Strategy.
Alternative 2	No Provides 161 gross acres and 115.8 net developable acres. Provides 8% less area for residential development and 124 fewer lots.	No \$241,260 Cost differential is 30%	No Does not conform to the Conceptual Strategy.	No Majority of VP habitat subject to indirect impacts, i.e., not fully protected.  Impacts to VP Habitat = 12.78 ac (6.63 Direct and 6.15 Indirect)	No Does not meet project purpose, cost, or environmental criteria, inconsistent with the Conceptual Strategy.

### Overall

The Proposed Project is the least environmentally damaging practicable alternative (LEDPA) because it is the only alternative to meet the four criteria.

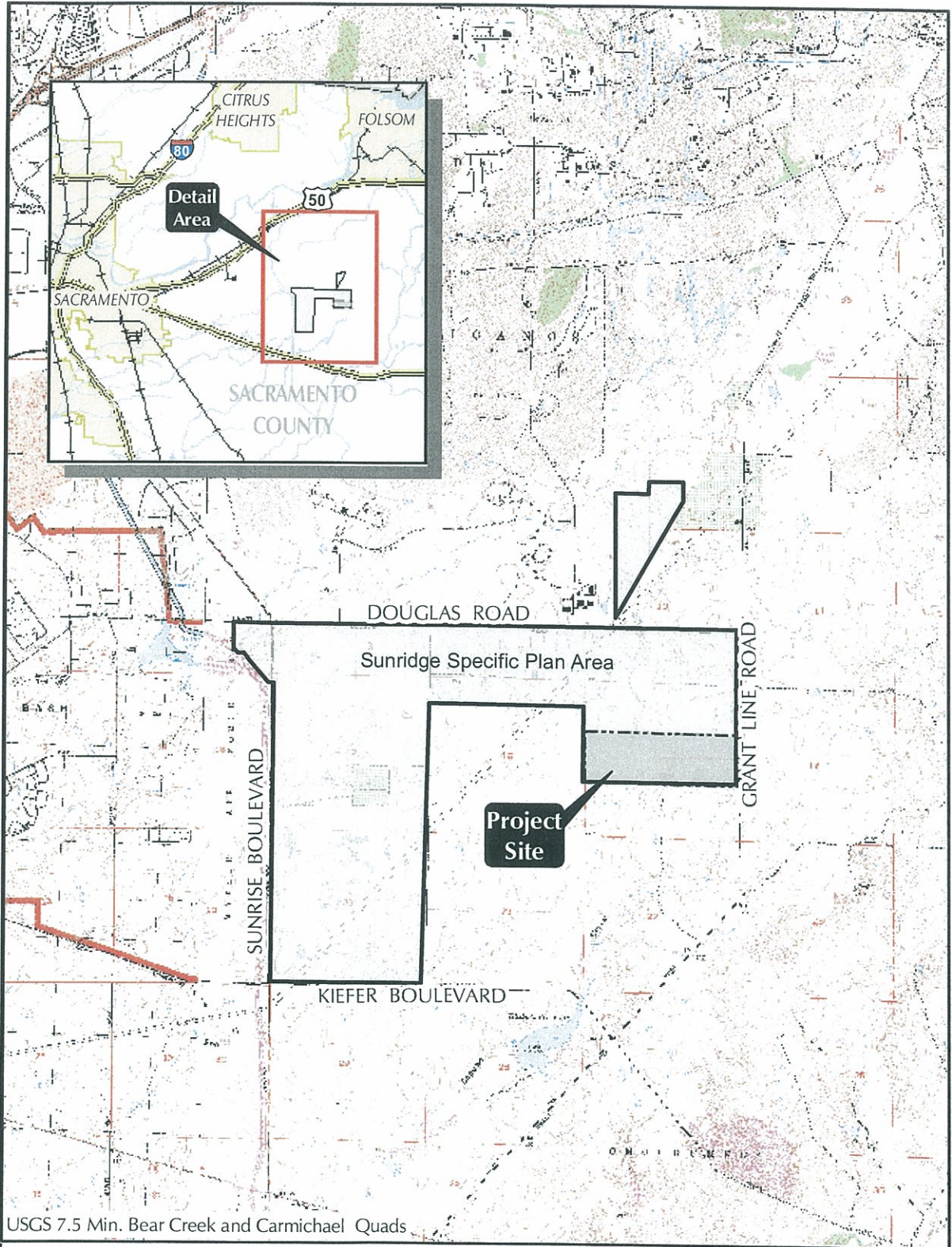
## 5.0 CONCLUSION

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Based upon the legal requirements of the Clean Water Act for issuance of a 404 permit, this analysis, in concert with the Regional Alternatives Analysis for the Subarea, has demonstrated that there are no practicable alternatives to developing the Arista del Sol project site that are less environmentally damaging than the project as proposed.

For the reasons outlined in this Alternative Analysis, the currently proposed Arista del Sol project is the Least Environmentally Damaging Practicable Alternative (LEDPA).





## SITE AND VICINITY

**FOOTHILL ASSOCIATES**  
 ENVIRONMENTAL CONSULTING • PLANNING  
 LANDSCAPE ARCHITECTURE  
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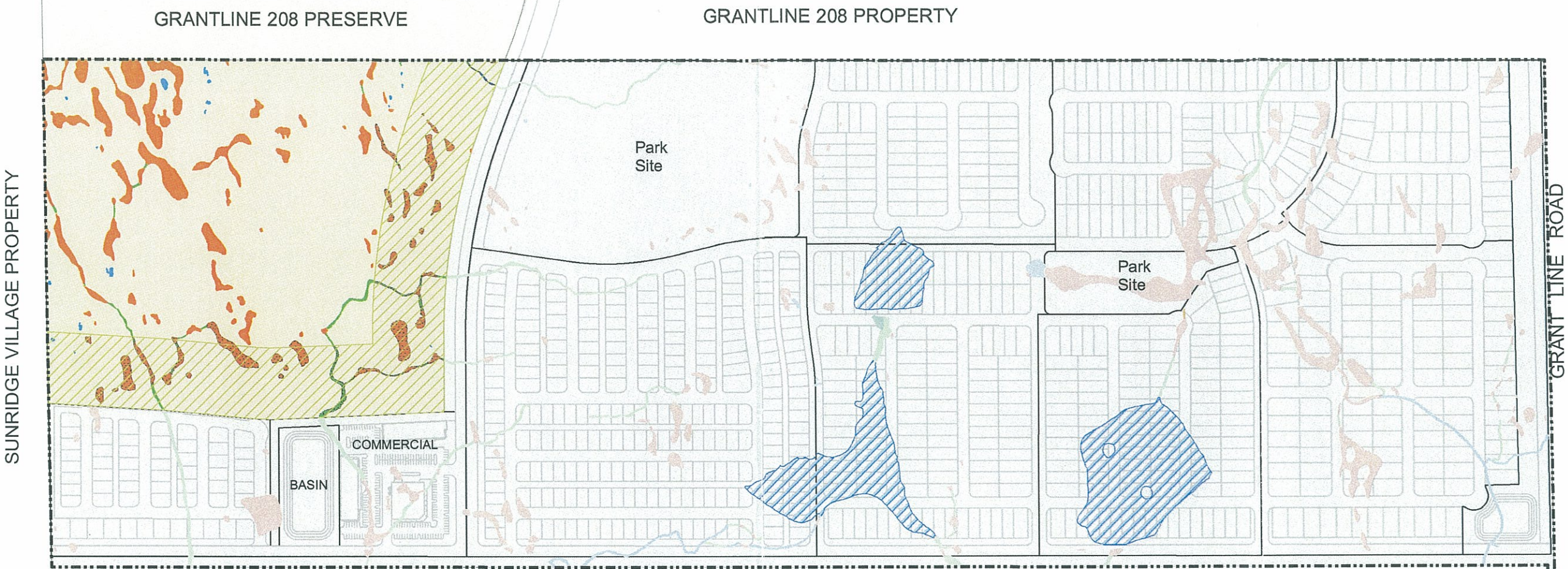


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 SCALE IN FEET

Drawn By: SWD  
 Date: 01/18/06

**FIGURE 1**



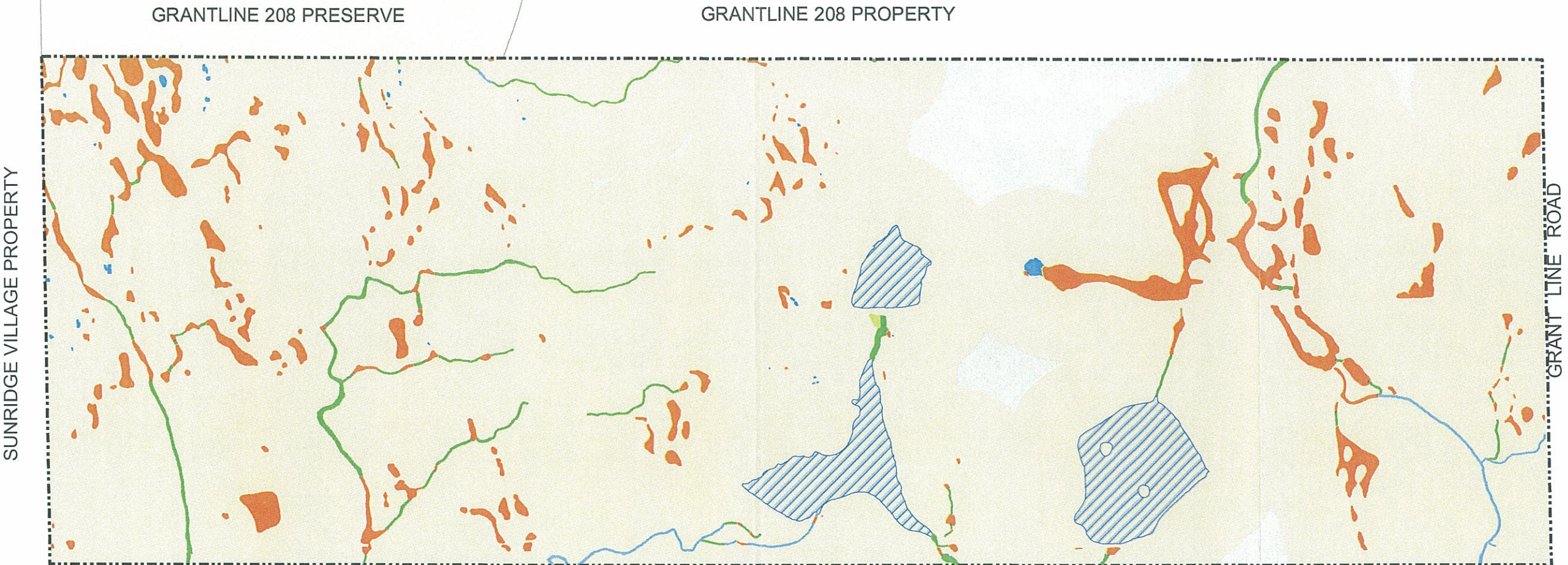


WATERS OF THE U.S.			
CLASSIFICATION	NO FILL	ACREAGE FILL	TOTAL
<b>DEPRESSIONAL WETLANDS</b>			
Seasonal Wetland	0.07	0.08	0.15
Vernal Pool	3.22	5.37	8.59
<b>RIVERINE WETLANDS</b>			
Seasonal Wetland	0.23	0.67	0.90
<b>SLOPE WETLANDS</b>			
Seep	--	0.03	0.03
<b>OTHER WATERS OF THE U.S.</b>			
Ephemeral Drainage	0.01	0.17	0.18
Pond	--	7.56	7.56
Ditch	--	<0.01	<0.01
<b>TOTAL</b>	<b>3.53</b>	<b>13.88</b>	<b>17.41</b>

- OTHER FEATURES**
- On-Site Preserve Area (~41.1 ac)
  - Gross Developable Area (~173.8 ac)
  - Within 250-ft of On-Site Development
  - Preserve Habitat Subject to Indirect Effects
  - Adjacent Preserve Area
  - Project Boundary
- NOTES**
- Acreages include wetlands delineated on the Arista del Sol property and those within the Chrysanthry Blvd R-O-W on the Grant Line 220 property, as the Arista del Sol project includes the full width of Chrysanthry Blvd. Subject to U.S. Army Corps of Engineers' verification.
- Digital base data provided by G.C. Wallace Inc.

# PROPOSED PROJECT





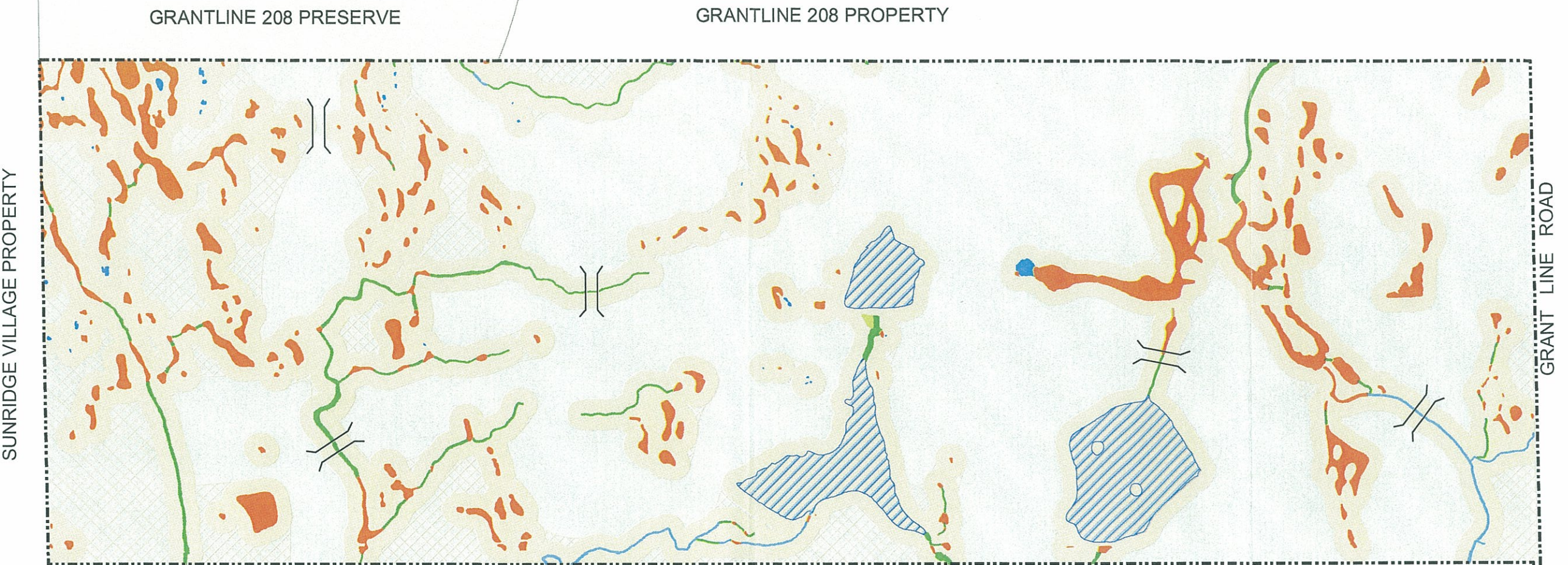
WATERS OF THE U.S.		OTHER FEATURES	
CLASSIFICATION	ACREAGE	Area Remaining Using 250-Foot Buffer (~9.8 acres)	
DEPRESSIONAL WETLANDS		Avoided Area	
Seasonal Wetland	0.15	Adjacent Preserve Area	
Vernal Pool	8.59	Project Boundary	
RIVERINE WETLANDS			
Seasonal Wetland	0.90		
SLOPE WETLANDS			
Seep	0.03		
OTHER WATERS OF THE U.S.			
Ephemeral Drainage	0.18		
Pond	7.56		
Ditch	<0.01		
TOTAL	17.41		

NOTES

Acreages include wetlands delineated on the Arista del Sol property and those within the Chrysanthry Blvd R-O-W on the Grant Line 220 property, as the Arista del Sol project includes the full width of Chrysanthry Blvd. Subject to U.S. Army Corps of Engineers verification.

NO-FILL SCENARIO WITH 250-FT BUFFERS





WATERS OF THE U.S.	
CLASSIFICATION	ACREAGE
<b>DEPRESSIONAL WETLANDS</b>	
Seasonal Wetland	0.15
Vernal Pool	8.59
<b>RIVERINE WETLANDS</b>	
Seasonal Wetland	0.90
<b>SLOPE WETLANDS</b>	
Seep	0.03
<b>OTHER WATERS OF THE U.S.</b>	
Ephemeral Drainage	0.18
Pond	7.56
Ditch	<0.01
<b>TOTAL</b>	<b>17.41</b>

**OTHER FEATURES**

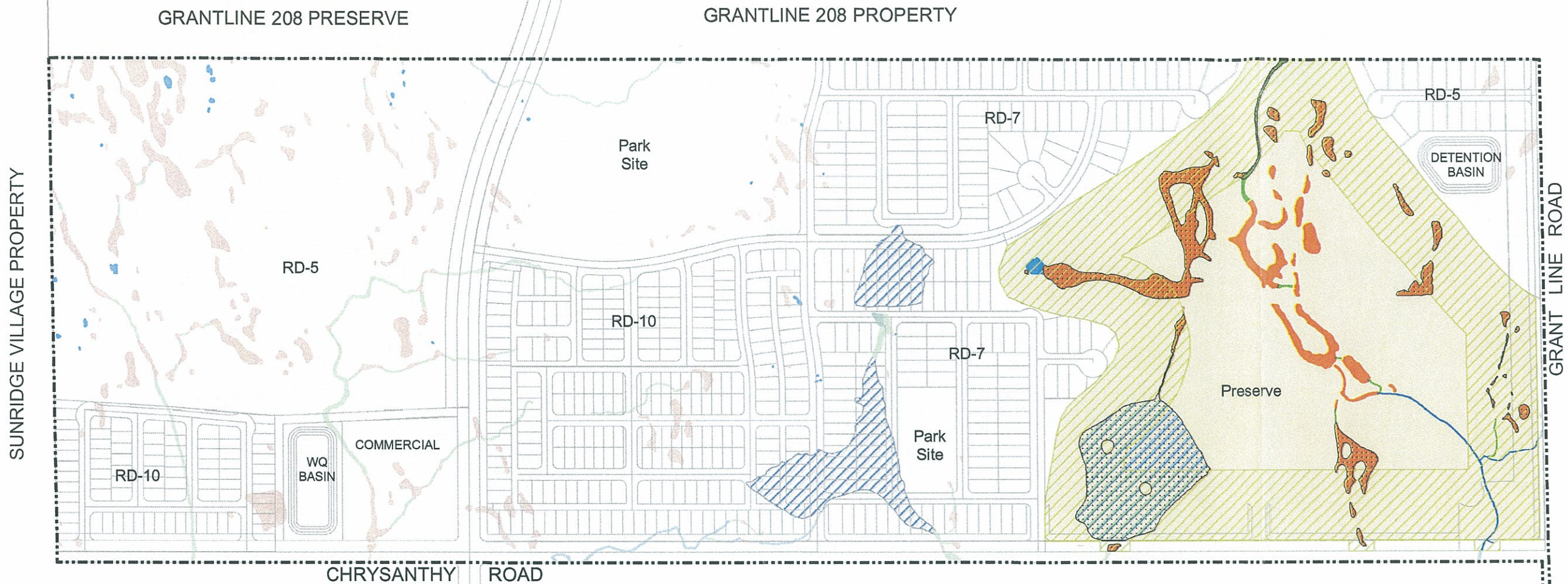
- Gross Developable Area (~122.0, includes hatch)
- Adjusted Gross Developable Area (102.2 acres, excludes hatch)
- 50-ft Buffer Avoidance Area
- Potentially Undevelopable/ Potential Additional Avoidance
- Potential Wetland Crossing Bridge w/in Development Area
- Adjacent Preserve Area
- Project Boundary

**NOTES**

Acreages include wetlands delineated on the Arista del Sol property and those within the Chrysanthry Blvd R-O-W on the Grant Line 220 property, as the Arista del Sol project includes the full width of Chrysanthry Blvd. Subject to U.S. Army Corps of Engineers verification.

## ALTERNATIVE 1 - NO-FILL ALTERNATIVE

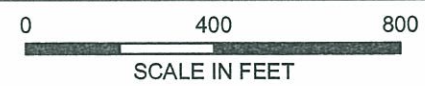




WATERS OF THE U.S.			
CLASSIFICATION	NO FILL	ACREAGE FILL	TOTAL
<b>DEPRESSIONAL WETLANDS</b>			
Seasonal Wetland	0.07	0.08	0.15
Vernal Pool	3.57	5.02	8.59
<b>RIVERINE WETLANDS</b>			
Seasonal Wetland	0.18	0.72	0.90
<b>SLOPE WETLANDS</b>			
Seep	--	0.03	0.03
<b>OTHER WATERS OF THE U.S.</b>			
Ephemeral Drainage	0.09	0.09	0.18
Pond	3.58	3.98	7.56
Ditch	<0.01	--	<0.01
<b>TOTAL</b>	<b>7.49</b>	<b>9.92</b>	<b>17.41</b>

- OTHER FEATURES**
- On-Site Preserve Area (~54.0 ac)
  - Gross Developable Area (~160.9 ac)
  - Within 250-ft of On-Site Development
  - Preserve Habitat Subject to Indirect Effects
  - Adjacent Preserve Area
  - Project Boundary
- NOTES**
- Acreages include wetlands delineated on the Arista del Sol property and those within the Chrysanthy Blvd R-O-W on the Grant Line 220 property, as the Arista del Sol project includes the full width of Chrysanthy Blvd. Subject to U.S. Army Corps of Engineers Verification.
- Digital base data provided by G.C. Wallace Inc.

## ALTERNATIVE 2 - EASTERN PRESERVE





## **Appendix A — Regional Alternatives Information**

### **Sunridge Specific Plan SubArea**

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**Regional Alternatives Information  
SunRidge Specific Plan Subarea  
Sacramento County, California**

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**Prepared for:**

Army Corps of Engineers  
November 29, 2004

**On Behalf of:**

Anatolia IV  
Cresleigh Homes  
DJ Enterprises  
Douglas 98  
Douglas 103  
Grantline Investors LLC  
North Douglas

Submitted by:

 **FOOTHILL ASSOCIATES**

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On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area

Appendix B — Sares-Regis Off-Site Alternatives Analysis



## 1.0 INTRODUCTION

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### 1.1 Background

Over the last two years, the United States Fish and Wildlife Service ("USFWS"), the United States Army Corps of Engineers ("Corps"), the United States Environmental Protection Agency ("EPA") (collectively the "Agencies"), landowners within the SunRidge Specific Plan Area, biological consultants and attorneys have met to review issues involving wetland and endangered species protection and project development within the SunRidge Specific Plan Area. More recently, numerous meetings between the Agencies, local agencies and owner stakeholder groups and their consultants were held to develop a conceptual strategy for the preservation of on-site wetlands and other biological resources for the remaining un-permitted properties within Specific Plan Area, referred to herein as the Plan Subarea. Additionally, mitigation strategies were developed for unavoidable impacts to aquatic habitat. The approach taken by the Agencies was to establish guiding principles for preservation and mitigation policies and to consider cumulative impacts and an on-site avoidance, minimization, and preservation plans, which takes into account the requirements of federal law and the framework established by local planning, and Plan Area development constraints.

The outcome of the various meetings between the Agencies and the stakeholders was the development of a conceptual level strategy for avoiding, minimizing, and preserving on-site aquatic resources within the Plan Area. This strategy, known as the "Conceptual Level On-Site Avoidance Strategy" served as the basis for developing a preserve configuration depicting areas to be avoided and preserved in the Plan Area.

The process developed by the Agencies and the stakeholders involves the preparation of this analysis and the subsequent submittal of a project level Clean Water Act (CWA) Section 404(b)(1) "Alternatives Analysis"<sup>1</sup> in support of individual CWA Section 404 permit applications. This document addresses regional and sub-regional cumulative impacts that may occur from not only the Strategy developed by the Agencies and the stakeholder group, but eight other alternative preserve configurations.

### 1.2 Legal Framework

Analyses regarding cumulative effects to the environment which may be caused by proposed projects are defined broadly under NEPA, the ESA, and the CWA. The

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<sup>1</sup> Concurrent with the meetings regarding conceptual level on-site avoidance strategies, the Corps issued Public Notice 200000336 for five separate applications for CWA Section 404 permits. All of these applications were for projects within the SunRidge Specific Plan and include DJ Enterprises, North Douglas, North Douglas 2, Anatolia IV, and Douglas Road 98. The Corps also issued Public Notice 200100252 for the Riverwest Investments' Sunridge Park project (the Ronnenberg site).



Council on Environmental Quality's ("CEQ") regulations define "cumulative impact" as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.

Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 C.F.R. §1508.7.) Under NEPA, cumulative impact analysis can include the following: 1) determination of the resources and ecosystem components that will be cumulatively affected by the proposed project; 2) selection of the spatial and temporal boundaries of the area of potential effect and whether these parameters are large enough to include all potentially significant effects on the resources of concern; 3) determination of actions that contribute to significant cumulative effects on resources of concern; and 4) the use of thresholds to assess resource degradation.

With respect to the determination of cumulative impacts, the implementing regulations for CWA section 404(b)(1) provide in part:

(g) Determination of cumulative effects on the aquatic ecosystem. (1) Cumulative impacts are the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems. (40 C.F.R. § 230.11.)

Section 7 regulations pursuant to the federal Endangered Species Act (ESA) require the federal action agency to provide an analysis of cumulative effects, along with other information, when requesting initiation of formal consultation. Additionally, federal wildlife agencies are required to consider cumulative effects in preparing biological opinions. (50 C.F.R. § 402.14(g)(3) and (4).). Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area.

With respect to the analysis of various alternatives and whether in this case conceptual preserve configurations are feasible, CWA section 404(b)(1) provides guidance. Under the CWA a project proponent must rebut the presumption that a practicable alternative to the proposed project location exists that does not result the filling of wetlands. As an initial matter, 40 C.F.R. Section 230.10(a) provides that: "no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic system, so long as the alternative does not have other significant adverse environmental consequences."

The Guidelines define an alternative as "practicable" if it is available and capable of being done after taking into consideration cost, logistics and existing technology in light of overall project purposes. A decision under the Guidelines should also avoid substantial impacts to non-aquatic environmental values. Under the Code of Federal Regulations, "[e]ven where a practicable alternative exists that would have less adverse

impact on the aquatic ecosystem, the Guidelines allow it to be rejected if it would have 'other significant adverse environmental consequences.'" (40 C.F.R. § 230.10(a).) As explained in the preamble to the Federal Register notice issuing the 404(b)(1) Guidelines, this allows for consideration of "evidence of damages to other ecosystems in deciding whether there is a 'better' alternative."

The Corps' charge to render a determination under the "alternatives analysis" must also avoid unreasonably expensive alternatives. "If an alleged alternative is unreasonably expensive to the applicant, the alternative is not 'practicable.'" (45 Fed. Reg. 85336, 85343; see also *U.S. Army Corps of Engineers, Guidance on Flexibility of the 404(b)(1) Guidelines and Mitigation Banking, Regulatory Guidance Letter 93-02 (Aug. 23, 1993).*) In establishing that the definition of "practicable" depends on "cost" factors EPA stated that "[o]ur intent is to consider those alternatives which are reasonable in terms of the overall scope/cost of the proposed project." (45 Fed. Reg. 85336, 85339.)



## **2.0 REGIONAL SETTING, PLAN SUBAREA DESCRIPTION, AND PURPOSE**

---

### **2.1 Plan Subarea Location**

The Plan Subarea is located in eastern Sacramento County, approximately 5 miles south of Highway 50 (Figure 1). The Plan Subarea is generally located east of Sunrise Boulevard, south of Douglas Road, west of Grantline Road, and north of Jackson Road (State Route 16). The Plan Subarea is located in portions of Sections 8, 9, 10, 15, 16, and 17 of Township 8 North, Range 7 East on the U.S.G.S. "Buffalo Creek, CA" 7.5' topographic quadrangle.

The Plan Subarea consists of the following project sites within the larger SunRidge Specific Plan Area: Anatolia IV, Sunridge Ranch, Sunridge Village J, Sunridge Park, Douglas 103, Douglas 98, North Douglas, Geisreiter, and Pappas.

### **2.2 Land Use**

The 1,365-acre Plan Subarea is within the 6,042 ± acre Sunrise Douglas Community Plan Area and within the 2,632-acre SunRidge Specific Plan. The Plan Subarea is situated within the Sacramento County General Plan Urban Service boundary and Policy Area and is now within the boundaries of the newly incorporated City of Rancho Cordova. The proposed general plan land use designation for the Plan Subarea is Low Density Residential, Medium Density Residential, Commercial and Office, and Natural Preserve. Accordingly, the proposed zoning and specific plan designations for the Plan Subarea include Residential (ranging from 4 units/acre to 20 units/acre), Commercial, Park, and Open Space. Currently, the majority of the Plan Subarea is vacant. However, some of these areas contain residences, barns, and livestock pens.

### **2.3 Topography and Hydrology**

The Plan Subarea exhibits low to moderate relief topography with elevations ranging from approximately 170 to 250 feet above mean sea level. Average slopes are range from 0 to 8%. The Plan Subarea generally drains to the south and west via drainages within both the Morrison Creek and Laguna Creek watersheds. Both of these watersheds are part of the larger Lower Sacramento River watershed.

### **2.4 On-Site Wetlands**

The Plan Subarea contains 62.20 acres of waters of the United States including wetlands subject to jurisdiction under the CWA (Table 1). Wetlands within the Subarea include vernal pools, depressional seasonal wetlands, riverine seasonal wetlands, seasonal marsh, ephemeral drainage, ditches/canals, and stock ponds. The ephemeral drainages identified within the Plan Subarea are tributaries to both Morrison and Laguna Creeks. The acreage of each wetland type is summarized below in Table 1.

**Table 1 — Wetland Classification**

Type	Acreage
Vernal pool	44.76
Depressional seasonal wetland	1.15
Riverine seasonal wetland	4.73
Seasonal marsh	0.23
Ephemeral Drainage	1.06
Ditch/Canal	<0.01
Stock pond	10.27
<b>Total</b>	<b>62.20</b>

## **2.5 Regional Wetlands and Waters**

The climate of the Sacramento Valley region is characterized by hot, dry summers and cool, moist winters. Subsequently aquatic features within the region are predominantly seasonal in nature. The Plan Subarea is situated within the eastern half of Sacramento County where the predominant landforms are remnant terraces and intermediate to high terraces, which have distinct patterns of surface drainage and microrelief (NRCS, 1993). Surface drainage patterns in this region are dominated by meandering ephemeral and intermittent streams. In some of areas of the region these streams flow throughout the year due to the influences of agricultural irrigation and urban runoff. Vernal pools and other seasonal wetlands occur within small topographic depressions in the nearly level to gently sloping portions of the region.

As mentioned previously, the Plan Subarea is found within both the Morrison Creek and Laguna Creek watersheds, which are within the larger Lower Sacramento River watershed. Significant portions of these watersheds are within urbanized portions of the County. In many areas these creeks and their tributaries have been channelized and lined with concrete with development occurring often up to their channel banks. Morrison Creek and Laguna Creek eventually flow into the Upper Beach Lake Wildlife Area, which ultimately drains into the Stone Lakes National Wildlife Refuge and eventually into the Sacramento River Delta.

Local, state, and federal agencies and private organizations have initiated efforts to restore the integrity of the Morrison Creek and Laguna Creek watersheds. Examples of these efforts include the following: within the Morrison Creek watershed the Corps, the State Reclamation Board, the Sacramento Flood Control Agency, and the Sacramento Regional County Sanitation District are co-sponsoring a plan to create wetland habitat and address flood issues along portions of Morrison Creek; and within the Laguna Creek watershed the City of Sacramento has initiated the Laguna Creek Wetland Restoration project, which involves the removal of non-native species and the planting of native vegetation along the creek corridor.

Vernal pools within the southeastern Sacramento Valley region, which includes the Plan Subarea, are predominantly comprised of Northern Hardpan Vernal Pools (CDFG, 1998).



Northern Hardpan Vernal Pools occur on old alluvial terraces on the east side of the Great Valley from Tulare or Fresno counties north to Shasta County (CDFG, 1998). Vernal pools rarely occur in isolation but rather in complexes that consists of a series of vernal pools and associated swales and uplands. In 1997, it was estimated that approximately 53,000 acres of vernal pool complexes existed within Sacramento County (Holland, 1998). The majority of this habitat is concentrated within southeastern Sacramento County (Figure 2). Holland estimated that from 1972 to 1993 approximately 30,000 acres of vernal pool complex in Sacramento County were lost due to land conversion. This averages to approximately a 1.7% loss per year. However, losses of vernal pool complexes within Sacramento County since 1993 have dramatically dropped. Holland reported that from 1993 to 1997 a total of 215 acres of vernal pool complex were lost, which averages to a 0.1% loss per year (Holland, 1998).

Recent vernal pool conservation efforts in Sacramento County by various private, public, and non-governmental organizations have resulted in the creation of several vernal pool preserves throughout the County, including the nearby Anatolia Preserve, the AKT Mitigation Site, the County Landfill Mitigation Site, the Arroyo Seco Mitigation Site, Gene Anedel Park, and the Bryte Ranch Mitigation Site (Figure 2). In addition, the USFWS has established mitigation requirements for permitted take of vernal pool habitat such that the permitted action would not jeopardize the continued existence and the opportunity for recovery of those listed species. For direct impacts this mitigation typically involves: 2:1 preservation and 1:1 creation; and for indirect impacts it typically involves: 2:1 preservation. These ratios can be higher depending on the nature of the impacts and the availability of suitable locations for preservation and creation.

## 2.6 Regional Preserves

In Sacramento County, there are approximately 96,000 acres of existing and proposed open space set aside for the protection of vernal pool complexes, seasonal wetlands, stream corridors, sensitive species habitat, and other natural resources (Figure 2). This open space includes protected areas along Morrison Creek (Mather Regional Park and Upper Beach Lake Wildlife Refuge) and Laguna Creek (North Laguna Creek Wildlife Area, Sacramento Valley Open Space Conservancy Preserve, AKT Mitigation Site, Laguna Creek Parkway Preserve, Fallbrook Mitigation Site, Laguna Springs Mitigation Site, Sacramento Regional County Sanitation District Buffer Lands, and Upper Beach Lake Wildlife Refuge).

An analysis of the data in Figure 2 using Geographic Information System (GIS) software, indicates that approximately 22,000 acres of vernal pool complexes in the County are being protected by existing and currently proposed conservation areas. This equates to protection for approximately 42% of the vernal pool complexes within Sacramento County as they were mapped in 1998.

## 2.7 Federally Listed Species

The federally threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and federally endangered vernal pool tadpole shrimp (*Lepidurus packardii*) have been documented



throughout the Plan Subarea. A population of the federally threatened slender Orcutt grass (*Orcuttia tenuis*) was identified at the Sunridge Ranch site within the Plan Subarea. Also, populations of the federally endangered Sacramento Orcutt grass (*Orcuttia viscida*) are known to occur in the vicinity of the Plan Subarea.

There are 342 records of vernal pool fairy shrimp recorded in the California Natural Diversity Database (CNDDDB) for the entire state of California (CNDDDB, 2004). Of these records, 58 are from within Sacramento County (CNDDDB, 2004). There are 18 records from within five miles of the Plan Subarea boundaries and one record from within the Plan Subarea.

There are 174 records of vernal pool tadpole shrimp recorded in the CNDDDB for the entire state of California (CNDDDB, 2004). Of these records, a total of 58 are from within Sacramento County (CNDDDB, 2004). There are 25 records from within five miles of these boundaries and two records from within the Plan Subarea boundaries.

There are 81 records of slender Orcutt grass recorded in the CNDDDB for the entire state of California (CNDDDB, 2004). Of these records, a total of two are from within Sacramento County (CNDDDB, 2004). As mentioned above, one of these records is from within the Sunridge Ranch site.

There are nine records of Sacramento Orcutt grass recorded in the CNDDDB for the entire state of California (CNDDDB, 2004). All of these records are from within Sacramento County (CNDDDB, 2004). Five of these records are from within five miles of the Plan Subarea, two of which occur within the Anatolia Preserve to the southwest of the Plan Subarea.

## **2.8 Plan Subarea Description and History**

The owners of individual projects are proposing to develop parts of the Plan Subarea for residential, mixed use commercial, schools, parks, and a large open space/wetland preserve (Figure 11). The Plan Subarea is zoned for and approved (entitled) for residential development pursuant to the approved Sunrise Douglas Community Plan and SunRidge Specific Plan. The objective of the proposed projects within the Plan Subarea is to develop these sites in accordance with the land uses and policies set forth in the Sacramento County General Plan, Sunrise Douglas Community Plan and SunRidge Specific Plan and to meet the demand of a growing population within the Sacramento County General Plan Urban Policy Area.

Beginning in May 2002, the Planning Department of the County of Sacramento initiated a series of meetings to discuss wetland and federally listed species habitat preservation strategies within the Sunrise Douglas Community Plan Area. These meetings were attended by the respective federal and state agencies, by landowners and their respective consultants, and staff from Congressman Doug Ose's office. These meetings focused on resolving issues concerning wetland and listed species protection within the Specific Plan area. Various open-space alternatives were presented by agency representatives and by



landowners during these meetings, but the meetings terminated prior to reaching any consensus on a preserve configuration.

In March of 2004, Congressman Ose initiated meetings with the landowners and respective federal and local agencies in an attempt to resolve conflicts over the creation of an open space preserve and use of off-site mitigation. Congressman Ose encouraged the parties to work cooperatively to develop a workable balance between and amongst the following: the mandate of federal law; the need to preserve ecosystem integrity and the habitat of federally listed species; the need to acknowledge the planning policies and objectives of the City of Rancho Cordova; and the need to account for the economic realities facing private sector developers.

As a result of these meetings, the respective federal agencies worked to develop a strategy for wetland and habitat conservation within the Plan Area, which is outlined in the July 2004 *Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area* (The Strategy or Conceptual Strategy) (Appendix A) and a Preserve Map (see Figure 11). The goal of the Strategy was to identify areas that were necessary to maintain the long-term conservation values for wetlands and endangered species in the Plan Subarea. The Agencies generally focused on two preserve areas, one entirely within the Sunridge Ranch project site (western preserve) and one that incorporates portions of Sunridge Park, Douglas 103, Geisreiter, and Pappas (eastern preserve). The western preserve focused on populations of slender Orcutt grass, vernal pool fairy shrimp, and vernal pool tadpole shrimp. The eastern preserve focused on the headwaters of one of the forks of Morrison Creek as well as habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp. Implementation of the Strategy would be accomplished on a case-by-case basis through agency action on pending applications.

The Conceptual Strategy preserve areas will be protected through conservation easements aimed at protecting preserve functions and values. These easements will be held and managed by a non-profit entity, chosen by the landowners and approved by the Agencies whose primary objective is habitat management. The preserved lands will be managed and funded in perpetuity according to a preserve management plan prepared by the landowners and approved by the Agencies. The management plan will establish specific goals and objectives to ensure that the conditions within the preserve are maintained and where needed enhanced. This management plan will include specific measures for habitat maintenance, monitoring, reporting, and funding.

Mitigation for unavoidable impacts will be compensated at ratios that will ensure a no net loss of wetland habitat and provide for the enhancement of existing functions and values as a result of management efforts associated with the preserved land. As a result, the impacts to both wetlands and endangered species habitat will be mitigated to a level of insignificance, both as to individual projects in the Plan Subarea and taking into account the cumulative impact of those individual projects.



## 2.9 Impact Assessment

### 2.9.1 *Direct Effects*

Alternatives in this analysis consider a range of direct impacts to wetlands ranging from 59.89 acres to 32.71 acres of wetlands proposed to be impacted by grading associated with development within the Plan Subarea. Alternative preserve areas considered in this analysis respectively call for the preservation of wetland acreage ranging from 2.32 acres to 29.49 acres within on-site preserves ranging from 29 acres to 405 acres. Each of these alternatives is analyzed (below at section 3.3) for ability to achieve the Conceptual Strategy long term conservation goals, which are intended to avoid significant impacts to wetlands in light of proposed project purposes within the Plan Subarea.

A combination of on-site preservation and both off-site preservation and creation will be utilized to mitigate both for impacts to listed species' habitat, and for impacts to functions and values of Corps' jurisdictional areas from proposed fill of wetlands. Off-site mitigation will involve the creation of vernal pools and other wetlands at the Silva Consolidated Conservation Preserve and other suitable areas, and the purchase of preservation credits for impacts to endangered species habitat from the following conservation banks: Anatolia Conservation Bank, Borden Ranch Preserve, Bryte Ranch Conservation Bank, the Klotz Property, and other suitable areas. Mitigation is expected to fully replace the functions and values of areas subject to direct impacts.

### 2.9.2 *Indirect Effects*

Development of properties adjacent to the on-site preserve could result in indirect effects to preserve wetlands. Potential indirect effects would include hydrologic alteration, disturbance from construction equipment, non-point source pollution, and impacts from human encroachment.

In addition to serving as the basis for the on-site preserve configuration, the Conceptual Level Strategy will be used to minimize potential indirect effects to wetlands. The Conceptual Level Strategy puts forth measures to maintain the hydrologic integrity of preserved wetlands, maintain existing wildlife corridors, and minimize potential effects from storm water runoff leaving developed areas, and better buffer preserve wetlands from human encroachment. The specific measures employed to be consistent with the Conceptual Level Strategy will be presented in each project's respective permit application's supporting documents. Mitigation is expected to fully replace the loss of functions and values associated with indirect impacts.

### 2.9.3 *Cumulative Effects*

Under the CWA, cumulative effects are considered "changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water



quality of existing aquatic ecosystems.” (40 C.F.R. § 230.11(g)(1)). Under the Federal ESA, cumulative effects are those effects of future State or private activities, not involving Federal activities that are reasonably certain to occur within the action area of the Federal action subject to consultation. Future Federal actions requiring separate consultation (unrelated to the proposed action) are not considered in the cumulative effects section. (50 C.F.R. §402.02) Under the National Environmental Protection Act (NEPA), the Council on Environmental Quality (CEQ) defines cumulative impacts as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” (40 C.F.R. §1508.7.)

The collective effort of the agencies and applicants has resulted in a development and preservation plan that minimizes the cumulative effect of their respective project impacts on the aquatic ecosystems in the region. By coordinating avoidance and minimization measures collectively, the nine applicants have contributed to region wide conservation efforts aimed at preserving large, contiguous areas that protect sensitive plants and wildlife habitat. The majority of the resulting preserve area has been designed with the intention of connecting to preservation areas to the southwest of the Plan Subarea, including the existing Anatolia Conservation Bank.

A key component of the Conceptual Strategy preserve area is the preservation and management of the upper reaches to one of the main tributaries to Morrison Creek. Keeping this drainage and associated wetlands and uplands intact will help maintain the physical and biological integrity of the lower reaches of Morrison Creek and ultimately the Sacramento River, thus minimizing cumulative effects to the aquatic environment. Though the majority of the lower reaches of Morrison Creek are within urban portions of Sacramento County, it ultimately passes through the Upper Beach Lake Wildlife Area and the Stone Lakes National Wildlife Refuge just prior to draining into the Sacramento River. Maintaining the integrity of the upper reaches of this tributary will assist in local efforts to address protecting the aforementioned downstream habitat as well help reduce any potential flooding associated with any future proposed development within the Morrison Creek watershed. Preserving and managing this tributary to Morrison Creek will minimize the cumulative impacts to the Morrison Creek watershed associated with developing the Plan Subarea.

The Conceptual Strategy preserve areas will be protected and managed in perpetuity according to an agency approved preserve management plan. This management plan will insure that the functions and values of the preserve wetlands will be maintained and enhanced. Past agricultural activities within the Plan Subarea have altered the physical and hydrologic integrity of some the wetland areas, thus creating opportunities for habitat enhancement on-site. These protective and restorative measures will maintain and improve the conditions there such that the cumulative effects associated with the development of the Plan Subarea will be minimized.



As previously mentioned, compensatory mitigation, both for impacts to listed species' habitat, and for impacts to functions and values of Corps' jurisdictional areas, will be achieved by purchasing wetland preservation and creation credits at the Anatolia Conservation Bank, Borden Ranch Preserve, Bryte Ranch Conservation Bank, the Klotz Property, Silva Consolidated Conservation Preserve, Wildlands Mitigation Bank and other suitable areas resulting in no net loss of wetlands, including endangered species habitat, within the region. As mentioned previously this mitigation will be achieved through a combination of on-site preservation and off-site preservation, creation, and restoration. The on-site preserve will be protected in perpetuity through a conservation easement that will be funded with an endowment for monitoring, maintenance, and management by a third-party. Off-site mitigation will be achieved at the aforementioned mitigation banks. This mitigation strategy intends to achieve no net loss of wetlands and endangered species habitat in the region. By adopting and implementing this mitigation strategy the applicants will minimize the cumulative effects to endangered species habitat within the region and ensure that these impacts are not significant.

Future projects in the vicinity and region that are likely to have impacts on resources similar to those within the Plan Subarea will each have to independently agree to similar avoidance and minimization measures in order for those projects to be permitted by the respective agencies. Thus future federal actions unrelated to the proposed project will individually determine whether any proposed future project will result in adverse cumulative effects. Development of the remainder of the Sunrise Douglas Community Plan area, areas generally south of the Plan Subarea, will most likely involve the implementation of an open space preserve with goals similar to that of the Conceptual Strategy.

Implementation of the Conceptual Strategy, including creation of a preserve area according to this Strategy, and implementation of the compensatory mitigation strategy discussed above, is intended to assure that the proposed impacts to jurisdictional waters within the Subarea will not individually, or collectively, result in significant adverse cumulative effects to wetlands and endangered species habitat in the region.

## **2.10 Plan Subarea Purpose and Objectives**

The development of the Plan Subarea has the following purposes and objectives:

- Provide single-family residential housing units in a master planned setting to meet housing demands of a growing population within the Sacramento County General Plan Urban Service Boundary and Policy Area;

- Provide for development that is consistent and integrated with the land use map and policies of the County of Sacramento's General Plan, Zoning Ordinance and the adopted Sunrise-Douglas Community Plan/SunRidge Specific Plan;

- Minimize and/or reduce projected commute traffic trips within the Highway 50 commute shed and local region by providing housing in close proximity to jobs in support of a jobs housing balance;

Maximize the use of the extension of infrastructure (e.g. sewer mains and laterals, water mains, and other utilities) to the Sunrise-Douglas Community Plan/SunRidge Specific Plan project area; and

Provide for an avoidance and minimization strategy that develops a feasible conservation plan thereby reducing cumulative direct and indirect impacts to aquatic features from the implementation of the Specific Plan.

## **2.11 SunRidge Specific Plan Policy**

The following outline provides a summary of relative policies of the SunRidge Specific Plan that reflect the guiding principles adopted by the Community Advisory Committee for the Sunrise-Douglas Community Plan Area. Key issues relative to the proposed projects include land use, open space, circulation, and natural resource management and conservation.

### **2.11.1 Land Use**

The proposed projects have been designed in accordance with the SunRidge Specific Plan policies regarding land use. Applicable policies are as follows:

LU-1: Establish a community that provides for the social, recreational, economic, and housing needs of plan area residents.

LU-3: Provide space for retail and professional services necessary to serve the plan area residents and the public.

LU-4: Provide shopping, recreation, and services, and convenient non-auto travel modes, such that residents can reduce the need to travel outside of the plan area for many routine daily needs.

LU-6: Provide appropriate land use buffers between incompatible uses.

### **2.11.2 Open Space**

The proposed projects have been designed in accordance with the SunRidge Specific Plan policies regarding open space. Applicable policies are as follows:

OS-1: Protect environmentally sensitive areas by incorporating them into an open space.

OS-3: Provide contiguous open space corridors to accommodate natural processes. Reduce impacts of fragmentation by preserving and enhancing existing corridors and linking mitigation areas where feasible.

### **2.11.3 Circulation**

The proposed projects have been designed in accordance with the SunRidge Specific Plan policies regarding circulation. Applicable policies are as follows:



CI-1: Provide a safe, efficient, and convenient circulation system for motorists, cyclists, and pedestrians and provide for transportation modes appropriate to authorized land uses.

CI-8: To the extent practical, minimize the impacts of major circulation system improvements on natural resources.

#### ***2.11.4 Natural Resource Management and Conservation***

The proposed projects have been designed in accordance with the SunRidge Specific Plan policies regarding natural resource management and conservation. Applicable policies are as follows:

OSC-2: Avoid and preserve natural resources by careful allocation of land use and designation of permanent open space.

OSC-3: Provide contiguous open space corridors. Reduce impacts of fragmentation by preserving and enhancing existing corridors and linking re-created or replanted mitigation areas.

OSC-10: Buffer zones shall be provided around wetland preserve areas in accord with the applicable permits. Development adjacent to preserve sites shall ensure that no run-off water flows into or through any part of the contributing area of any existing or constructed wetland unless suitably treated through BMP methods as defined by the 404 permit.

#### **2.12 Sacramento County General Plan Policy**

The following outline provides a detailed listing of General Plan policies adopted by Sacramento County applicable to Plan Subarea. Key issues considered during design of the projects within the Plan Subarea included air quality, circulation, conservation/open space, housing, economics (public finance) and land use. These projects have been specifically designed to meet the policy requirements of the General Plan as an integral part of the overall purpose of developing the Plan Subarea. Policy statements outlined below are listed in relationship to the title of the individual General Plan elements.

##### ***2.12.1 Air Quality***

The proposed projects have been designed in accordance with County of Sacramento General Plan policies regarding air quality. Applicable County of Sacramento General Plan policies regarding air quality are as follows:

AQ-17: Require that development projects be located and designed in a manner, which will conserve air quality and minimize direct and indirect emission of air contaminants.

AQ-18: Encourage employment-intensive development, having the potential to employ 200 or more employees, where adequate transit service is planned, and discourage such development where adequate transit service is not planned.

AQ-23: Promote mixed-use development to reduce the length and frequency of vehicle trips.

AQ-24: Provide for increased intensity of development along existing and proposed transit corridors.

The SunRidge Specific Plan area was designed as a mixed use Master Planned community. The plan area is intended to play a significant role in providing a location for new housing and jobs along the Highway 50 corridor. A balance of jobs and housing in the area is projected to result in improvements to air quality by reducing vehicle miles traveled (VMT) associated with commuting. It is anticipated that the plan area will be serviced by public transit, which will assist in reducing VMT and aid in meeting General Plan air quality improvement objectives to the benefit of the public interest.

#### *2.12.2 Circulation*

The SunRidge Specific Plan proposes development of the area in a manner consistent with the Transit Oriented Development (TOD) concept identified in the 1993 County of Sacramento General Plan. The TOD concept was implemented in the General Plan through various policies including the following:

CI-11: Sacramento County shall reduce automobile travel demand by promoting mixed use development throughout the County, including the development of neighborhood support commercial services in areas that are primarily residential.

CI-14: Sacramento County shall utilize design and developments standards which support travel by transit, walking, bicycling, and clean alternative fuel and low emission vehicles.

The goal of the above policies is to reduce VMT and subsequently reduce the increase in vehicle emissions and improve air quality. Circulation facilities in the Specific Plan area have been designed to support alternative forms of transportation. Additionally, the plan area is located within the Urban Boundary area and will be served by regional transit programs.

#### *2.12.3 Conservation/Open Space*

The EIR prepared for the Sunrise Douglas Community Plan/SunRidge Specific Plan contemplated that development of the plan area would result in the fill of wetlands. While the EIR clearly delineates the loss of wetlands as a potentially significant impact, it acknowledges that the plan area has been identified as an Urban Growth Area and that preservation of all wetlands within the area would not be compatible with this designation. The following policies of the Conservation Element are of particular importance when considering the impacts of developing the projects on wetlands located in the Plan Subarea:



CO-78: Focus vernal pool preservation in permanent open space areas beyond the Urban Area.

CO-80: Select vernal pool preserves based on the following evaluation criteria: representativeness, habitat quality, watershed integrity, defensibility, buffer, preserve size, plant species variety, and presence of special status species.

CO-83: Ensure no net loss of vernal pool acreage, and/or values and functions, and mitigate any loss in relation to the values of quality of habitat.

With above policies, Sacramento County is acknowledging that it desires to maintain the existing acreage and function of wetlands while providing a location for permanent wetland preservation within the County that will not be impacted by urbanization.

#### *2.12.4 Economics*

A Public Facilities Financing Plan (PFFP) has been developed for the SunRidge Specific Plan area which identifies the costs associated with providing the major infrastructure improvements necessary to service the plan area, identifies existing funding sources and recommends funding sources for facilities not yet funded. The PFFP describes the costs and funding sources of all major infrastructure requirements including community facilities such as schools, libraries, fire facilities, transit, parks and other recreational facilities. Each property within the SunRidge Specific Plan area is required to pay the fair share of fees associated with development of the subject property. The fees generated by development of the Plan Subarea will be critical in off-setting the City's and County's cost of providing infrastructure. A portion of the fees generated by the development may be utilized to fund infrastructure outside the plan area to the benefit of the general public. In addition, property tax revenue and sales tax revenue generated by the proposed development will result in positive economic benefits for Sacramento County.

#### *2.12.5 Land Use*

The first goal identified in the Sacramento County General Plan Land Use Element is to provide:

“An orderly pattern of land use that concentrates urban development, enhances community character and identity through the creation and maintenance of neighborhoods, is functionally linked with transit, and protects the County's natural, environmental and agricultural resources” (County of Sacramento General Plan, Page 35).

In order to further this goal, the Sacramento County General Plan implements an Urban Growth Management Strategy. The General Plan directs Sacramento County growth and development toward an urban character by focusing policy upon a specific area where growth is intended and where the services are projected to be available as delimited by a designated Urban Services Boundary. The Sunrise Community Area/SunRidge Specific Plan area is an area designated as an Urban Growth Area (Figure III-1 – Sacramento

County General Plan Land Use Element). The projects within the Plan Subarea were designed to be compliant with the Sunrise Douglas Community Plan and SunRidge Specific Plan and are therefore in accordance with applicable general plan policy.

### **2.13 Applicable Policies, Laws, and Purposes**

The purpose for developing the Plan Subarea is defined by the need to comply with General Plan and Specific Plan policies and objectives, in addition to those objectives mandated by federal law as required by the federal CWA and the ESA. Development of the properties within the Plan Subarea is intended to directly implement the Sacramento County General Plan, including the Sunrise Douglas Community Plan and the SunRidge Specific Plan. These projects can only be developed where the General Plan allows it, where infrastructure and public services are planned to serve the project and where an area is of adequate enough size to facilitate financing of development of the respective project sites. Given the Plan Subarea's relative location in the City of Rancho Cordova and its close proximity to Highway 50 and proposed transit corridors in an area identified as a high growth regional transit corridor, development of the Plan Subarea in its current location will assist with implementation of key General Plan policies while meeting project goals and objectives.

Including an open space preserve as an integral part of the Plan Subarea development also serves to comply with the General Plan, Community Plan, and Specific Plan, as well as serving to avoid and minimize effects to the aquatic environment and habitat for federally listed species. The Conceptual Strategy preserve areas were designed to avoid and minimize direct, indirect, and cumulative effects to the maximum extent practicable in light of the overall project purpose and objectives.



### 3.0 REGIONAL ALTERNATIVES

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Although there is no permit action or proposal for action for the Subarea as a whole, the purpose of this regional analysis is to assess the indirect and cumulative effects on the aquatic environment and on habitat for federally listed species for a variety of alternatives within the Plan Subarea. Each project within the Plan Subarea will do its own Section 404(b)(1) alternatives analysis. This Subarea analysis allows for a comprehensive consideration of cumulative and indirect impacts. Each individual applicant will utilize this analysis as part of demonstrating their compliance with the Section 404(b)(1) Guidelines. An alternative will be considered practicable, if it is "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes" (40 CFR 230.3 (q), 230.10 (a) 2). Off-site alternatives will focus on large parcels of land available within the County of Sacramento. On-site alternatives evaluated in this analysis consist of the no development alternative and nine other preserve alternatives. These alternatives will be evaluated for their wetland impacts in light of the project's overall purpose and objectives.

#### 3.1 Off-Site Alternatives

An off-site alternatives analysis (OAA) was performed by the Sares-Regis Group dated October 10, 1994 (Sares-Regis, 1994) (Appendix B). The OAA evaluated a 1,225 acre master planned community, which is adjacent to and indicative of the currently proposed 1,365 acre Subarea Plan. Section 3.1 is using the 1994 OAA was used for this analysis because it thoroughly considered off-site alternatives for the original proposal and the criteria used during its evaluation remain applicable to the currently proposed development, and no new information exists to refute any of its findings. In fact, 5 of the final 15 properties that were evaluated have since been purchased for development and/or have been included in a specific plan, including the Grantline 2350 property, and are therefore unavailable. Additionally, the Urban Service Boundary for Sacramento County has not changed since the analysis was completed, so no additional properties have become available in the interim. A copy of the OAA is provided as an attachment to this report. Following is a summary of the criteria evaluated and the findings.

##### 3.1.1 *Criteria for Establishing Practicability of Off-Site Alternatives*

First, the alternative must be consistent with the overall Plan Subarea purposes. According to the accepted overall Plan Subarea purpose the site must be:

- Criterion 1: Located in Southern or Eastern Sacramento County;
- Criterion 2: Consistent with Sacramento County General Plan policies relating air quality objectives and jobs/housing relationship; and
- Criterion 3: A minimum size consistent with development as a master planned community.

Second, parcels are considered not available as alternative sites if they are:



Criterion 4: Under public ownership; or

Criterion 5: Already developed, committed for development, or committed to incompatible industrial use.

Alternative sites that did not meet the criteria outlined in 1 through 5 were deemed not consistent with the overall Plan Subarea purpose and dropped from further analysis.

Next, an alternative site is considered feasible if it is:

Criterion 6: Not located within an Aggregate Resource Area;

Criterion 7: Not located within the Mather Air Force Base Flight Zone;

Criterion 8: Not under Williamson Act Contract; or will be soon released;

Criterion 9: Economically viable as determined by cost to access municipal infrastructure (regional sewer);

Criterion 10: Economically viable as determined by cost to access freeways, and degradation of air quality due to distance from freeways; and

Criterion 11: Large enough to support major infrastructure improvement cost.

The second test in determining if a site qualifies as a viable alternative is whether the alternative site:

Criterion 12: Has less environmental impact on the aquatic ecosystem.

The third test in determining if a site qualifies as a viable alternative to the Plan Subarea is whether there are other significant adverse environmental consequences. The following are the criteria established to define other significant adverse environmental consequences.

Criterion 13: Air quality is degraded due to increased distance from existing or planned light rail line; or

Criterion 14: Oak woodlands or riparian zones are substantially disturbed.

- The overall Plan Subarea purpose is to develop a viable master planned community with affordable housing in southern or east Sacramento County that will be consistent with the County's land use policies.
- The proposed Plan Subarea would develop approximately 7,000 dwelling units while supporting commercial, business-professional, school and park uses on 1,225 acres.
- Policies in the Sacramento County General Plan (1985) and planning practice in the Sacramento region since 1982 indicate that housing opportunities should be located within 8 miles of major employment centers.
- The major employment centers in the Sacramento Region are the downtown core area and concentrations of employment along the Highway 50 corridor. This includes the Cordova/Sunrise employment center.

- In order to locate housing in close proximity to employment centers along the Highway 50 corridor and avoid traffic congestion at crossings of the American River the alternative sites should be located south of the American River.
- An 8 mile driving distance from an employment center defines the “commute shed” for that center. In order to be consistent with Sacramento County policy 80 percent of all housing opportunity should be within the commute shed. To accommodate new housing need it is determined that the alternative sites should be within the commute shed.
- Master planned communities in the Sacramento region have been not less than 400 acres in size and this is assumed to be a minimum threshold criterion.
- The majority of the land area in the south and south central (Elk Grove and Vineyard) areas of Sacramento County has been substantially developed in small estate parcels of 5 to 20 acres and is not available for development.
- Most large land holdings in the eastern portion of the county are not available or are highly constrained.
- A total of 47 parcels, including the 39 parcels specifically identified in previous studies, are identified as potential candidates to be considered as alternate sites. All 47 sites in this study reflect a more systematic sequence in which evaluation criteria are applied.
- In this study, seven of the original 39 parcels (Parcels 14, 15, 21, 25, 26, 27, and 28) are reconfigured in new aggregations as larger alternative sites, as noted in Table 1 of the OAA. Thirty-two of these parcels did not meet the minimum threshold requirements of location, size or availability or were aggregated as new parcel configurations and were not further considered.
- The remaining 15 parcels are analyzed for conditions relating to Plan Subarea feasibility, and the potential effect on wetlands and other significant natural resources. Five (parcels 9, 10, 17, 35, and 36) of the final 15 parcels that were evaluated have since been purchased for development and/or have been included in a specific plan. Additionally, the Urban Service Boundary for Sacramento County has not changed since the report was distributed, so no additional properties have become available in the interim.
- All sites in the study area, including the Sunrise-Douglas site, are constrained by one or more criterion and none have been determined to be a superior site which meets the overall Plan Subarea purpose.
- The Sunrise-Douglas site is the least constrained.

The OAA includes comprehensive tables that provide a list of all sites evaluated as alternative sites for the Sunrise-Douglas area. Table 1 summarizes the threshold analysis



which determines which alternative sites fulfill the minimum requirements of location, size, and availability. Only the sites (i.e., 15 parcels) that are consistent with the overall Plan Subarea purpose were considered further in the analysis. Table 2 provides a summary of the relative ranking of each alternate site in consideration of criteria that evaluate feasibility, relative impact on the wetland resource, and negative impacts on other significant environmental resources. The criteria are ranked on a scale of 0 to 5 according to the characteristics and standards provided in Sections 10 through 18. A site satisfying all the criteria could achieve a ranking of 45. No site achieved this ranking; however, the Sunrise-Douglas property ranked the highest at 38, with the nearest contender ranking only 32. New parcel information collected since 1994 does not change the rankings, as the Sunrise-Douglas property still ranks the highest. For more detailed information and analysis refer to the attached OAA.

### **3.2 On-Site Preserve Alternatives**

Ten preserve configurations were considered for this analysis, which includes the Sunridge Specific Plan alternative (Alternative 1) and the Conceptual Strategy alternative (Alternative 9) (Figures 3-11). Additionally, a No Development Alternative was also considered. The remaining alternatives consider different open space preserve configurations and development scenarios.

### **3.3 Criteria for Establishing Practicability and Analyzing Impacts to Aquatic Ecosystems of On-Site Preserve Alternatives**

The following criteria were used for establishing the practicability of an on-site preserve alternative and determining whether the alternative minimizes impacts to aquatic ecosystems within the Plan Subarea such that it is able to achieve the long term goals of the Conceptual Strategy.

#### **3.3.1 *Impacts to Waters of the U.S.***

- Criterion 1: Results in direct impacts to waters of the U.S. that are less than or equal to that of the Conceptual Strategy alternative (Alternative 9 in the comparison tables and discussion below); and
- Criterion 2: Minimizes indirect impacts to wetlands within an on-site preserve by providing for a preserve with a low preserve perimeter to area ratio. Vernal pool preserves with a high edge to interior ratio typically are more prone to impacts from adjacent land uses (Clark et al, 1998). Potential impacts include altered hydrology from urban runoff, disturbance by humans and domestic animals, and introduction of exotic plant species. This would likely result in increased preserve management cost per acre in order to maintain the integrity of the preserve wetlands. Therefore alternatives with low preserve perimeter to area ratios would be considered better in terms of minimizing the potential indirect effects of adjacent land

uses on preserve wetlands, as well as the cumulative effects on these resources regionally.

Table 2 below summarizes each alternative's effects on wetlands within the Plan Subarea. "Wetland Impacts" refers to direct impacts to wetlands and other waters of the U.S. within the footprint of the proposed development areas and "Preserve Area Wetlands" refers to those wetlands and other waters of the U.S. within the preserve area. "Preserve Area" refers to the total acreage of the on-site preserves, "Total Preserve Perimeter" represents the total length of preserve boundaries, and "Preserve Perimeter/Area" is the ratio between the aforementioned parameters (alternatives with a lower perimeter to area ratio would be considered more favorable).

**Table 2 — Summary of Wetland Impacts and Preservation**

	ON-SITE ALTERNATIVES									
	No Development	1	2	3	4	5	6	7	8	9
Wetland Impacts (ac)	0	59.89	32.71	37.66	53.61	47.31	39.33	41.06	39.18	44.20
Preserve Area Wetlands (ac)	0	2.32	29.49	24.54	8.59	14.89	22.87	21.14	23.02	18.00
Preserve Area (ac)	0	26	405	234	87	134	160	165	181	211
Total Preserve Perimeter (ft)	0	30,274	35,733	17,779	30,303	34,982	34,435	34,361	21,021	8,845
Preserve Perimeter/Area (ft/ac)*	--	344	75	150	204	226	219	209	190	100

\*See discussion for Criterion 2.

An alternative would be considered practicable if it achieved the overall Plan Subarea purpose and objectives, which includes consistency with the local planning documents, as follows:

### 3.3.2 Purposes and Objectives

Criterion 3: Does not result in a significant reduction in the acreage of developable land within the Plan Subarea. A preserve alternative that substantially reduces the developable land within the Plan Subarea would be considered impracticable because it does not meet the overall purpose of the Plan Subarea; and

Table 3 below summarizes the preserve and development acreages for each alternative.



**Table 3 — Summary of Preserve and Development Acreages**

	On-Site Alternatives									
	No Development	1	2	3	4	5	6	7	8	9
Plan Subarea (ac)	1,365	1,365	1,365	1,365	1,365	1,365	1,365	1,365	1,365	1,365
Preserve Area (ac)	0	26	405	239	87	134	160	165	181	211
Development Area (ac)	0	1,339	960	1,126	1,278	1,231	1,205	1,200	1,184	1,154
Percentage of Plan Subarea Preserved	0%	2%	30%	18%	6%	10%	12%	12%	13%	15%
Percentage of Plan Subarea Developable	0%	98%	70%	82%	94%	90%	88%	88%	87%	85%

Criterion 4: Provides for large, contiguous open space areas that protect environmentally sensitive habitats with adequate buffer zones from adjacent incompatible uses as outlined in the Sacramento County General Plan and SunRidge Specific Plan. Environmentally sensitive vernal pool complexes within the Plan Subarea would be better protected in preserves that limit potential indirect impacts by having a significant portion of preserved vernal pool habitat greater than 250 feet from adjacent development. The use of this 250-foot rule is consistent with the USFWS's policy regarding indirect impacts to vernal pool habitat. A preserve alternative would be considered viable if it protected a large percentage of its vernal pool habitat. The creation of a more viable preserve would better minimize the cumulative effects associated with developing the Plan Subarea.

Table 4 below summarizes the percentage of preserved vernal pool habitat that would not be considered indirectly impacted according to USFWS's policy regarding indirect impacts to vernal pool species habitat. "Vernal Pool Habitat within the Preserve" includes all vernal pools, depressional seasonal wetlands, and riverine seasonal wetlands, as most of these features in the Plan Subarea represent potential habitat for sensitive vernal pools species. "Vernal Pool Habitat Protected According to Service Guidelines" is the sum of all vernal pool habitat within the preserve that is entirely more than 250 feet from the preserve/development boundary. It is understood that these wetlands will be credited toward the preservation credits needed to mitigate for direct impacts to vernal pool habitat.

**Table 4 — Summary of Vernal Pool Habitat in On-Site Preserves**

	ON-SITE ALTERNATIVES									
	No Development	1	2	3	4	5	6	7	8	9
Vernal Pool Habitat within the Preserve (ac)	0	2.15	25.42	23.76	8.21	14.18	19.08	20.74	19.21	17.32
Vernal Pool Habitat Protected According to Service Guidelines (ac)	0	0	10.53	2.74	0.17	0.31	0.23	0.26	1.42	7.14
Percentage of Vernal Pool Preserve Habitat Protected	0%	0%	41.4%	11.5%	2.1%	2.2%	1.2%	1.3%	7.4%	41.2%

An alternative preserve configuration would be considered practicable if it is capable of being done considering costs in light of the overall purposes and objectives, as follows:

Criterion 5: Would not result in a significant increase to development cost due to a loss of developable acres within the Plan Subarea. In the development of alternative on-site preserves, consideration was given not only to the quality and extent of wetlands to be protected but also the practicability of implementing the preserve configuration. This analysis sought to strike a balance between the benefit to aquatic ecosystems of a particular preserve configuration and the cost of that preserve configuration, calculated by distributing the adjusted project costs (on- and off-site infrastructure and public facilities costs, grading costs) over the net developable acreage remaining after avoided acreage is taken into account. This is an important ratio to measure because, generally, project costs do not decrease in a linear fashion as developable area decreases, but rather tend to decrease at a much slower rate. This economy of scale results in projects with less area being more expensive to construct, even if the incremental increase in avoided area does not yield significantly greater benefit to aquatic ecosystems. The Agencies and the applicants agree that some reasonable balance between these two elements should be achieved within the Plan Subarea.

Table 5 below illustrates the project costs per net developable acre of each proposed alternative, and compares the percentage increase in costs per net developable acre between the Specific Plan alternative (Alternative 1) and each other alternative.



Table 5 — Comparison of Costs per Net Developable Acre

	Alternatives										Assumptions	
	No Fill	1	2	3	4	5	6	7	8	9	Amount	Per
Preserve Acres (PA)	0	26	405	239	88	134	160	165	181	211		
Net Developable Acres (DA)	0	937	672	788	895	862	844	840	829	808		
Estimated Costs												
1. Major Roads/Infrastructure	\$0	\$128,129,000	\$128,129,000	\$128,129,000	\$128,129,000	\$128,129,000	\$128,129,000	\$128,129,000	\$128,129,000	\$128,129,000	\$128,129,000	Fixed
2. Common Grading	\$0	\$4,610,944	\$4,610,944	\$4,610,944	\$4,610,944	\$4,610,944	\$4,610,944	\$4,610,944	\$4,610,944	\$4,610,944	\$4,610,944	Fixed
3. Collector Street Improvements	\$0	\$33,647,670	\$24,131,520	\$28,297,080	\$32,139,450	\$30,954,420	\$30,308,040	\$30,164,400	\$29,769,390	\$29,015,280	\$35,910	DA
4. Common Entitlement/Permitting	\$0	\$10,920,000	\$10,920,000	\$10,920,000	\$10,920,000	\$10,920,000	\$10,920,000	\$10,920,000	\$10,920,000	\$10,920,000	\$10,920,000	Fixed
5. Wetland Crossings	\$0	\$5,130,000	\$10,260,000	\$2,565,000	\$5,130,000	\$5,130,000	\$5,130,000	\$5,130,000	\$5,130,000	\$5,130,000		Fixed
Total	\$0	\$182,437,614	\$178,051,464	\$174,522,024	\$180,929,394	\$179,744,364	\$179,097,984	\$178,954,344	\$178,559,334	\$177,805,224		
Per Net Developable Acre	\$0	\$194,704	\$264,958	\$221,475	\$202,156	\$208,520	\$212,201	\$213,041	\$215,391	\$220,056		
Percent Change			36%	14%	4%	7%	9%	9%	11%	13%		

### 3.4 Analysis

#### 3.4.1 No Development Alternative

The No Development Alternative assumes that the proposed projects are not built and that the current land uses within the Plan Subarea would be maintained. The No Development Alternative would not provide for an on-site preserve and would thus not provide for any perpetual protection or management for on-site wetlands and endangered species habitat. Aquatic resources within the Plan Subarea could subsequently continue to be subject to inadvertent impacts associated with the current land uses.

#### Impacts to Waters of the U.S.

*Criterion 1: Results in direct impacts to waters of the U.S. that are less than or equal to that of the Conceptual Strategy alternative.*

This criterion would be satisfied under the No Development Alternative.

*Criterion 2: Minimizes indirect impacts to wetlands within an on-site preserve by providing for a preserve with a low preserve perimeter to area ratio.*

This criterion would not be satisfied under the No Development Alternative as it would not result in the preservation of on-site wetlands in perpetuity.

#### Purposes and Objectives

*Criterion 3: Does not result in a significant reduction in the acreage of developable land within the Plan Subarea. A preserve alternative that substantially reduces the developable land within the Plan Subarea would be considered impracticable because it does not meet the overall purpose of the Plan Subarea.*

This criterion would not be satisfied under the No Development Alternative as it does not provide for any development.

*Criterion 4: Provides for large, contiguous open space areas that protect environmentally sensitive habitats with adequate buffer zones from adjacent incompatible uses as outlined in the Sacramento County General Plan and SunRidge Specific Plan. A preserve alternative would be considered more viable if it protected a greater, or equal, percentage of vernal pool habitat than that of the Conceptual Strategy alternative.*

This criterion would not be satisfied under the No Development Alternative as it does not provide for the establishment and management of an open space preserve. Under the no fill alternative, the Subarea would likely retain its current habitat functions and values, however there is no guarantee that they would continue to be maintained as current and future land uses within the Plan Subarea offer no protection or management for vernal pool habitat.



## Costs

*Criterion 5: Would not result in significant increase in costs per net developable acre.*

This criterion is not applicable to the No Development Alternative as it does not involve the development of a preserve.

## Summary

Though the No Development Alternative would not result in any direct impacts to the aquatic environment it does not satisfy any of the remaining criteria and is thus not considered practicable. This alternative does not provide for the protection and management of any of the wetlands within the Plan Subarea and thus does not insure that direct, indirect, and cumulative impacts to these resources will not occur. Potential impacts could stem from over grazing, off-road vehicle use, hydrologic alterations, and the introduction of non-native species.

### 3.4.2 On-Site Alternative 1 (Specific Plan Alternative)

Alternative 1 is based on the land use designations established for the Plan Subarea portion of the SunRidge Specific Plan. The Specific Plan called for the creation a 26-acre open space/drainage way and 1,339 acres of mixed use development within the 1,365-acre Plan Subarea. The 26-acre preserve would be centered on the tributary to Laguna Creek within the Geisreiter and Pappas project sites, preserving 2.32 acres of wetlands. The remaining 1,267 acres of the Specific Plan Area (Mather East and Anatolia) include 783 acres of mixed use development and 484 acres of wetland preserve (Anatolia Conservation Bank and Morrison Creek Preserves).

## Impacts to Waters of the U.S.

*Criterion 1: Results in direct impacts to waters of the U.S. that are less than or equal to that of the Conceptual Strategy alternative.*

This criterion would not be satisfied under Alternative 1, as it would result in 15.69 more acres of direct wetland impacts than that of the Conceptual Strategy alternative.

*Criterion 2: Minimizes indirect impacts to wetlands within an on-site preserve by providing for a preserve with a low preserve perimeter to area ratio.*

This preserve would have a relatively high preserve perimeter/area ratio of 344 ft/ac. The preserve area is relatively small and narrow resulting in more area exposed to potential indirect effects and subsequently contributing to cumulative impacts to wetlands and endangered species habitat within the region.

## Purposes and Objectives

*Criterion 3: Does not result in a significant reduction in the acreage of developable land within the Plan Subarea. A preserve alternative that substantially reduces the*

*developable land within the Plan Subarea would be considered impracticable because it does not meet the overall purpose of the Plan Subarea.*

This criterion would be satisfied under Alternative 1 as it would require that only 2% of the Plan Subarea be set aside for an on-site preserve, which is sufficient to meet the mixed use development objectives established in the Specific Plan.

*Criterion 4: Provides for large, contiguous open space areas that protect environmentally sensitive habitats with adequate buffer zones from adjacent incompatible uses as outlined in the Sacramento County General Plan and SunRidge Specific Plan. A preserve alternative would be considered more viable if it protected a greater, or equal, percentage of vernal pool habitat than that of the Conceptual Strategy alternative.*

This criterion would not be satisfied under Alternative 1. This alternative would only preserve 2.32 acres of wetlands that would lack adequate buffers from the surrounding residential and commercial developments. As seen in Table 4, none of the vernal pool habitat within the preserve would be adequately buffered from the surrounding proposed land use. Approximately 2.15 acres of vernal pool habitat would subsequently be indirectly impacted. This unviable preserve configuration could subsequently contribute to cumulative impacts to vernal pool habitat in the region.

#### Costs

*Criterion 5: Would not result in significant increase in costs per net developable acre as compared to the Specific Plan alternative (Alternative 1)*

Alternative 1 meets this criterion.

#### Summary

Alternative 1 does not minimize impacts to aquatic ecosystems in comparison with other proposed alternatives. This alternative would result in 59.89 acres of direct wetland impacts and would result in 2.15 acres of indirect impacts to vernal pool habitat. This preserve configuration results in a very high perimeter to area ratio that does not effectively protect the preserved vernal pool habitat. The preserve is relatively small (26 acres) and only protects 2.32 acres of wetlands within the Plan Subarea. Though this preserve was designed primarily to protect the tributary to Laguna Creek, it does not effectively protect its supporting watershed and does not adequately buffer it from surrounding land uses. This preserve configuration would not effectively minimize cumulative impacts to wetlands and endangered species habitat within the region. Alternative 1 would be practicable in terms of logistics, existing technology and costs.

#### 3.4.3 On-Site Alternative 2

Alternative 2 would result in the creation of 405 acres of open space preserve within two preserve areas containing a total of 29.49 acres of wetlands (Figure 2). These two preserves would encompass the headwaters of two unnamed tributaries to Morrison



Creek and Laguna Creek, which are approximately 227 and 130 acres in size, respectively. These preserves would also include vernal pool complexes within Sunridge Park, Douglas 98, Douglas 103, Geisreiter, and Pappas. A 48-acre vernal pool preserve would also be created within the middle of the Sunridge Ranch property.

### **Impacts to Waters of the U.S.**

*Criterion 1: Results in direct impacts to waters of the U.S. that are less than or equal to that of the Conceptual Strategy alternative.*

This criterion would be satisfied under Alternative 2, as it would result in 11.49 fewer acres of direct wetland impacts than that of the Conceptual Strategy alternative.

*Criterion 2: Minimizes indirect impacts to wetlands within an on-site preserve by providing for a preserve with a low preserve perimeter to area ratio.*

This preserve would have a relatively low preserve perimeter/area ratio of 75 ft/ac. This preserve configuration would better protect the preserve wetlands from potential indirect impacts from the adjacent development and better minimize the cumulative effects to wetlands and vernal species habitat within the region.

### **Purposes and Objectives**

*Criterion 3: Does not result in a significant reduction in the acreage of developable land within the Plan Subarea. A preserve alternative that substantially reduces the developable land within the Plan Subarea would be considered impracticable because it does not meet the overall purpose of the Plan Subarea.*

This criterion would not be satisfied as it requires that 30% of the Plan Subarea be set aside for the establishment of an on-site preserve. This amount is significantly more than that of the 2% for Specific Plan Alternative (Alternative 1). This significant reduction in land available for the development of homes, schools, neighborhood parks, and commercial space would be considered impracticable and inconsistent with the mixed use development set forth in the Specific Plan.

*Criterion 4: Provides for large, contiguous open space areas that protect environmentally sensitive habitats with adequate buffer zones from adjacent incompatible uses as outlined in the Sacramento County General Plan and SunRidge Specific Plan. A preserve alternative would be considered more viable if it protected a greater, or equal, percentage of vernal pool habitat than that of the Conceptual Strategy alternative.*

This criterion would be satisfied by providing for the preservation of 405-acres in three on-site preserves, each relatively large enough to be buffered from the adjacent residential and commercial developments. This preserve configuration would effectively protect 41% of its vernal pool habitat from surrounding incompatible land uses, which is the same percentage as that of the Conceptual Strategy alternative.

## Costs

*Criterion 5: Would not result in significant increase in costs per net developable acre as compared to the Specific Plan alternative (Alternative 1).*

This criterion is not satisfied as Alternative 2 results in a significant increase in the cost per net developable acre (\$264,958/acre, an increase of 36%) due to the significant decrease in developable acreage (379 acres, or 28% relative to the Specific Plan alternative).

## Summary

Though Alternative 2 results in fewer direct and indirect impacts to the aquatic environment than that of the Conceptual Strategy alternative, it is considered to be impracticable due to the relatively high costs associated with developing the remainder of the Plan Subarea and the fact that the remaining land is not sufficient to achieve the overall purpose of the Specific Plan.

Though Alternative 2 satisfies the logistics and existing technology Criteria, there would be logistic constraints associated with developing the remaining land within the Plan Subarea, which will drive up the project costs. The open space preserve alignment would create technological and logistical constraints associated with the layout of infrastructure (roads, sewer, and water lines) within the Plan Subarea. For example, it would be logistically difficult to develop the Geisreiter and Pappas project sites due to limited infrastructure access points along their eastern and western boundaries. Any necessary road and utility alignments would have to pass through the preserve areas resulting in increased cost and efforts to avoid and minimize impacts to the preserves. These increased costs, distributed over decreased net developable acreage, result in a significant increase in cost per net developable acreage, making Alternative 2 impracticable.

### 3.4.4 On-Site Alternative 3

Alternative 3 would result in the creation of 239 acres of open space preserve within three preserves containing a total of 24.54 acres of wetlands (Figure 3). Two of these preserves would encompass the headwaters of two unnamed tributaries to Morrison Creek and Laguna Creek, which are approximately 119 and 92 acres in size respectively. These preserves would also include vernal pool complexes within Sunridge Park, Douglas 98, Douglas 103, Geisreiter, and Pappas. A 28-acre vernal pool preserve would also be created within the middle of the Sunridge Ranch property.

## Impacts to Waters of the U.S.

*Criterion 1: Results in direct impacts to waters of the U.S. that are less than or equal to that of the Conceptual Strategy alternative.*

This criterion would be satisfied under Alternative 3, as it would result in 6.54 fewer acres of direct wetland impacts than that of the Conceptual Strategy alternative.



*Criterion 2: Minimizes indirect impacts to wetlands within an on-site preserve by providing for a preserve with a low preserve perimeter to area ratio.*

This preserve would have a preserve perimeter/area ratio of 150 ft/ac. These preserve boundaries are convoluted resulting in more area exposed to potential indirect effects and subsequently contributing to cumulative impacts to wetlands and endangered species habitat within the region.

### **Purposes and Objectives**

*Criterion 3: Does not result in a significant reduction in the acreage of developable land within the Plan Subarea. A preserve alternative that substantially reduces the developable land within the Plan Subarea would be considered impracticable because it does not meet the overall purpose of the Plan Subarea.*

This criterion would not be satisfied under Alternative 3 as it would require that 18% of the Plan Subarea be set aside for an on-site preserve.

*Criterion 4: Provides for large, contiguous open space areas that protect environmentally sensitive habitats with adequate buffer zones from adjacent incompatible uses as outlined in the Sacramento County General Plan and SunRidge Specific Plan. A preserve alternative would be considered more viable if it protected a greater, or equal, percentage of vernal pool habitat than that of the Conceptual Strategy alternative.*

This criterion would not be satisfied under Alternative 3. Though this alternative does provide for the preservation of 239-acres in three on-site preserves, two of which are relatively large, it does not adequately protect the vernal pool habitat within the preserve. As seen in Table 4, only 11.5% of the vernal pool habitat within the preserve would be adequately buffered from the surrounding proposed land use. Approximately 21.02 acres of vernal pool habitat would subsequently be indirectly impacted. This is largely due to the long, thin preserves that were designed primarily to protect the aforementioned tributaries. This less viable preserve configuration could subsequently contribute to cumulative impacts to vernal pool habitat in the region.

### **Costs**

*Criterion 5: Would not result in significant increase in costs per net developable acre as compared to the Specific Plan alternative (Alternative 1).*

This criterion would be satisfied as Alternative 3 does not result in a significant increase in the cost per net developable acre as compared to the Specific Plan alternative (\$221,475, an increase of 14%). The decrease in developable acreage is not considered significant (213 acres, or 16% relative to the Specific Plan Alternative).

## Summary

Alternative 3 does not minimize impacts to the aquatic ecosystem in comparison with other alternatives considered. The Alternative 3 preserve configuration will result in a less viable preserve as only 11.5% of the preserved vernal pool habitat would be protected from potential indirect impacts from the adjacent land use. The three preserves are relatively narrow with convoluted boundaries and would thus be more subject to potential edge effects, which would include altered hydrology from urban runoff, disturbance by humans and domestic animals, and introduction of exotic plant species. A less viable preserve could potentially contribute to cumulative impacts to wetlands and endangered species habitat within the region.

Though Alternative 3 would not be impracticable based on logistics and existing technology, there would be logistic constraints associated with developing the remaining land within the Plan Subarea. The open space preserve alignment would create logistical constraints associated with the layout of infrastructure (roads, sewer, and water lines) within the Plan Subarea. For example, it would be logistically difficult to develop the Douglas 98, Douglas 103, Geisreiter and Pappas project sites due to limited infrastructure access points. Any necessary road and utility alignments would have to pass through the preserve areas resulting in increased cost to avoid and minimize impacts to the preserves.

### 3.4.5 On-Site Alternative 4

Alternative 4 would result in the creation of 87 acres of open space preserve within three preserves containing a total of 8.59 acres of wetlands (Figure 4). This alternative would protect a portion of the tributary to Morrison Creek in a 34-acre preserve; however the protected headwaters would be restricted to the area along the western boundaries of Douglas 103 and Geisreiter, and would include a small vernal pool complex in the northwest corner of Pappas. It would also protect the tributary to Laguna Creek along the eastern boundaries of Pappas and Geisreiter in a 49-acre preserve. A 4-acre vernal pool preserve would also be created within the middle of the Sunridge Ranch property.

## Impacts to Waters of the U.S.

*Criterion 1: Results in direct impacts to waters of the U.S. that are less than or equal to that of the Conceptual Strategy alternative.*

This criterion would not be satisfied under Alternative 4, as it would result in 9.41 more acres of direct wetland impacts than that of the Conceptual Strategy alternative.

*Criterion 2: Minimizes indirect impacts to wetlands within an on-site preserve by providing for a preserve with a low preserve perimeter to area ratio.*

This preserve would have a relatively high preserve perimeter/area ratio of 204 ft/ac. The preserve areas are relatively small and narrow resulting in more area exposed to potential indirect effects and subsequently contributing to cumulative impacts to wetlands and endangered species habitat within the region.



## Purposes and Objectives

*Criterion 3: Does not result in a significant reduction in the acreage of developable land within the Plan Subarea. A preserve alternative that substantially reduces the developable land within the Plan Subarea would be considered impracticable because it does not meet the overall purpose of the Plan Subarea.*

This criterion would be satisfied under Alternative 4 as it would require that only 6% of the Plan Subarea be set aside for an on-site preserve, which is sufficient to meet the mixed use development objectives established in the Specific Plan.

*Criterion 4: Provides for large, contiguous open space areas that protect environmentally sensitive habitats with adequate buffer zones from adjacent incompatible uses as outlined in the Sacramento County General Plan and SunRidge Specific Plan. A preserve alternative would be considered more viable if it protected a greater, or equal, percentage of vernal pool habitat than that of the Conceptual Strategy alternative.*

This criterion would not be satisfied under Alternative 4. This alternative would only preserve 8.59 acres of wetlands that would lack adequate buffers from the surrounding residential and commercial developments. As seen in Table 4, only 2.1% of the vernal pool habitat within the preserve would be adequately buffered from the surrounding proposed land use. Approximately 8.04 acres of vernal pool habitat would subsequently be indirectly impacted. This less viable preserve configuration could subsequently contribute to cumulative impacts to vernal pool habitat in the region.

## Costs

*Criterion 5: Would not result in significant increase in costs per net developable acre as compared to the Specific Plan alternative (Alternative 1).*

This criterion would be satisfied as Alternative 4 does not result in a significant increase in the cost per net developable acre (\$202,156, an increase of 4%). The decrease in developable acreage is not considered significant (61 acres, or 4% relative to the Specific Plan alternative).

## Summary

Alternative 4 results in greater impacts to the aquatic ecosystem than that of the other alternatives considered. This alternative would result in greater direct wetland impacts than other alternatives considered and would result in 8.04 acres of indirect impacts to vernal pool habitat. This preserve configuration results in a relatively high perimeter to area ratio that only effectively protects 2.1% of its preserved vernal pool habitat. The three preserves are relatively small (4, 34, and 49 acres) and only protect 8.59 acres of wetlands within the Plan Subarea. This preserve configuration is considered to have poor viability and would thus not effectively minimize cumulative impacts to wetlands and endangered species habitat within the region.

#### 3.4.6 On-Site Alternative 5

Alternative 5 would result in the creation of 134 acres of open space preserve within three preserve areas containing a total of 14.89 acres of wetlands (Figure 5). This alternative would protect the tributary to Morrison Creek in a 57-acre preserve area; however the preserve would only include the protected headwaters along the western boundaries of Douglas 103 and Geisreiter, and would include a vernal pool complex within the northwestern corner of Pappas. It would also protect the tributary to Laguna Creek along the eastern boundaries of Pappas and Geisreiter in a 67-acre preserve area that would include a vernal pool complex within the Douglas 98 site. A 10-acre vernal pool preserve would also be created within the middle of the SunRidge Ranch property.

#### Impacts to Waters of the U.S.

*Criterion 1: Results in direct impacts to waters of the U.S. that are less than or equal to that of the Conceptual Strategy alternative.*

This criterion would not be satisfied under Alternative 5, as it would result in 3.11 more acres of direct wetland impacts than that of the Conceptual Strategy alternative.

*Criterion 2: Minimizes indirect impacts to wetlands within an on-site preserve by providing for a preserve with a low preserve perimeter to area ratio.*

This preserve would have a relatively high preserve perimeter/area ratio of 226 ft/ac. These preserve boundaries are relatively convoluted resulting in more area exposed to potential indirect effects and subsequently contributing to cumulative impacts to wetlands and endangered species habitat within the region.

#### Purposes and Objectives

*Criterion 3: Does not result in a significant reduction in the acreage of developable land within the Plan Subarea. A preserve alternative that substantially reduces the developable land within the Plan Subarea would be considered impracticable because it does not meet the overall purpose of the Plan Subarea.*

This criterion would be satisfied under Alternative 5 as it would require that only 10% of the Plan Subarea be set aside for an on-site preserve, which is sufficient to meet the mixed use development objectives established in the Specific Plan.

*Criterion 4: Provides for large, contiguous open space areas that protect environmentally sensitive habitats with adequate buffer zones from adjacent incompatible uses as outlined in the Sacramento County General Plan and SunRidge Specific Plan. A preserve alternative would be considered more viable if it protected a greater, or equal, percentage of vernal pool habitat than that of the Conceptual Strategy alternative.*

This criterion would not be satisfied under Alternative 5. This alternative would only preserve 14.89 acres of wetlands that would lack adequate buffers from the surrounding residential and commercial developments. As seen in Table 4, only 2.2% of the vernal



pool habitat within the preserve would be adequately buffered from the surrounding proposed land use. Approximately 13.87 acres of vernal pool habitat would subsequently be indirectly impacted. This less viable preserve configuration could subsequently contribute to cumulative impacts to vernal pool habitat in the region.

#### Costs

*Criterion 5: Would not result in significant increase in costs per net developable acre as compared to the Specific Plan alternative (Alternative 1)*

This criterion would be satisfied as Alternative 5 does not result in a significant increase in the cost per net developable acre (\$208,520, an increase of 7%). The decrease in developable acreage is not considered significant (108 acres, or 8% relative to the Specific Plan alternative).

#### Summary

Alternative 5 results in greater impacts to the aquatic environment than that of the other alternatives considered in this analysis. This alternative would result in more acres of direct jurisdictional wetland impacts than other alternatives considered, and would result in greater indirect impacts to vernal pool habitat. This preserve configuration results in a relatively high perimeter to area ratio that only effectively protects 2.2% of its preserved vernal pool habitat. This preserve configuration is considered to have poor viability and would thus not effectively minimize cumulative impacts to wetlands and endangered species habitat within the region.

Though Alternative 5 would not be impracticable based on logistics and existing technology, there would be logistic constraints associated with developing the remaining land within the Plan Subarea. The open space preserve alignment would create logistical constraints associated with the layout of infrastructure (roads, sewer, and water lines) within the Plan Subarea. For example, it would be logistically difficult to develop the Douglas 98, Douglas 103, Geisreiter and Pappas project sites due to limited infrastructure access points. Any necessary road and utility alignments would have to pass through the preserve areas resulting in increased cost to avoid and minimize impacts to the preserves.

#### 3.4.7 On-Site Alternative 6

Alternative 6 would result in the creation of 160 acres of open space preserve within four preserve areas containing a total of 22.87 acres of wetlands (Figure 6). This alternative would still protect the tributary to Morrison Creek; however it would consist of two separate preserve areas of 14 and 51 acres and would be restricted to the area along the western boundaries of Douglas 103 and Geisreiter, and would include a vernal pool complex within the northwestern corner of Pappas. It would also protect the tributary to Laguna Creek along the eastern boundaries of Pappas and Geisreiter in a 73-acre preserve area that would include a vernal pool complex within the Douglas 98 site. A 22-acre vernal pool preserve would also be created within the middle of the Sunridge Ranch property.

## Impacts to Waters of the U.S.

*Criterion 1: Results in direct impacts to waters of the U.S. that are less than or equal to that of the Conceptual Strategy alternative.*

This criterion would be satisfied under Alternative 6, as it would result in 4.87 fewer acres of direct wetland impacts than that of the Conceptual Strategy alternative.

*Criterion 2: Minimizes indirect impacts to wetlands within an on-site preserve by providing for a preserve with a low preserve perimeter to area ratio.*

This preserve would have a relatively high preserve perimeter/area ratio of 219 ft/ac. These preserve boundaries are relatively convoluted resulting in more area exposed to potential indirect effects and subsequently contributing to cumulative impacts to wetlands and endangered species habitat within the region.

## Purposes and Objectives

*Criterion 3: Does not result in a significant reduction in the acreage of developable land within the Plan Subarea. A preserve alternative that substantially reduces the developable land within the Plan Subarea would be considered impracticable because it does not meet the overall purpose of the Plan Subarea.*

This criterion would be satisfied under Alternative 6 as it would require that only 12% of the Plan Subarea be set aside for an on-site preserve, which is sufficient to meet the mixed use development objectives established in the Specific Plan.

*Criterion 4: Provides for large, contiguous open space areas that protect environmentally sensitive habitats with adequate buffer zones from adjacent incompatible uses as outlined in the Sacramento County General Plan and SunRidge Specific Plan. A preserve alternative would be considered more viable if it protected a greater, or equal, percentage of vernal pool habitat than that of the Conceptual Strategy alternative.*

This criterion would not be satisfied under Alternative 6. Though this alternative would preserve 22.87 acres of wetlands it lacks adequate buffers from the surrounding residential and commercial developments. As seen in Table 4, only 1.2% of the vernal pool habitat within the preserve would be adequately buffered from the surrounding proposed land use. Approximately 18.85 acres of vernal pool habitat would subsequently be indirectly impacted. This less viable preserve configuration could subsequently contribute to cumulative impacts to vernal pool habitat in the region.

## Costs

*Criterion 5: Would not result in significant increase in costs per net developable acre as compared to the Specific Plan alternative (Alternative 1).*

This criterion would be satisfied as Alternative 6 does not result in a significant increase in the cost per net developable acre (\$212,201, an increase of 9%). The decrease in



developable acreage is not considered significant (134 acres, or 10% relative to the Specific Plan alternative).

### Summary

Though Alternative 6 would result in fewer acres of impacts to jurisdictional wetlands than other alternatives, it would not minimize impacts to aquatic ecosystems as it fails to effectively protect sensitive habitats from surrounding land uses. This alternative would create a preserve area with a high edge to interior ratio that only effectively protects 1.2% of its preserved vernal pool habitat. This would ultimately result in 18.85 acres of indirect impacts to vernal pool habitat. This preserve configuration is considered to have poor viability and thus would not minimize indirect or cumulative impacts to wetlands and endangered species habitat within the region.

Though Alternative 6 would not be impracticable based on logistics and existing technology, there would be logistic constraints associated with developing the remaining land within the Plan Subarea. The open space preserve alignment would create logistical constraints associated with the layout of infrastructure (roads, sewer, and water lines) within the Plan Subarea. For example, it would be logistically difficult to develop the Douglas 98, Douglas 103, Geisreiter and Pappas project sites due to limited infrastructure access points. Any necessary road and utility alignments would have to pass through the preserve areas resulting in increased cost to avoid and minimize impacts to the preserves.

#### 3.4.8 On-Site Alternative 7

Alternative 7 would result in the creation of 165 acres of open space preserve within four preserve area containing a total of 21.14 acres of wetlands (Figure 7). This alternative would protect only the portion of the tributary to Morrison Creek that lies within the Geisreiter property in a 57-acre preserve and would include a vernal pool complex within the northwestern corner of the Pappas site. It would also protect the tributary to Laguna Creek along the eastern boundary of Pappas and Geisreiter in a 67-acre preserve area that would include a vernal pool complex within the Douglas 98 site. Vernal pool preserves would also be created within Douglas 103 and Sunridge Ranch, which would be 13 acres and 28 acres, respectively.

### Impacts to Waters of the U.S.

*Criterion 1: Results in direct impacts to waters of the U.S. that are less than or equal to that of the Conceptual Strategy alternative.*

This criterion would be satisfied under Alternative 7, as it would result in 3.14 fewer acres of direct wetland impacts than that of the Conceptual Strategy alternative.

*Criterion 2: Minimizes indirect impacts to wetlands within an on-site preserve by providing for a preserve with a low preserve perimeter to area ratio.*

This preserve would have a relatively high preserve perimeter/area ratio of 209 ft/ac. These preserve boundaries are relatively convoluted resulting in more area exposed to potential indirect effects and subsequently contributing to cumulative impacts to wetlands and endangered species habitat within the region.

### **Purposes and Objectives**

*Criterion 3: Does not result in a significant reduction in the acreage of developable land within the Plan Subarea. A preserve alternative that substantially reduces the developable land within the Plan Subarea would be considered impracticable because it does not meet the overall purpose of the Plan Subarea.*

This criterion would be satisfied under Alternative 7 as it would require that only 12% of the Plan Subarea be set aside for an on-site preserve, which is sufficient to meet the mixed use development objectives established in the Specific Plan.

*Criterion 4: Provides for large, contiguous open space areas that protect environmentally sensitive habitats with adequate buffer zones from adjacent incompatible uses as outlined in the Sacramento County General Plan and SunRidge Specific Plan. A preserve alternative would be considered more viable if it protected a greater, or equal, percentage of vernal pool habitat than that of the Conceptual Strategy alternative.*

This criterion would be not satisfied under Alternative 7. Though this alternative would preserve 21.14 acres of wetlands it lacks adequate buffers from the surrounding residential and commercial developments. As seen in Table 4, only 1.3% of the vernal pool habitat within the preserve would be adequately buffered from the surrounding proposed land use. Approximately 20.48 acres of vernal pool habitat would subsequently be indirectly impacted. This less viable preserve configuration could subsequently contribute to cumulative impacts to vernal pool habitat in the region.

### **Costs**

*Criterion 5: Would not result in significant increase in costs per net developable acre as compared to the Specific Plan alternative (Alternative 1).*

This criterion would be satisfied as Alternative 7 does not result in a significant increase in the cost per net developable acre (\$215,391, an increase of 11%). The decrease in developable acreage is not considered significant (139 acres, or 10% relative to the Specific Plan alternative).

### **Summary**

Though Alternative 7 would result in fewer acres of impacts to jurisdictional wetlands, it does not minimize impacts to aquatic ecosystems as it does not effectively protect sensitive habitats from surrounding land uses. This alternative would create a preserve area with a relatively high edge to interior ratio that only effectively protects 1.3% of its preserved vernal pool habitat. This would ultimately result in 20.48 acres of indirect



impacts to vernal pool habitat. This preserve configuration is considered to have poor viability and would thus not effectively minimize cumulative impacts to wetlands and endangered species habitat within the region.

Though Alternative 7 would not be impracticable based on logistics and existing technology, there would be logistic constraints associated with developing the remaining land within the Plan Subarea. The open space preserve alignment would create logistical constraints associated with the layout of infrastructure (roads, sewer, and water lines) within the Plan Subarea. For example, it would be logistically difficult to develop the Douglas 98, Douglas 103, Geisreiter and Pappas project sites due to limited infrastructure access points. Any necessary road and utility alignments would have to pass through the preserve areas resulting in increased cost to avoid and minimize impacts to the preserves.

#### **3.4.9 On-Site Alternative 8**

Alternative 8 would result in the creation of 181 acres of open space preserve within four preserve areas containing a total of 23.02 acres of wetlands (Figure 8). This alternative would protect two separate segments of the tributary to Morrison Creek, a portion within the Douglas 103 project site and a portion within the Geisreiter project site, 14' and 48 acres, respectively. The larger preserve area would also include a vernal pool complex within the northwestern corner of the Pappas site and in the southwest corner of the Douglas 103 site. This alternative would also include a preserve that protects the tributary to Laguna Creek along the eastern boundary of Pappas and Geisreiter in a 69-acre preserve area that would include a small vernal pool complex within Douglas 98. This alternative would also include a 50-acre vernal pool preserve within the middle of the Sunridge Ranch property.

#### **Impacts to Waters of the U.S.**

*Criterion 1: Results in direct impacts to waters of the U.S. that are less than or equal to that of the Conceptual Strategy alternative.*

This criterion would be satisfied under Alternative 8, as it would result in 5.02 fewer acres of direct wetland impacts than that of the Conceptual Strategy alternative.

*Criterion 2: Minimizes indirect impacts to wetlands within an on-site preserve by providing for a preserve with a low preserve perimeter to area ratio.*

This preserve would have a preserve perimeter/area ratio of 190 ft/ac. These preserve boundaries are relatively convoluted resulting in more area exposed to potential indirect effects and subsequently contributing to cumulative impacts to wetlands and endangered species habitat within the region.

#### **Purposes and Objectives**

*Criterion 3: Does not result in a significant reduction in the acreage of developable land within the Plan Subarea. A preserve alternative that substantially reduces the*

*developable land within the Plan Subarea would be considered impracticable because it does not meet the overall purpose of the Plan Subarea.*

This criterion would be satisfied under Alternative 8 as it would require that only 13% of the Plan Subarea be set aside for an on-site preserve, which is sufficient to meet the mixed use development objectives established in the Specific Plan.

*Criterion 4: Provides for large, contiguous open space areas that protect environmentally sensitive habitats with adequate buffer zones from adjacent incompatible uses as outlined in the Sacramento County General Plan and SunRidge Specific Plan. A preserve alternative would be considered more viable if it protected a greater, or equal, percentage of vernal pool habitat than that of the Conceptual Strategy alternative.*

This criterion would not be satisfied under Alternative 8. Though this alternative would preserve 23.02 acres of wetlands it lacks adequate buffers from the surrounding residential and commercial developments. As seen in Table 4, only 7.4% of the vernal pool habitat within the preserve would be adequately buffered from the surrounding proposed land use. Approximately 17.79 acres of vernal pool habitat would subsequently be indirectly impacted. This less viable preserve configuration could subsequently contribute to cumulative impacts to vernal pool habitat in the region.

#### Costs

*Criterion 5: Would not result in significant increase in costs per net developable acre as compared to the Specific Plan alternative (Alternative 1).*

This criterion would be satisfied as Alternative 8 does not result in a significant increase in the cost per net developable acre (\$215,391, an increase of 11%). The decrease in developable acreage is not considered significant (155 acres, or 11% relative to the Specific Plan alternative).

#### Summary

Though Alternative 8 would result in fewer acres of impacts to jurisdictional waters than other alternatives considered, it does not minimize impacts to aquatic ecosystems as it ultimately fails to effectively protect sensitive habitats from surrounding land uses. This alternative would create a preserve area with a relatively high edge to interior ratio that only effectively protects 7.4% of its preserved vernal pool habitat. This would ultimately result in 17.79 acres of indirect impacts to vernal pool habitat. This preserve configuration is considered to have poor viability and would thus not effectively minimize cumulative impacts to wetlands and endangered species habitat within the region.

Though Alternative 8 would not be impracticable based on logistics and existing technology, there would be logistic constraints associated with developing the remaining land within the Plan Subarea. The open space preserve alignment would create logistical constraints associated with the layout of infrastructure (roads, sewer, and water lines)



within the Plan Subarea. For example, it would be logistically difficult to develop the Douglas 98, Douglas 103, Geisreiter and Pappas project sites due to limited infrastructure access points. Any necessary road and utility alignments would have to pass through the preserve areas resulting in increased cost to avoid and minimize impacts to the preserves.

#### **3.4.10 On-Site Alternative 9 (Conceptual Strategy Alternative)**

Alternative 9 would result in the creation of 211 acres of open space preserve within two preserves containing a total of 18.00 acres of wetlands (Figure 9). The bulk of open space preserve area would be concentrated within one large corridor. This preserve would encompass the headwaters of the unnamed tributary to Morrison Creek that would also protect vernal pool complexes within the Douglas 103, Geisreiter, and Pappas properties, as well as portions of the Sunridge Park property in a 161-acre preserve area. An additional 50-acre vernal pool preserve would be created within the middle of the Sunridge Ranch property.

#### **Impacts to Waters of the U.S.**

*Criterion 1: Results in direct impacts to waters of the U.S. that are less than or equal to that of the Conceptual Strategy alternative.*

This criterion would be satisfied under Alternative 9.

*Criterion 2: Minimizes indirect impacts to wetlands within an on-site preserve by providing for a preserve with a low preserve perimeter to area ratio.*

This preserve would have a relatively low preserve perimeter/area ratio of 100 ft/ac. This preserve configuration would better protect preserve wetlands from potential indirect impacts from the adjacent development and minimize the cumulative effects to wetlands and vernal species habitat within the region.

#### **Purposes and Objectives**

*Criterion 3: Does not result in a significant reduction in the acreage of developable land within the Plan Subarea. A preserve alternative that substantially reduces the developable land within the Plan Subarea would be considered impracticable because it does not meet the overall purpose of the Plan Subarea.*

This criterion would be satisfied under Alternative 9 as it would require that 15% of the Plan Subarea be set aside for an on-site preserve, which is sufficient to meet the mixed use development objectives established in the Specific Plan.

*Criterion 4: Provides for large, contiguous open space areas that protect environmentally sensitive habitats with adequate buffer zones from adjacent incompatible uses as outlined in the Sacramento County General Plan and SunRidge Specific Plan. A preserve alternative would be considered more viable if it protected a greater, or equal, percentage of vernal pool habitat than that of the Conceptual Strategy alternative.*

This criterion would be satisfied under Alternative 9. This alternative would preserve 18.00 acres of wetlands with adequate buffers from the surrounding residential and commercial developments. As seen in Table 4, approximately 41% of the vernal pool habitat within the preserve would be adequately buffered from the surrounding proposed land use. Indirect impacts would be limited to 10.52 acres, which is less than all but one of the other alternatives. This preserve configuration better protects sensitive vernal pool habitat, while still effectively protecting one of the two drainage corridors.

### Costs

*Criterion 5: Would not result in significant increase in costs per net developable acre.*

This criterion would be satisfied as Alternative 9 does not result in a significant increase in the cost per net developable acre (\$220,056, an increase of 13%). The decrease in developable acreage is not considered significant (185 acres, or 13% relative to the Specific Plan alternative).

### Summary

Development according to Alternative 9 would minimize impacts to aquatic ecosystems by creating a preserve configuration that is of a size large enough to meet the long term goals of the Conceptual Strategy. The preserve area in Alternative 9 would be relatively buffered from the surrounding development while still providing for feasible project development. This preserve alternative protects 211 acres of open space containing 18.00 acres of wetlands, 17.32 acres of which are considered potential habitat for sensitive vernal pool species. As discussed above, 41% of this habitat would be effectively buffered from the surrounding land use. The preserve configuration better minimizes potential cumulative impacts to wetlands and endangered species habitat within the region by providing for a viable and feasible preserve within the Plan Subarea. As described previously, this alternative would result in no net loss of acreage and functions and values of wetlands and other aquatic resources. Mitigation would compensate for unavoidable impacts and overall adverse direct, indirect, and cumulative impacts would not be significant.

In addition, logistical and technological constraints are minimized in Alternative 9 as only one road crossing over the preserve areas is necessary to maintain efficient circulation patterns throughout the Plan Subarea. This yields lower project costs while maintaining net developable acreage, thus meeting the cost criterion of not significantly increasing costs per net developable acre.



#### 4.0 CONCLUSION

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The alternatives were evaluated to determine whether they were practicable after taking into consideration cost, existing technology, and logistics in light of the overall purpose, and whether they would minimize direct, indirect, and cumulative impact to acceptable levels.

Table 5 below outlines the practicability of all ten on-site alternatives assessed in this report.

Table 6 — Summary of On-Site Alternatives Analysis

Alternative	Impacts to Aquatic Ecosystems					Practicability			Project Purpose	
	Criterion 1: Direct Impacts to Waters of the U.S. (ac)	Criterion 2: Preserve Perimeter Area (ft/ac)	Criterion 3: Percentage of Plan Subarea Preserved	Criterion 4: Percentage of Vernal Pool Habitat Protected	Does the Alternative Minimize Impacts to Aquatic Resources Pursuant to the Tenets of the Conceptual Strategy	Logistics Is the alternative capable of being done taking into consideration existing logistics?	Existing Technology Is the alternative capable of being done taking into consideration existing technology?	Costs Would the Alternative Result in a Significant Increase in Costs per Net Developable Acre Due to Loss of Acreage?	Does the the Alternative Retain a Substantial Amount of the Area Planned for Development Compared to the Specific Plan	Does the Alternative Provide Sufficient Acreage to Maintain a Preserve Area that Meets the Requirements of the Conceptual Strategy
No Development	0	NA	0%	0%	Yes.	Yes	Yes	No	No	No, open spaces will not be protected
1 (Specific Plan)	59.89	344	2%	0%	No, insufficient preserve area to achieve goals of Conceptual Strategy	Yes	Yes	No	Yes	No
2	32.71	75	30%	41.4%	Yes, adequate acreage to achieve goals of Conceptual Strategy for preserve area	Yes	Yes	Yes, would result in increased project costs and reduces net developable acreage to absorb costs	No	Yes
3	37.66	150	18%	11.5%	No, inadequate edge to area ratio to achieve goals of Conceptual Strategy	Yes	Yes	No	Yes	No, indirect edge effects will reduce the effective size of the Preserve Area
4	53.61	204	6%	2.1%	No, inadequate edge to area ratio to achieve goals of Conceptual Strategy	Yes	Yes	No	Yes	No, indirect edge effects will reduce the effective size of the Preserve Area

Alternative	Impacts to Aquatic Ecosystems					Practicability			Project Purpose	
	Criterion 1: Direct Impacts to Waters of the U.S. (ac)	Criterion 2: Preserve Perimeter/ Area (ft/ac)	Criterion 3: Percentage of Plan Subarea Preserved	Criterion 4: Percentage of Vernal Pool Habitat Protected	Does the Alternative Minimize Impacts to Aquatic Resources Pursuant to the Tenets of the Conceptual Strategy	Logistics Is the alternative capable of being done taking into consideration logistics?	Existing Technology Is the alternative capable of being done taking into consideration existing technology?	Costs Would the Alternative Result in a Significant Increase in Costs per Net Developable Acre Due to Loss of Acreage?	Does the Alternative Retain a Substantial Amount of the Area Planned for Development Compared to the Specific Plan	Does the Alternative Provide Sufficient Acreage to Maintain a Preserve Area that Meets the Requirements of the Conceptual Strategy
5	47 .31	226	10%	2.2%	No, inadequate edge to area ratio to achieve goals of Conceptual Strategy	Yes	Yes	No	Yes	No, indirect edge effects will reduce the effective size of the Preserve Area
6	39.33	219	12%	1.2%	No, inadequate edge to area ratio to achieve goals of Conceptual Strategy	Yes	Yes	No	Yes	No, indirect edge effects will reduce the effective size of the Preserve Area
7	41.06	209	12%	1.3%	No, inadequate edge to area ratio to achieve goals of Conceptual Strategy	Yes	Yes	No	Yes	No, indirect edge effects will reduce the effective size of the Preserve Area
8	39.18	190	13%	7.4%	No, inadequate edge to area ratio to achieve goals of Conceptual Strategy	Yes	Yes	No	Yes	No, indirect edge effects will reduce the effective size of the Preserve Area
9 (Conceptual Strategy)	44.20	100	15%	41.2%	Yes, minimizes edge effects and provides sufficient acreage to achieve goals of Conservation Strategy	Yes	Yes	No	Yes	Yes, edge effects are limited and Preserve Area is of Sufficient Acreage



Factors considered in this analysis included direct, indirect, and cumulative impacts to wetlands and endangered species habitat, purpose and objectives, and costs. According to this analysis, as summarized above, Alternative 9 (Conceptual Strategy alternative) is considered the preferred on-site alternative. The Conceptual Strategy alternative protects 211 acres of open space containing 18.00 acres of wetlands and effectively preserves 41% of the vernal pool habitat within this preserve.

Though Alternative 2 has less impacts to wetlands and has a better preserve to perimeter ratio than the Conceptual Strategy alternative, it results in an undue burden on individual property owners. This alternative would require that 30% of the Plan Subarea be designated for the establishment of an on-site preserve. This significant reduction in developable land within the Plan Subarea is considered to be impracticable in light of the overall purpose and objectives of the Specific Plan. In addition, the project costs per net developable acreage would be significantly high and unreasonable.

Though Alternative 3 also has fewer impacts to wetlands than that of the Conceptual Strategy alternative, it results in the creation of a less viable preserve. This preserve configuration would only effectively protect 11.5% of the preserve's vernal pool habitat. This configuration provides less assurance that this preserve combined with the off-site mitigation could effectively avoid cumulative impacts to wetlands and endangered species habitat within the region.

Though Preserve Alternatives 6, 7, and 8 all result in less impacts than that of the Conceptual Strategy alternative, they do not effectively protect the vernal pool habitat within their respective preserves. As discussed in Section 3, the reason these preserve configurations are less effective is that they are relatively narrow with high perimeter to area ratios that would result in 18.85, 20.48, and 17.79 acres of indirect impacts to vernal pool habitat within their respective preserves. Subsequently only 1.2, 1.3, and 7.4% of the total vernal pool habitat within their respective preserves would be actually protected. These configurations provide less assurance that these preserves combined with the off-site mitigation could effectively avoid cumulative impacts to wetlands and endangered species habitat within the region.

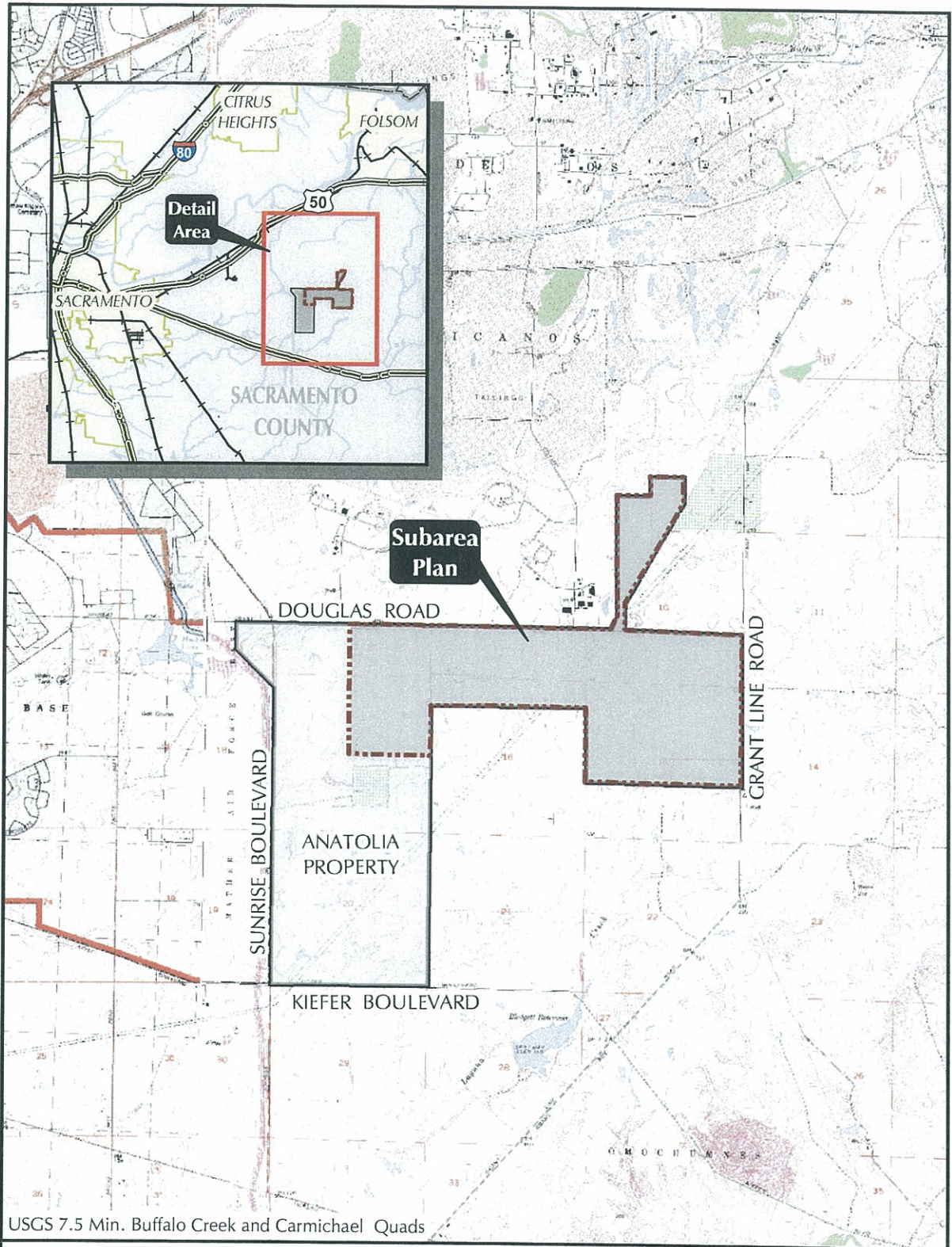
The purpose of this analysis is to determine if the various on-site alternatives are available and capable of being done after taking into consideration direct, indirect, and cumulative impacts to wetlands and endangered species habitat, Plan Subarea purpose and objectives, and costs. Based on this analysis there are no practicable on-site alternatives that will meet the objectives other than the preserve configuration as proposed.




## 5.0 REFERENCES

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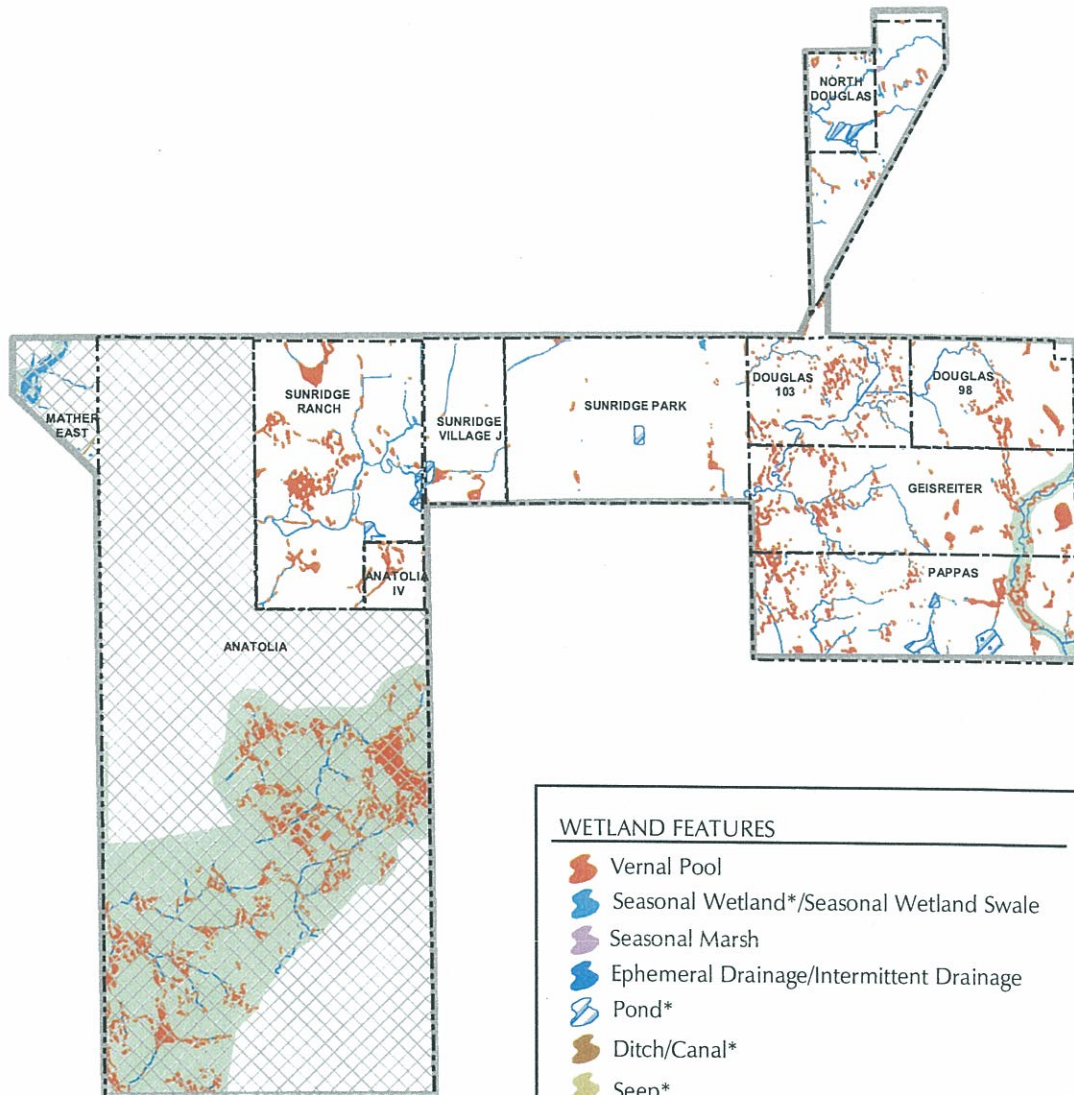




<b>SITE AND VICINITY</b>			
 <b>FOOTHILL ASSOCIATES</b> <small>ENVIRONMENTAL CONSULTING • PLANNING LANDSCAPE ARCHITECTURE © 2004</small>		 <b>SCALE IN FEET</b>	Drawn By: SWD Date: 07/29/04
			<b>FIGURE 1</b>



PRESERVE AREA FOR UNPERMITTED PROPERTIES IS ~26 ACRES



#### WETLAND FEATURES

- Vernal Pool
- Seasonal Wetland\*/Seasonal Wetland Swale
- Seasonal Marsh
- Ephemeral Drainage/Intermittent Drainage
- Pond\*
- Ditch/Canal\*
- Seep\*

\*Some features shown on map in this class are non-jurisdictional.

#### OTHER FEATURES

- Preserve Area
- SunRidge Specific Plan Area
- Permitted (Not Included in Preserve Acreage)

Sources:  
Wetland Data- Foothill Associates & ECORP, Inc.  
Base Data- Wood Rodgers, Inc.

### ALTERNATIVE I

**FOOTHILL ASSOCIATES**  
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LANDSCAPE ARCHITECTURE



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Scale in Feet

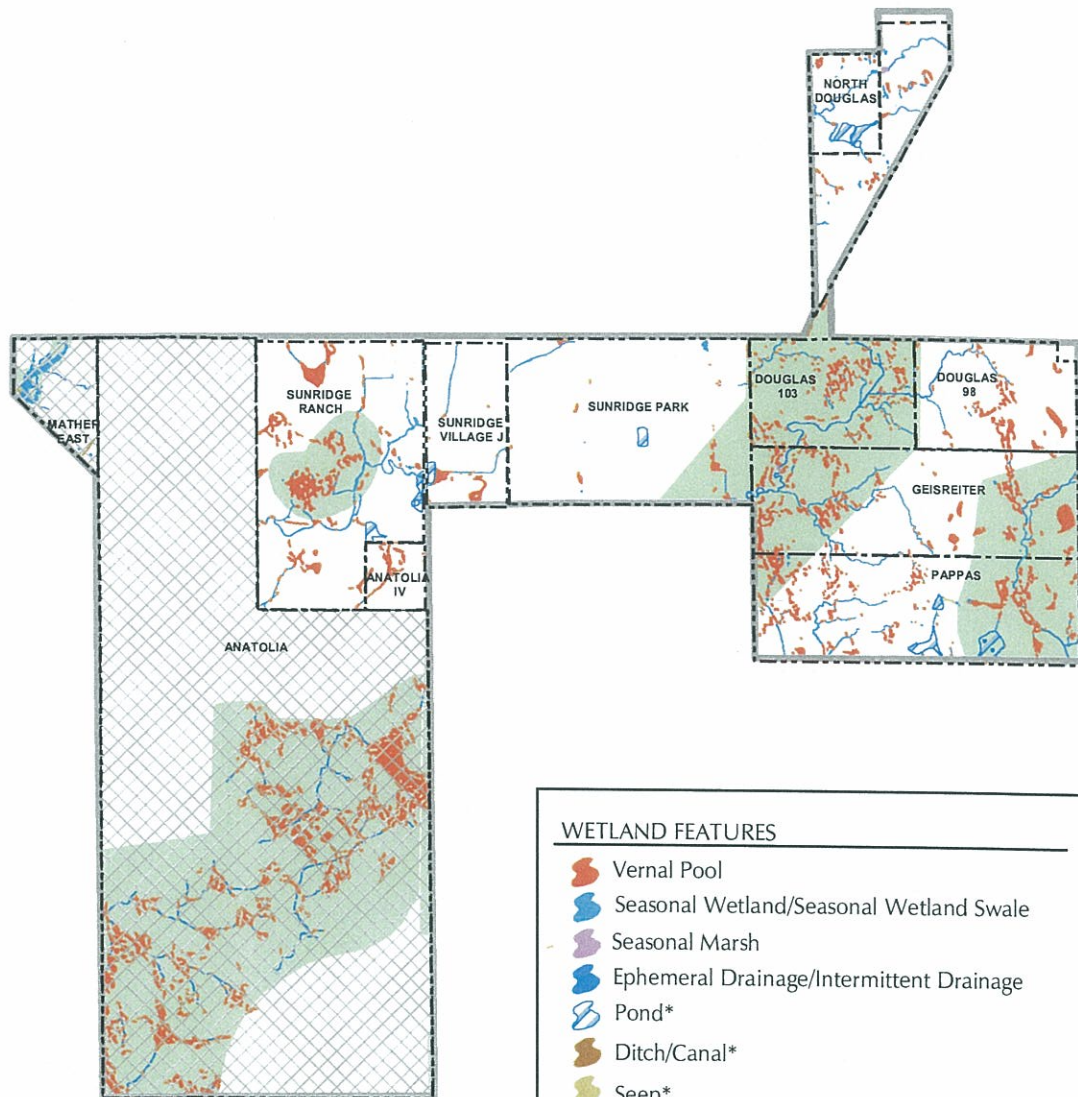
Drawn By: SWD  
Date: 10/12/04

**FIGURE 3**

SUNRIDGE SPECIFIC PLAN SUBAREA

alt1\_new.MXD  
© 2004

PRESERVE AREA FOR UNPERMITTED PROPERTIES IS ~405 ACRES



#### WETLAND FEATURES

- Vernal Pool
- Seasonal Wetland/Seasonal Wetland Swale
- Seasonal Marsh
- Ephemeral Drainage/Intermittent Drainage
- Pond\*
- Ditch/Canal\*
- Seep\*

\*Some features shown on map in this class are non-jurisdictional.

#### OTHER FEATURES

- Preserve Area
- SunRidge Specific Plan Area
- Permitted (Not Included in Preserve Acreage)

Sources:  
Wetland Data- Foothill Associates & ECorp, Inc.  
Base Data- Wood Rodgers, Inc.

### ALTERNATIVE 2

**FOOTHILL ASSOCIATES**  
ENVIRONMENTAL CONSULTING • PLANNING  
LANDSCAPE ARCHITECTURE



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Scale in Feet

Drawn By: SWD  
Date: 10/12/04

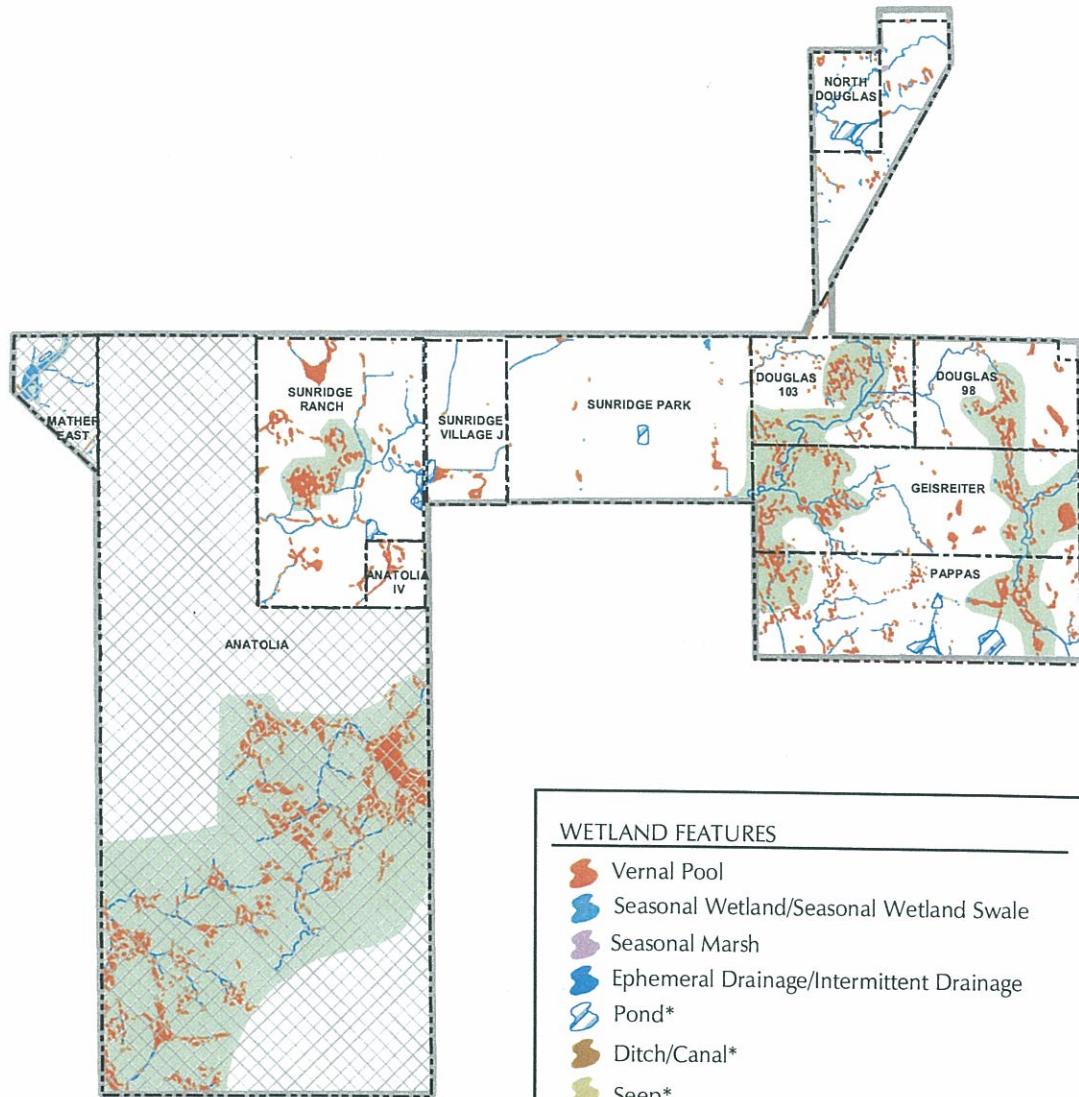
**FIGURE 4**

SUNRIDGE SPECIFIC PLAN SUBAREA

ALTERNATIVE2\_OLD1.MXD  
© 2004



PRESERVE AREA FOR UNPERMITTED PROPERTIES is ~ 239 ACRES



#### WETLAND FEATURES

- Vernal Pool
- Seasonal Wetland/Seasonal Wetland Swale
- Seasonal Marsh
- Ephemeral Drainage/Intermittent Drainage
- Pond\*
- Ditch/Canal\*
- Seep\*

\*Some features shown on map in this class are non-jurisdictional.

#### OTHER FEATURES

- Preserve Area
- SunRidge Specific Plan Area
- Permitted (Not Included in Preserve Acreage)

Sources:  
Wetland Data- Foothill Associates & ECORP, Inc.  
Base Data- Wood Rodgers, Inc.

### ALTERNATIVE 3

**FOOTHILL ASSOCIATES**  
ENVIRONMENTAL CONSULTING • PLANNING  
LANDSCAPE ARCHITECTURE



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Scale in Feet

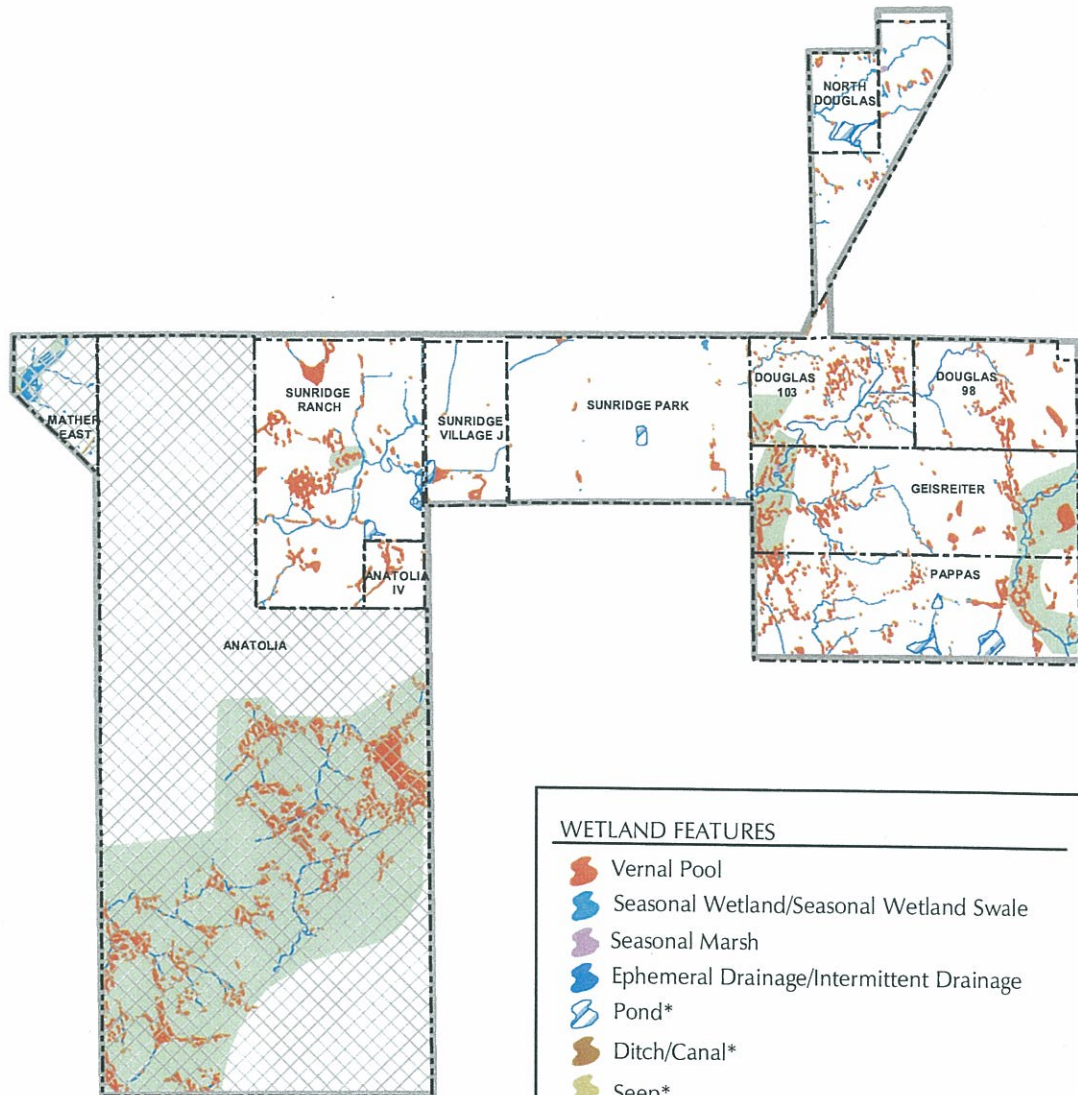
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Date: 10/12/04

**FIGURE 5**

SUNRIDGE SPECIFIC PLAN SUBAREA

ALTERNATIVE3\_old2.MXD  
© 2004

PRESERVE AREA FOR UNPERMITTED PROPERTIES IS ~87 ACRES



Sources:  
Wetland Data- Foothill Associates & ECORP, Inc.  
Base Data- Wood Rodgers, Inc.

#### ALTERNATIVE 4

**FOOTHILL ASSOCIATES**  
ENVIRONMENTAL CONSULTING • PLANNING  
LANDSCAPE ARCHITECTURE



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Scale in Feet

Drawn By: SWD  
Date: 10/12/04

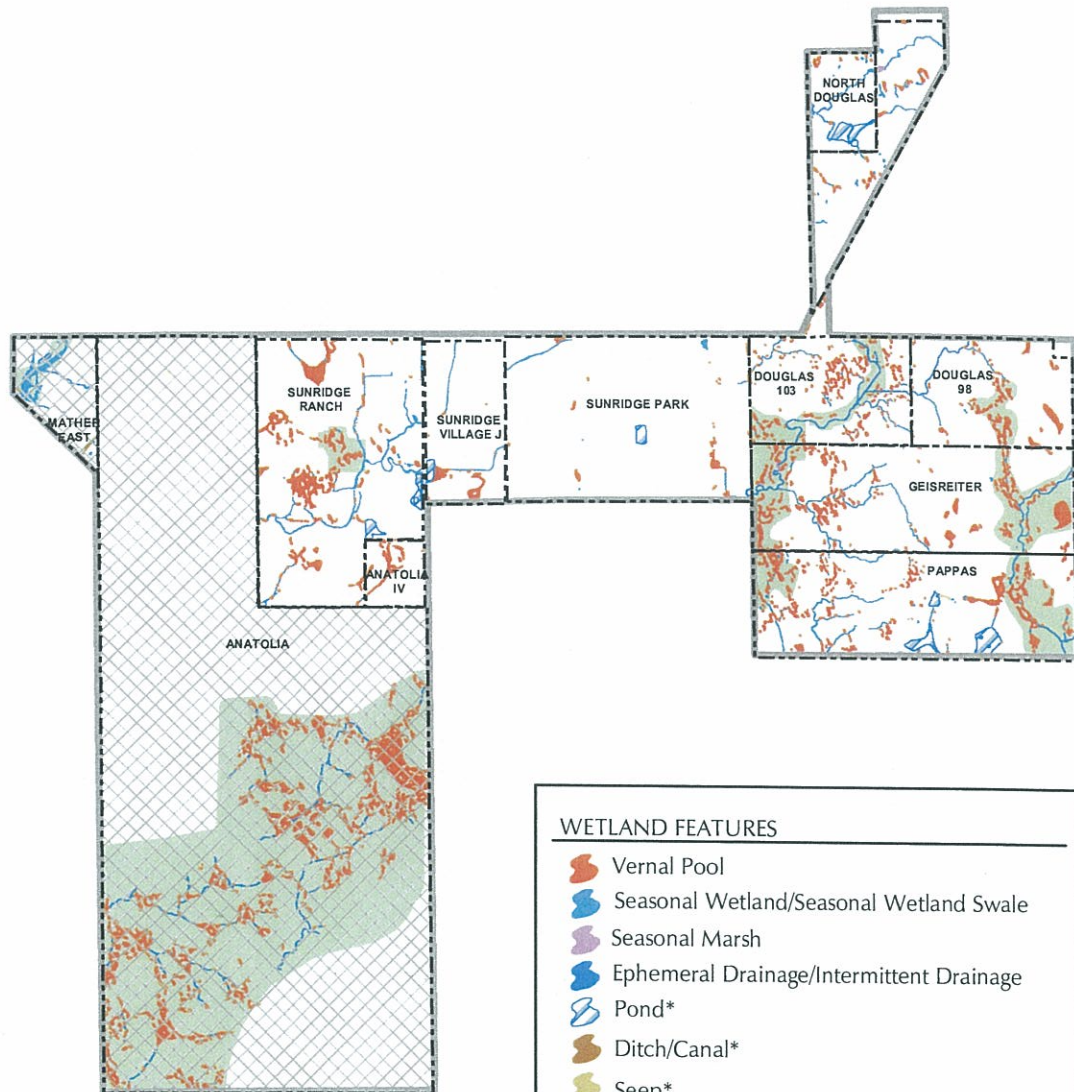
**FIGURE 6**

SUNRIDGE SPECIFIC PLAN SUBAREA

ALTERNATIVE4\_old3.MXD  
© 2004



PRESERVE AREA FOR UNPERMITTED PROPERTIES IS ~134 ACRES



Sources:  
Wetland Data- Foothill Associates  
Base Data- Wood Rodgers, Inc.

## ALTERNATIVE 5



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Scale in Feet

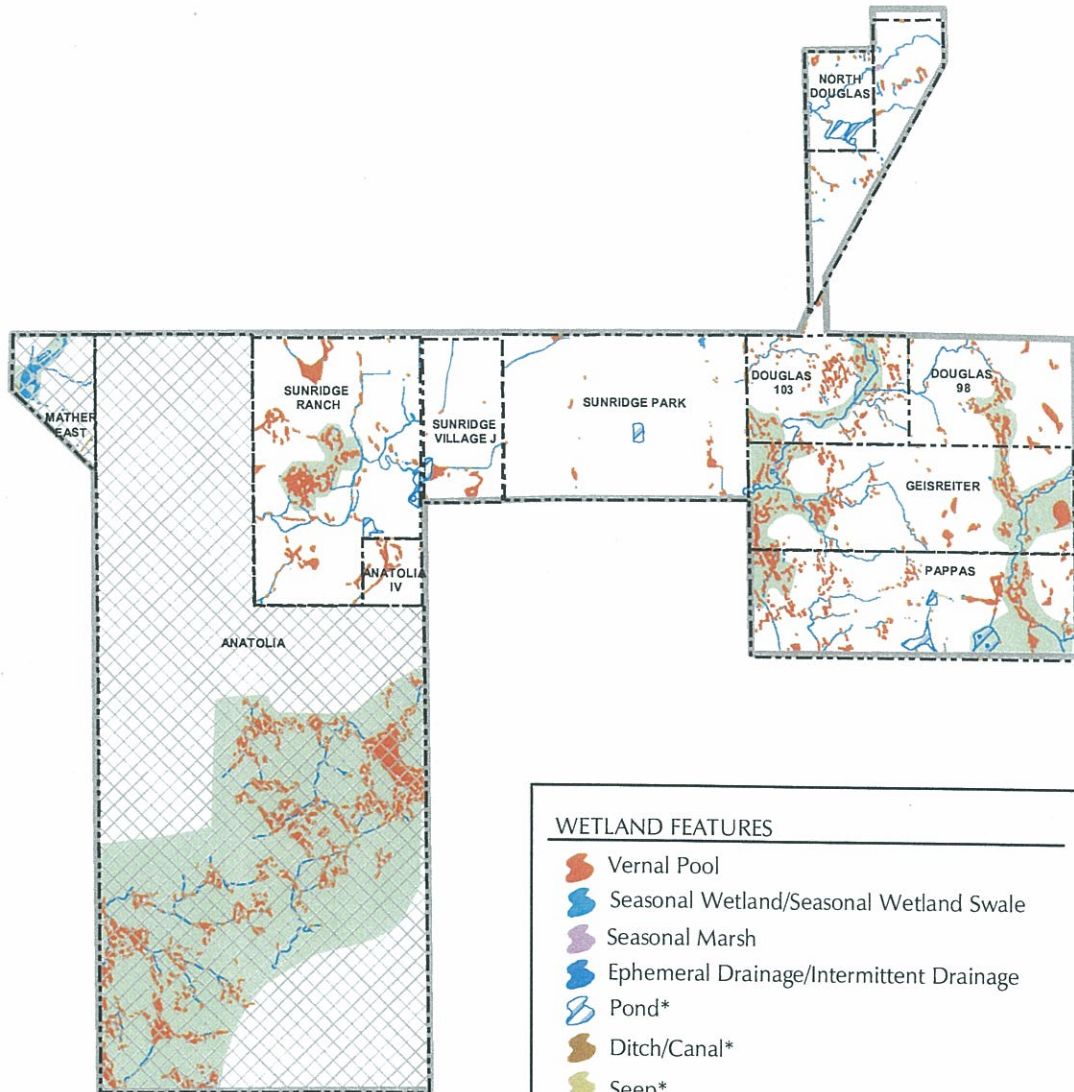
Drawn By: SWD  
Date: 10/12/04

**FIGURE 7**

SUNRIDGE SPECIFIC PLAN SUBAREA

ALTERNATIVE5\_old4.MXD  
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PRESERVE AREA FOR UNPERMITTED PROPERTIES IS ~160 ACRES



#### WETLAND FEATURES

- Vernal Pool
- Seasonal Wetland/Seasonal Wetland Swale
- Seasonal Marsh
- Ephemeral Drainage/Intermittent Drainage
- Pond\*
- Ditch/Canal\*
- Seep\*

\*Some features shown on map in this class are non-jurisdictional.

#### OTHER FEATURES

- Preserve Area
- SunRidge Specific Plan Area
- Permitted (Not Included in Preserve Acreage)

Sources:  
Wetland Data- Foothill Associates & ECORP, Inc.  
Base Data- Wood Rodgers, Inc.

### ALTERNATIVE 6

**FOOTHILL ASSOCIATES**  
ENVIRONMENTAL CONSULTING • PLANNING  
LANDSCAPE ARCHITECTURE



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Scale in Feet

Drawn By: SWD  
Date: 10/12/04

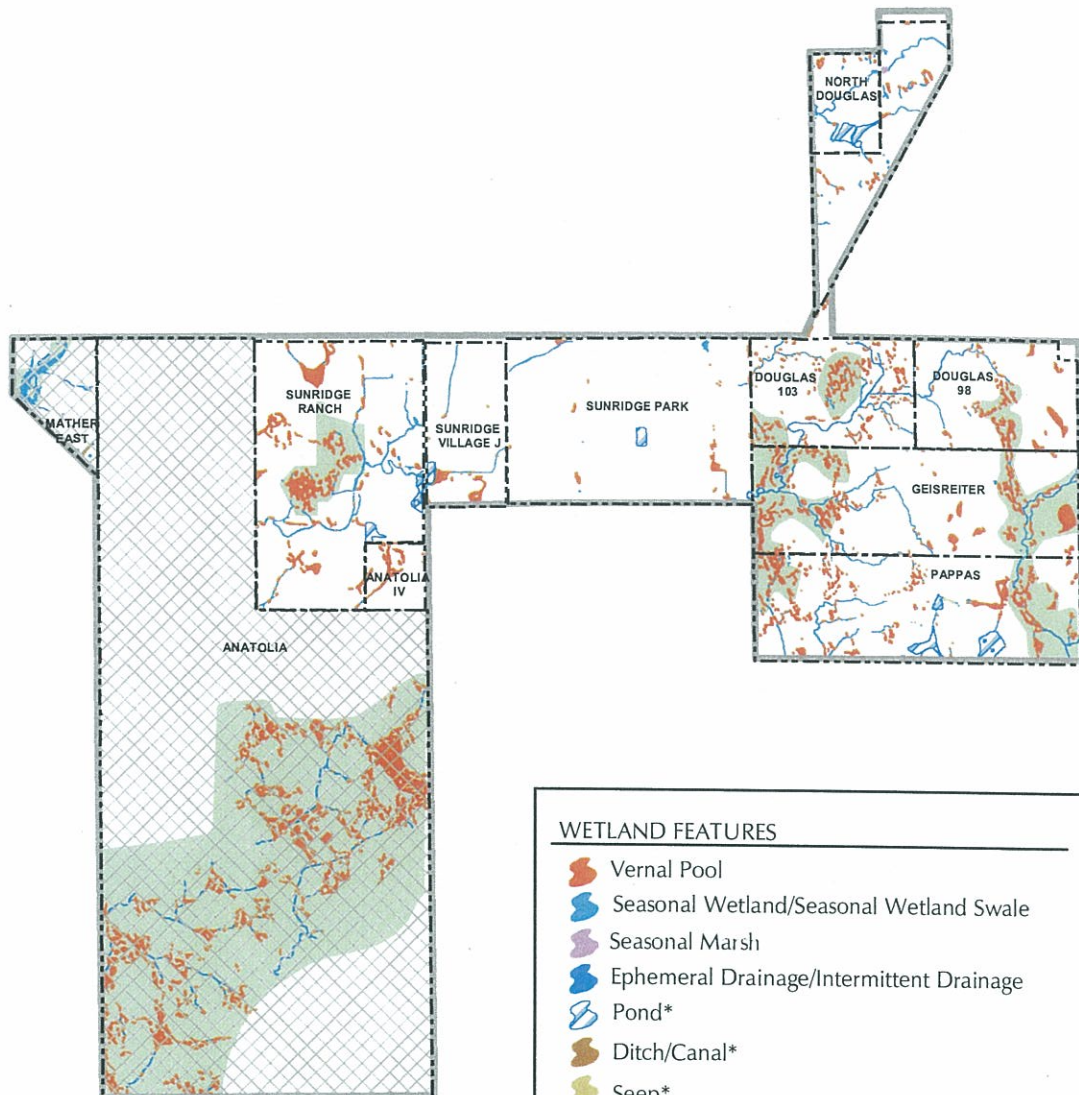
**FIGURE 8**

SUNRIDGE SPECIFIC PLAN SUBAREA

ALTERNATIVE6\_old5.MXD  
© 2004



PRESERVE AREA FOR UNPERMITTED PROPERTIES IS ~165 ACRES



#### WETLAND FEATURES

- Vernal Pool
- Seasonal Wetland/Seasonal Wetland Swale
- Seasonal Marsh
- Ephemeral Drainage/Intermittent Drainage
- Pond\*
- Ditch/Canal\*
- Seep\*

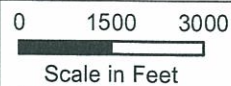
\*Some features shown on map in this class are non-jurisdictional.

#### OTHER FEATURES

- Preserve Area
- SunRidge Specific Plan Area
- Permitted (Not Included in Preserve Acreage)

Sources:  
Wetland Data- Foothill Associates & ECORP, Inc.  
Base Data- Wood Rodgers, Inc.

### ALTERNATIVE 7



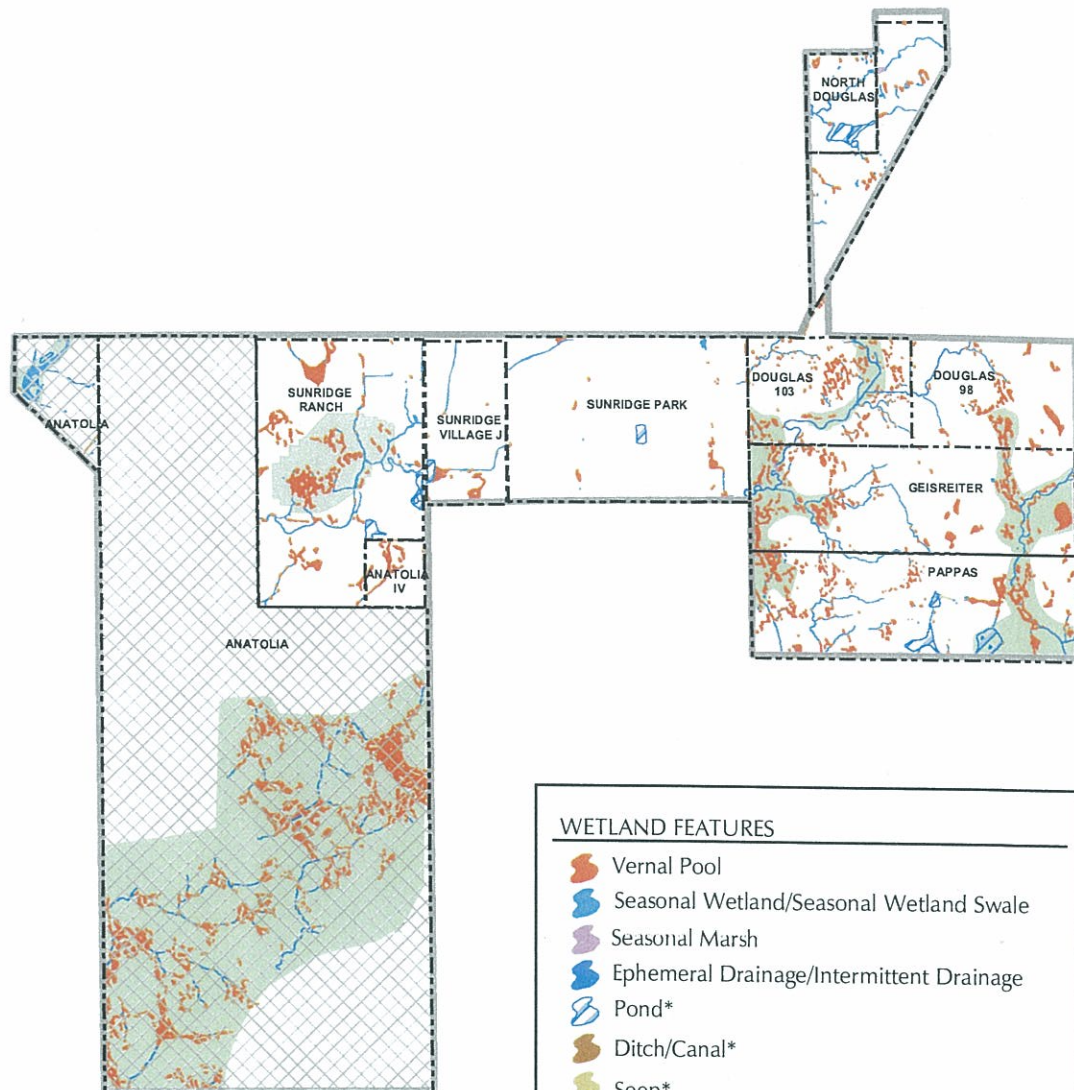
Drawn By: SWD  
Date: 10/12/04

**FIGURE 9**

SUNRIDGE SPECIFIC PLAN SUBAREA

ALTERNATIVE\_6.MXD  
© 2004

PRESERVE AREA FOR UNPERMITTED PROPERTIES IS ~181 ACRES



Sources:  
Wetland Data- Foothill Associates & ECORP, Inc.  
Base Data- Wood Rodgers, Inc.

## ALTERNATIVE 8

**FOOTHILL ASSOCIATES**  
ENVIRONMENTAL CONSULTING • PLANNING  
LANDSCAPE ARCHITECTURE



0 1500 3000  
Scale in Feet

Drawn By: SWD  
Date: 10/12/04

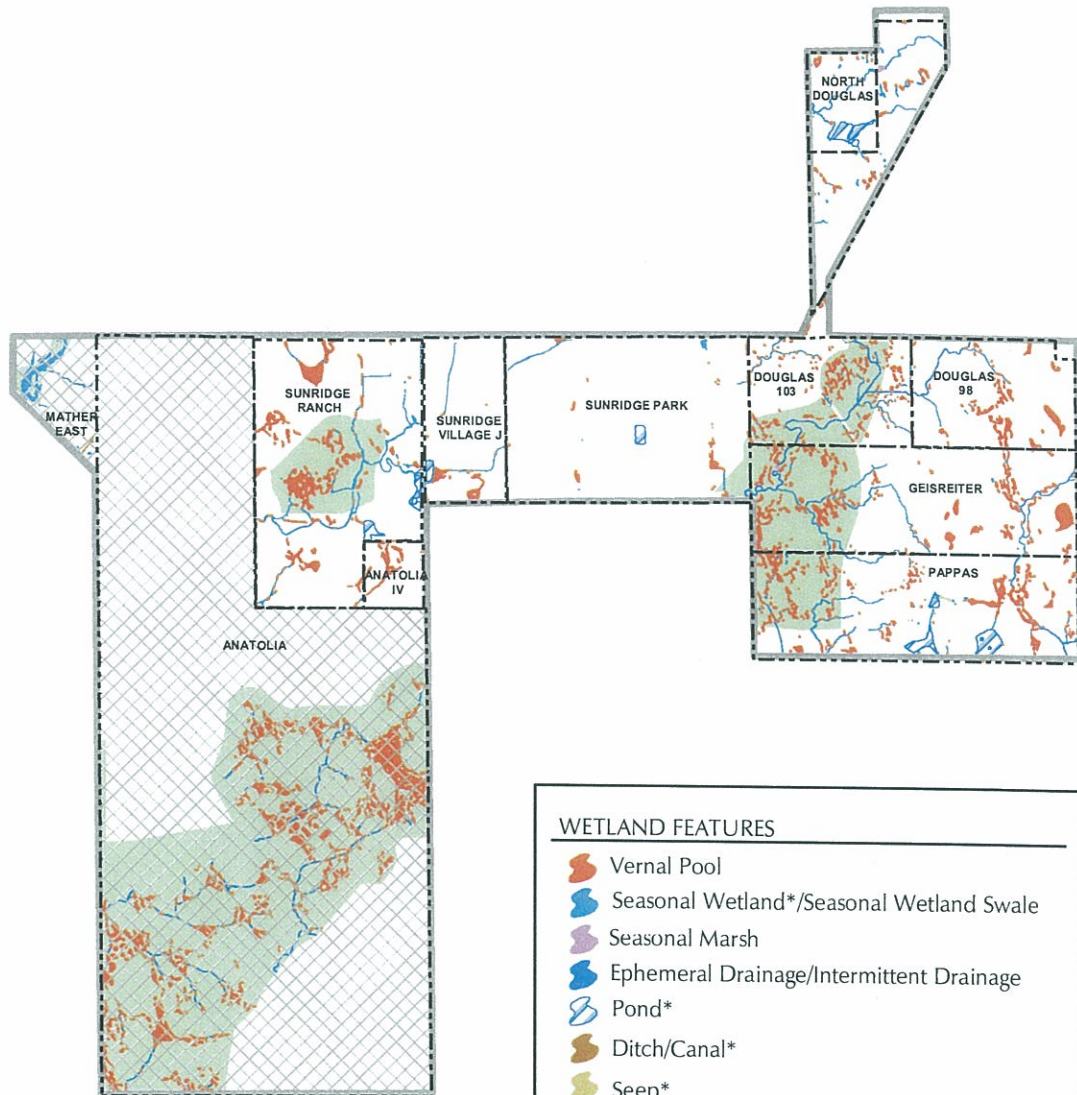
**FIGURE 10**

SUNRIDGE SPECIFIC PLAN SUBAREA

ALTERNATIVE8\_old7.MXD  
© 2004



PRESERVE AREA FOR UNPERMITTED PROPERTIES IS ~211 ACRES



Sources:  
Wetland Data- Foothill Associates & ECORP, Inc.  
Base Data- Wood Rodgers, Inc.

## ALTERNATIVE 9

**FOOTHILL ASSOCIATES**  
ENVIRONMENTAL CONSULTING • PLANNING  
LANDSCAPE ARCHITECTURE



0 1500 3000  
Scale in Feet

Drawn By: SWD  
Date: 10/08/04

**FIGURE 11**

SUNRIDGE SPECIFIC PLAN SUBAREA

ALTERNATIVE9\_old8.MXD  
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**Appendix A — Conceptual – Level Strategy for  
Avoiding Minimizing, and Preseving On-Site Aquatic  
Resource Habitat in the Sunrise-Douglas Community  
Plan Area**

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**(ATTACHMENT 1)**  
**A Conceptual-Level Strategy for**  
**Avoiding, Minimizing, & Preserving On-Site Aquatic Resource Habitat**  
**in the Sunrise-Douglas Community Plan Area**

July 2004

In March through May 2004, representatives of the US Fish and Wildlife Service, US Environmental Protection Agency, and the US Army Corps Engineers (Agencies) met to formulate a conceptual-level strategy for avoiding, minimizing, and preserving aquatic resource habitat in the Sunrise-Douglas Community Plan Area (SDCPA). The intended result of this effort was to achieve reasonable protection and conservation of federally threatened and endangered species consistent with the Corps' obligations under Section 7(a)(2) of the Endangered Species Act, while taking a regional approach to avoidance and minimization of impacts to waters of the US, including wetlands, in accordance with Section 404 (b)(1) guidelines under the Clean Water Act. The strategy also endeavors to ensure a viable South Sacramento County Habitat Conservation Plan (HCP) can be developed, given that a large proportion of vernal pool habitat under consideration by the HCP planners is within the SDCPA.

The conceptual-level strategy is represented by preserve areas shown on the map titled Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection, dated July \_\_, 2004. To meet the goals of ESA and the Clean Water Act, the Agencies arrived at the boundaries of the "Preserve Areas" based on best professional judgment and best available information regarding regional and site-specific biology and hydro-geomorphology (such as wetland delineations, species accounts, and environmental impact reports), while recognizing that development is planned in the area. Of particular focus is the preservation of vernal pool complexes and corridors for Morrison Creek and Laguna Creek. The mapped boundaries conceptually identify the smallest areas that would be acceptable to the Agencies and are predicated on ten principles and standards that would be followed by developers and planners as each element of the overall development proceeds.

The conceptual level strategy should be used by developers and planners to design and plan projects in the SDCPA. The Agencies will use the strategy to aid in the review of proposed development and evaluate the probable individual and cumulative effects on aquatic resources and sensitive species.

The Agencies anticipate that permit decisions and biological opinions will be completed on a case-by-case basis, using site-specific project and aquatic resource habitat information. Each proposed project would be evaluated on its



own merits within the larger context of the SDCPA. Depending on the particular hydrology, habitat features, and development plans for a particular parcel, the conceptual preserve boundaries may need to be adjusted to minimize direct and indirect impacts to aquatic resources. Appropriate compensatory mitigation will be developed following demonstrated avoidance and minimization of project impacts.

#### Strategy Principles and Standards:

1. Maintain the overall hydrologic integrity of the Preserve Areas so as to ensure that there will not be a net loss of functions and values in the preserve areas as a result of adjacent development. This includes minimizing changes to the distribution, frequency and duration of flows, including restricting summer nuisance flows.

2. Maintain corridors and large areas for wildlife and the propagation of flora. Preserve vernal pool hydrology and integrity to benefit listed plants and invertebrates. Establish interconnected conservation areas that are managed in perpetuity and tie into existing local and regional planning efforts. Provide for meaningful conservation of sensitive plant habitats for species integrity and long-term survival.

3. Manage stormwater flows to minimize changes to the existing flow regime and to maintain or improve existing water quality in the Preserve Areas, including minimizing changes to the baseline flows in the receiving waters to the extent practicable and not allowing untreated discharges to occur to the aquatic resources in the Preserve areas.

4. Use elevated roads, arched culvert crossings and other practices for transportation corridors that must traverse Preserve Areas to the extent that is practicable to minimize direct and indirect impacts to aquatic resources in the Preserve areas and to avoid significant impacts to the functions and values of the Preserve Areas.

5. Use conservation design elements to minimize the effect of adjacent development on the Preserve Areas by constructing, to the extent practicable, single-loaded roads where housing directly abuts Preserve Areas, designing roadside landscaping to drain (surface and subsurface) toward urban features and not towards the Preserve Areas, and orienting houses so that the front living area faces the Preserve Area. Fences should be low and not restrict visibility into the Preserve Area. Impervious surfaces would be minimized. Within the development area, impervious would be minimized to the extent practicable and storm water/water runoff plans would be designed to use BMPs such as vegetated

swales, infiltration trenches, and constructed wetland filter strips to treat storm water and water runoff from the development areas.

6. Locate compatible land uses next to preserve areas. The preferred land uses adjacent to the Preserve Areas are parks, hiking trails, athletic fields, and other forms of open space areas. Trails and bike paths to provide circulation within a development area would generally be located outside the Preserve Areas,; and would only be permitted to cross the Preserve Areas if it is determined, on a case by case basis, that such crossings are necessary from a circulation standpoint and will be constructed in a manner that prevents adverse impacts to the functions and values of the Preserve Areas.

7. Mow-only firebreaks may be located at the outer edges of Preserve Areas. Mowing within the Preserve Areas should be conducted consistent with achieving the goals of the preserve management plan, including promoting native/discouraging non-native species. Firebreaks that necessitate herbicide application or tilling, plowing or other soil disturbance would be located outside of the Preserve Areas.

8. Ensure Preservation Areas are protected in perpetuity. This includes establishing buffers and not locating lot lines within the preserve boundary. Areas would be protected in perpetuity through conservation easement that is adequately funded for maintenance and managed by a conservation-oriented third-party. Preserve Areas would be fenced and signed.

9. Implement mitigation measures (avoidance, minimization, and compensation) that adequately offset direct and indirect impacts to aquatic resources and listed species. In general, establishing the Preserve Areas is considered a regional measure to achieve impact avoidance and minimization. Vernal pools that are directly impacted by projects should be mitigated at ratios equal to or greater than 2:1 for preservation and 1:1 for creation/restoration. Vernal pools indirectly affected should be mitigated at ratios equal to or greater than 1:1 for preservation and 1:1 for creation/restoration. Preservation and creation/restoration will generally be completed in the same watershed but not within, or in a way that would affect, existing wetland complexes. On a case-by-case basis, preservation credit may be given for vernal pools in the Preserve Areas (except for the 250-foot wide indirect impact zone). Excellent opportunities exist in or near the SDCPA for the establishment of a vernal pool conservation bank(s) and a wetland compensatory (i.e., restoration/creation) mitigation bank(s).

10. Recognize the realities and constraints placed on construction design due to infrastructure and market-driven forces by considering the costs of avoidance and mitigation measures and choosing measures that are the most cost



effective way to achieve the long-term goal of maintaining the biological functions and values of the Preserve Areas.

## Appendix B — Sares – Regis Off-Site Alternatives Analysis

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# SARES • REGIS GROUP

*REPORT ON:*

OFF-SITE ALTERNATIVES ANALYSIS  
SUNRISE-DOUGLAS PROJECT

OCTOBER 10, 1994



# SARES • REGIS GROUP

REPORT ON:

## OFF-SITE ALTERNATIVES ANALYSIS SUNRISE-DOUGLAS PROJECT



WADE  
ASSOCIATES  
urban planning & design

2140 professional drive, suite 140, roseville, california 95661  
(916)783-8980 • 916)969-8980

THIS REPORT WAS PREPARED THROUGH THE COLLABORATIVE EFFORT OF:

TOM LEWIS  
RANDY COLLINS  
KARIN SCHWAB  
BILL SUGNET  
BERNARD GOODE, P.E.  
BOB DAWSON

SARES • REGIS GROUP  
SARES • REGIS GROUP  
TAYLOR & HOOPER ATTORNEYS  
SUGNET & ASSOCIATES  
ENVIRONMENTAL ENGINEERING CONSULTANT  
CASSIDY & ASSOCIATES

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## 1. INTRODUCTION

Section 404 of the Federal Clean Water Act of 1972 requires a permit to fill wetlands under the jurisdiction of the US Army Corps of Engineers (hereafter Corps). If it is determined that the Basic Purpose of the project is not water dependent, there is a rebuttable presumption that an alternative site exists which would fulfill the overall project purpose and have less adverse environmental consequences.

It is incumbent on the project applicant to demonstrate that there is not a viable alternative site that would have less environmental adverse consequences. In such cases the applicant must identify alternative sites and provide an evaluation of the sites.

The project evaluated in this analysis is the Sunrise-Douglas plan area, a 1,225 acre master planned community proposed in the Rancho Cordova area of Sacramento County (Figure 1).

This study is a compilation of information presented in previous studies prepared by the applicant (The Sammis Company, Sunrise-Douglas Project Revised Amended Section 404 (b)(1) Alternatives Analysis, June 5, 1991 and SARES•REGIS Group, Sunrise-Douglas Project Supplemental Alternatives Analysis, January 18, 1994). The alternative sites identified in these earlier studies are reviewed in this study at the request of the Sacramento Corps. The purpose is to clearly define the criteria applied in the previous studies and to provide a more rigorous application of the criteria in the analysis of the alternative sites. In the process of applying a systematic evaluation approach eight additional alternatives sites are identified and subjected to the evaluation criteria.

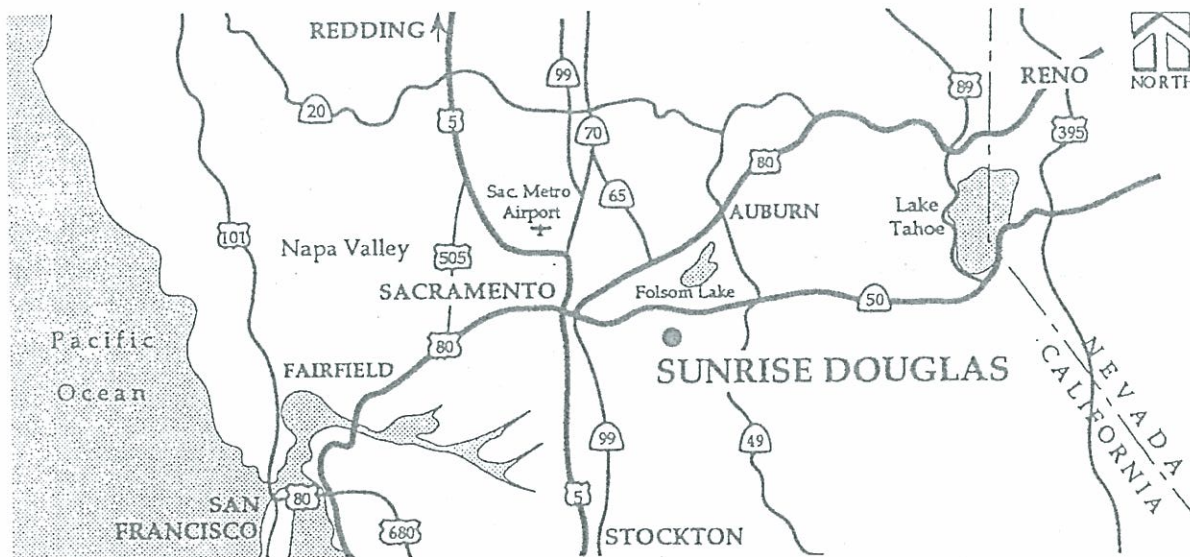


FIGURE 1  
REGIONAL MAP



## 1.1 Tests for Viable Alternative Sites

Under the Section 404 (b)(1) guidelines, there are three fundamental tests that a site must meet to qualify as a viable alternative for the project. These tests provide the backbone structure of the alternatives analysis. The approach to the analysis is to clearly define a set of criteria for each of the three tests and apply these to the universe of alternatives that may exist. If an alternative site fails to meet any of these three tests, it cannot be the least environmentally damaging practicable alternative and may be removed from consideration as an alternative site. The three tests are that the alternative must:

- be practicable;
- have less environmental impact on the aquatic ecosystem; and
- lack other significant adverse environmental consequences.

For each of these tests this report establishes a set of criteria to be applied in evaluating each alternative site. To the extent feasible these criteria are quantified and can be easily replicated by review of the information provided or referenced in this document. In some instances the information is not readily quantifiable, but a reasonable basis for evaluation is defined.

Certain criteria will be applied as minimum standard. If a candidate parcel fails to meet this minimum standard it is not considered further. Other criteria represent a range of conditions that affect the viability of a site as an alternative. For these criteria the range of possible effects is translated to a numerical rating to provide a basis of comparison among alternatives.

In order to be considered practicable an alternative site must fulfill the overall project objectives. Therefore, the overall project objectives are clearly defined in the first section of this report.

## 1.2 Sunrise-Douglas Site Description

General Site Location and Characteristics The project, located on the Sunrise-Douglas site, involves 1,225± acres of land. The site is on the east side of Sunrise Boulevard, south of the Rancho Cordova community in eastern Sacramento County. Douglas Road bounds the site to the north, Jaeger Road to the east, Kiefer Boulevard to the south, and Sunrise Boulevard to the west. The Mather Air Force Base extends west of the site from Sunrise Boulevard, approximately 12 miles east-southeast of downtown Sacramento (Figure 2).

The project site contains rolling grasslands interspersed with vernal pools and seasonal drainages. The site encompasses level and slightly rolling alluvial terraces of the American River. Elevation on the site ranges from 129 to 180 feet above sea level. The greatest surface relief occurs in the property's southern half. The ground slopes generally to the west and the south, and several intermittent natural and man-made channels drain the property.



The site's vegetation includes primarily annual grasses similar to grasslands throughout eastern Sacramento County. The dominant species include mostly non-native annual grasses and forbs, such as soft chess, ripgut brome, medusa head, wild oats, filaree, mustard, wild radish, and yellow star-thistle. Some native wildflowers also occur on the site. Native trees do not exist on the site, except for a few willows and cottonwoods at one of the two man-made ponds. An abandoned olive orchard occupies approximately 11 acres in the east-central portion of the site, just south of the man-made intermittent drainage ditch. Approximately 300 mature trees grow in this area.

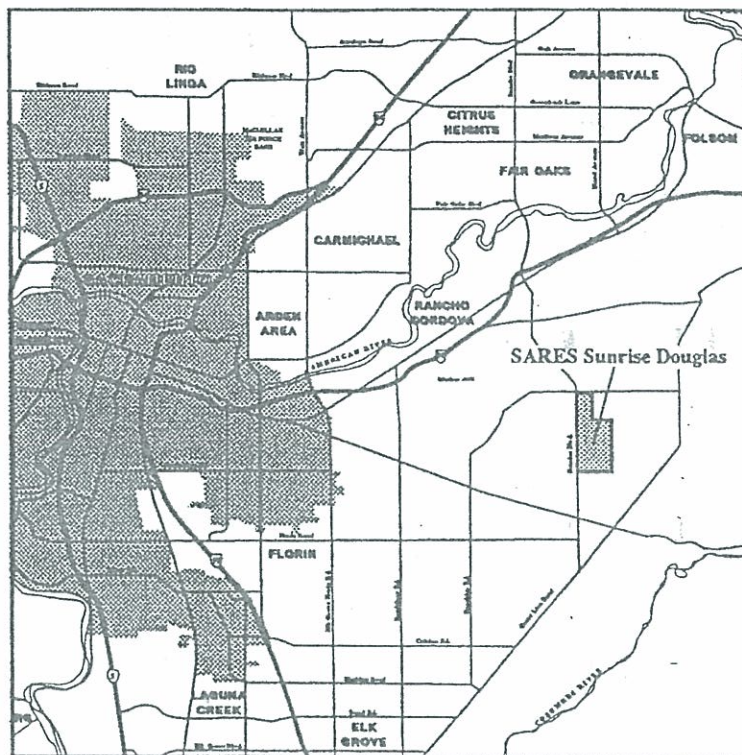


FIGURE 2  
SUNRISE-DOUGLAS SITE LOCATION MAP

**Surrounding Land Uses** Aerojet Corporation owns the land immediately north of the project site (Figure 3). The Sacramento County General Plan designates the Aerojet land for industrial uses. The site has been used for space rocket development and testing. Although such activity has been absent in recent years the Aerojet facility is considered an active industrial use. Presently, Aerojet uses the property in a very non-intensive manner, and the land immediately north of Douglas Road serves to "buffer" potentially hazardous uses located further to the north. A limited number of industrial uses occur at the Security Industrial Park located east of Jaeger Road.

The former Mather Air Force Base lies west of the project site (Figure 3). Congress approved closure of the base in 1989, and military uses ceased in 1993.



The future use of the facility is currently under study by Sacramento County and will include continued aviation activity. Agricultural lands occur to the south and east of the project site. Currently, landowners use these lands for grazing and other farming purposes. An individual has proposed to construct a golf course on the land to the south, and residential development will probably occur to the east.

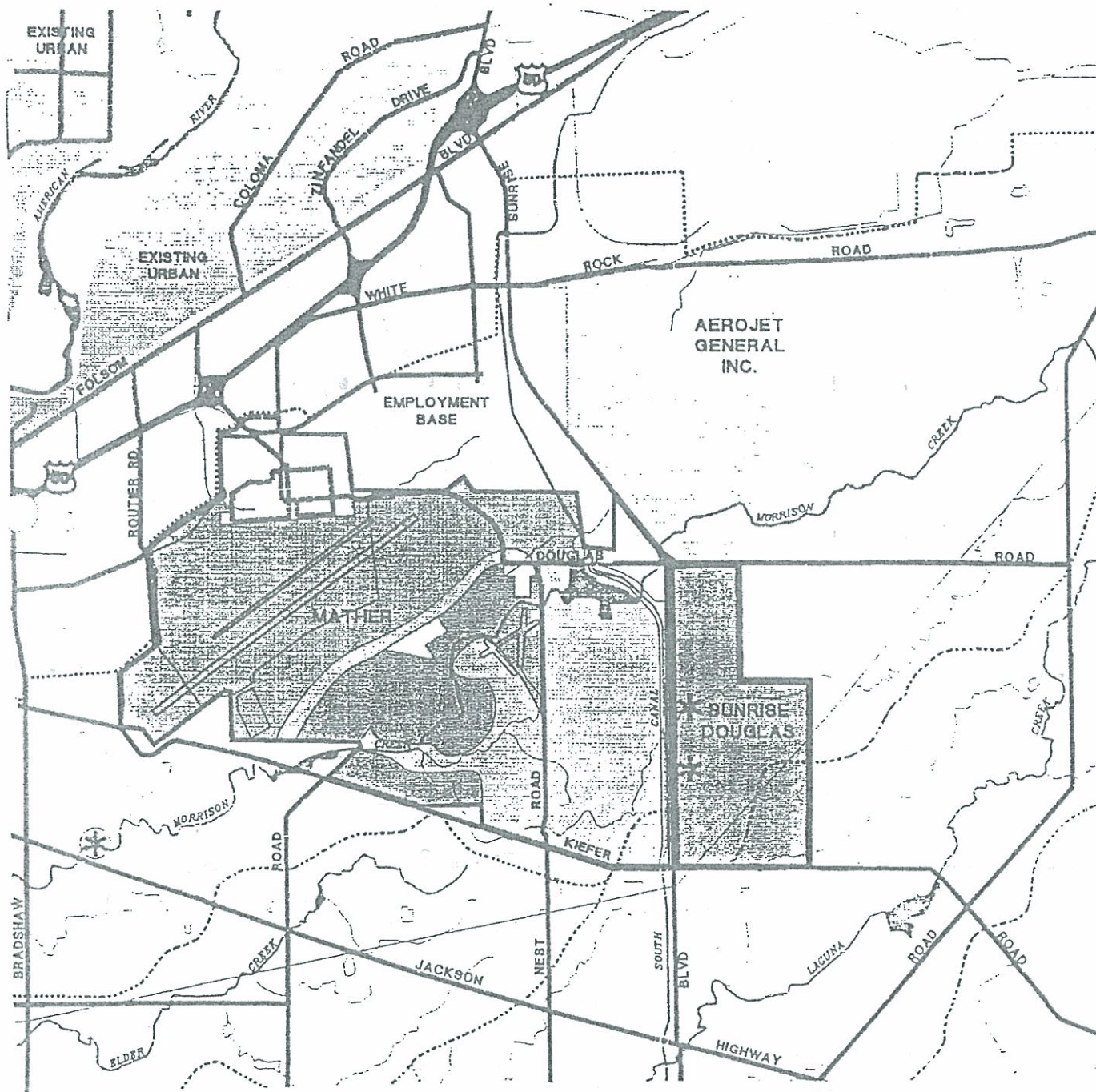


FIGURE 3  
SUNRISE-DOUGLAS SURROUNDING USES

## 2. PROJECT PURPOSES

### 2.1 Basic Project Purpose

The Section 404 permit guidelines establish a rebuttable presumption that a practicable alternative exists if the "*basic purpose*" of the proposed project is not water dependent. The Sacramento Corps has defined the basic purpose of the Sunrise-Douglas project to be "residential development" (Champ letters to Hooper June 20, 1991 and February 10, 1994). Residential development is not water dependent. Thus, there is a presumption that a practicable alternative exists unless the applicant can demonstrate otherwise.

### 2.2 Overall Project Purpose

The Corps has distinguished the *basic* project purpose (used to determine water dependency) from the *overall* purpose (used to rebut the presumption that a practicable alternative exists).

The overall project purpose for the Sunrise-Douglas project, based on discussion with the Sacramento Corps, is:

*To develop a viable master planned community with affordable housing in southern or east Sacramento County that will be consistent with the County's land use policies.*



### 3. METHODOLOGY FOR EVALUATING ALTERNATIVES

In order to be considered a feasible off-site alternative for the Sunrise-Douglas project, as defined by Section 404(b)(1), a candidate site must:

- be practicable;
- have less environmental impact on the aquatic ecosystem; and
- lack other significant adverse environmental consequences.

The specific standards associated with each of these tests constitute the criteria for eliminating sites from further consideration as off-site alternatives.

The first test in determining if a site qualifies as a viable alternative to the project is whether the alternative site is practicable.

According to 40 C.F.R. § 230.10(a)(2):

*An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.*

Thus, the statement of the *overall* project purpose adds specific criteria in evaluating the alternative sites. In order to be practicable a site must conform to the overall project purpose. An alternative is practicable if it is:

- consistent with overall project purposes,
- available, and
- capable of being done (i.e., economically feasible).

Each of these establishes a basic category of evaluation criteria. Within each category are specific criteria that can be applied to filter through the universe of alternative sites that may exist. The criteria that relate to the overall project purpose and availability are minimum standards. If an alternative site can not fulfill the overall project purpose or is not available at the time of the project application, then the site is not suitable and is not considered further. The criteria relating to the standards of feasibility reflect a range of possible conditions. As discussed below these standards are evaluated in a numerical ranking.

#### 3.1 Evaluation Methodology

As stated in the previous Revised Amended Alternative Analysis (1991), and in the Supplemental Alternatives Analysis (1994), the need for a project of the Sunrise-Douglas type is established on the basis of the projected growth in population and housing need in Sacramento, and the policies of Sacramento County. The key policies that affect this project include:

- allocation of adequate land use to accommodate County growth projections

- adequate housing within a 6- to 8-mile commute of major employment centers
- considerations of environmental constraints as identified by the County
- utilization of existing infrastructure

The analysis leads to the conclusion that a portion of the Sacramento County housing demand should be fulfilled in reasonable proximity to the Highway 50 corridor. The commute shed established by County policy provides the basis for a focused study area which is used for the purpose of seeking alternative sites that could fulfill the project purpose.

This analysis provides a summary of the growth projections for the County in the Highway 50 Corridor and a summary of key policies as they relate to the project purpose. The jobs/housing commute shed is a key concept which addresses the County policy of reducing both the number and the length of home to work trips in order to mitigate the non-attainment status under the National Ambient Air Quality Standards. As discussed in Sections 5 and 6 of this study, the delineation of the major employment centers and the commute distance from residential areas to the employment centers is a key air quality consideration for Sacramento County.

This study includes a survey and analysis of prospective alternative project sites within Sacramento County south of the American River as described in Section 5. The selection of alternative sites is further refined by delineating the boundary of a "commute shed" as defined by the Sacramento County General Plan, as summarized in Section 6. All parcels of minimum size necessary to fulfill the overall project purpose, as defined in Section 7, were mapped utilizing base maps provided by Sacramento County.

Parcels that fail to meet these minimum standards are not considered further.

Alternative sites that met the minimum standards of size and location were examined to identify those not available for acquisition. These include sites that were in public ownership; were under the control of competing development interest and in the process of actively seeking development entitlement or under actual development, or were being utilized for industrial uses that would be incompatible with residential use and therefore would preclude fulfillment of the overall project purpose. The alternative sites identified as not available were also not considered further. Table 1 in Section 4, Summary of Findings, summarizes the parcels that were identified and evaluated as to whether they met the minimum location and size standard and were available.

Parcels that met the minimum standards were then systematically evaluated on the basis of specific criteria to identify those sites that are capable of fulfilling the project purpose. For each criterion a numerical rating between 0 and 5 is assigned, with 5 reflecting the most favorable and 0 reflecting the least favorable characteristic of each criterion. The alternative locations are then ranked according to their numerical placement in meeting the characteristics of each



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criterion. The alternatives and the evaluation criteria are represented graphically on maps of the area.

Table 2 in Section 4, Summary of Findings, summarizes the numerical rank each alternative location received relative to the criteria.

### 3.1.1 Time Frame for Analysis

As requested by the Corps, the analysis of alternative sites is set in the time frame of 1989 when the current application was submitted.

## 3.2 Criteria for Establishing Practicability

Following is a summation of the criteria to be applied under the practicability test.

### 3.2.1 Consistent with Overall Project Purposes

According to the accepted overall project purpose the alternative site must be:

- Criterion 1: Located in Southern or Eastern Sacramento County;
- Criterion 2: Consistent with Sacramento County General Plan policies relating to air quality objectives and jobs/housing relationship; and
- Criterion 3: A minimum size consistent with development as a master planned community.

### 3.2.2 Available

Parcels were considered not available as alternative sites if they were:

- Criterion 4: Under public ownership; or
- Criterion 5: Already developed, committed for development, or committed to incompatible industrial use.

Criteria 1 through 5 are considered minimum standards. If an alternative site does not meet these minimum criteria it is not consistent with the overall project purpose and is dropped from further analysis.

### 3.2.3 Capable of Being Done ( Feasible)

An alternative is capable of being done (feasible) if it is:

- Criterion 6: Not located within Aggregate Resource Area;
- Criterion 7: Not located within the Mather Air Force Base Flight Zone;
- Criterion 8: Not under Williamson Act Contract; or will be soon released
- Criterion 9: Economically viable as determined by cost to access municipal infrastructure (regional sewer); and

- Criterion 10: Economically viable as determined by cost to access freeways, and degradation of air quality due to distance from freeways;
- Criterion 11: Large enough to support major infrastructure improvement cost.

### 3.3 Impacts to Wetlands and Other Waters of the United States

The second test in determining if a site qualifies as a viable alternative to the project is whether the alternative site:

- Criterion 12: Has less environmental impact on the aquatic ecosystem.

### 3.4 Other Significant Adverse Environmental Consequences

The third test in determining if a site qualifies as a viable alternative to the project is whether there are other significant adverse environmental consequences. The following are the criteria established to define other significant adverse environmental consequences.

An alternative site poses other significant adverse environmental consequences if:

- Criterion 13: Air quality is degraded due to increased distance from existing or planned light rail line; or
- Criterion 14: Oak woodlands or riparian zones are substantially disturbed.

### 3.5 Previous Alternative Sites Analyses

A total of 39 potential alternative development sites were identified in two previous alternative studies: The Sammis Company, Sunrise-Douglas Project Revised Amended Section 404 (b)(1) Alternatives Analysis, June 5, 1991 and SARES\*REGIS Group, Sunrise-Douglas Project Supplemental Alternatives Analysis, January 18, 1994. These included 23 alternative sites in the first report (numbered 1 through 23) and 16 alternative sites in the second report (numbered 1 through 16). For purposes of clarity, the alternative sites reviewed in these two previous reports are shown on one map, Figure 4. Note that sites 1 through 23 on these maps are the same as those shown in the Revised Amended Alternative Analysis (1991), and parcels 24 through 39 correspond to parcels 1 through 16 in the Supplemental Alternatives Analysis (1994).

Pursuant to direction from the Sacramento Corps, the Revised Amended Alternative Analysis (1991) assessed potential alternative sites in six regions of Sacramento County. These included: (1) North Natomas; (2) Folsom; (3) Scott Road (Upper and lower) and Rancho Murieta (upper); (4) Elk Grove/West Vineyard; (5) East Vineyard, Rancho Murieta (lower) and Cosumnes (upper); and (6) South Elk Grove. The criteria used to evaluate alternative sites included:



- Land use constraints
  - prime agricultural land
  - Williamson Act Contract
  - building moratorium
  - developed or committed to development
- Environmental constraints
  - oak woodland resource areas
  - landfills
  - wetlands
  - development-constrained zones (propellant hazard, airport approach)
- Physical constraints
  - soils (shrink/swell)
  - dredge piles
  - topography
  - floodplain

Applying these screening criteria to the six regions resulted in the identification of alternative sites 1 through 23 (Figure 4). The North Natomas area was identified as having no sites because of land use constraints (building moratorium, agricultural land) and physical constraints (100-year floodplain). The Folsom region was identified as having seven potential sites (1 through 7). The Scott Road and Rancho Murieta areas were identified as having 10 potential alternative sites (sites 8 through 17). The Elk Grove/West Vineyard area was identified as having one alternative site (site 18). The East Vineyard, Rancho Murieta and Cosumnes area was identified as having five alternative sites (sites 19 through 23). The South Elk Grove area was shown as having no alternative sites due to land use constraints (agricultural land and Williamson Act Contract).

Pursuant to comments from EPA and U.S. Fish & Wildlife Service, the Supplemental Alternatives Analysis (1994) looked at the Rancho Cordova area focusing on sites with less than the previously determined minimum acreage requirement in close proximity to the Sunrise-Douglas site. Applying similar selection criteria used in the Revised Amended Alternatives Analysis (1991) (i.e., land use constraints, environmental constraints, and physical constraints), an additional 16 sites were identified, shown as alternative sites 24 through 39 on Figure 4.

The 39 preliminary alternative sites are included and addressed in this analysis. This analysis encompasses the criteria used in the two previous studies (Revised Amended Section 404 (b)(1) Alternatives Analysis, 1991, and Supplemental Alternatives Analysis, 1994), but applies a more rigorous evaluation of viable alternative sites, as detailed in the following discussion on methodology.

As noted (p. 1), this study re-evaluates certain parcels which were discussed in the previous studies, but eliminated earlier in the process, and thus not identified as one of the 39 parcels in the earlier studies. The fact that these parcels are



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identified in this study results from the system of evaluation applied here. In the previous study these parcels were eliminated on the basis of specific criterion early in the analysis. In this study the same parcels are carried further in the analysis to more clearly document the evaluation process. The evaluation of criteria is consistent with the earlier studies but the sequence of applying the criteria and the more systematic approach more clearly identifies the candidate parcels.



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#### 4. SUMMARY OF FINDINGS

- The overall project purpose is to develop a viable master planned community with affordable housing in southern or east Sacramento County that will be consistent with the County's land use policies.
- The proposed Sunrise Douglas project would develop approximately 7,000 dwelling units while supporting commercial, business-professional, school and park uses on 1,225 acres.
- Policies in the Sacramento County General Plan (1985) and planning practice in the Sacramento region since 1982 indicate that housing opportunities should be located within 8 miles of major employment centers.
- The major employment centers in the Sacramento region are the downtown core area and concentrations of employment along the Highway 50 corridor. This includes the Cordova/Sunrise employment center.
- In order to locate housing in close proximity to employment centers along the Highway 50 corridor and avoid traffic congestion at crossings of the American River the alternative sites should be located south of the American River.
- An 8 mile driving distance from an employment center defines the "commute shed" for that center. In order to be consistent with Sacramento County policy 80% of all housing opportunity should be within the commute shed. To accommodate new housing need it is determined that the alternative sites should be within the commute shed.
- Master planned communities in the Sacramento region have been not less than 400 acres in size and this is assumed to be a minimum threshold criterion.
- The majority of the land area in the south and south central (Elk Grove and Vineyard) areas of Sacramento County have been substantially developed in small estate parcels of 5 to 20 acres and are not available for development.
- Most large land holdings in the eastern portion of the county are not available or are highly constrained.
- A total of 47 parcels, including 39 parcels specifically identified in previous studies, are identified as potential candidates to be considered as alternate sites. All 47 sites were evaluated in the previous studies but 8 were rejected on the basis of preliminary evaluation criteria. Inclusion of all 47 sites in this study reflects a more systematic sequence in which evaluation criteria are applied.
- In this study seven of the original 39 parcels (Parcels 14, 15, 21, 25, 26, 27, and 28) are reconfigured in new aggregations as larger alternative sites, as noted

in Table 1. Thirty-two of these parcels did not meet minimum threshold requirements of location, size or availability or were aggregated as new parcel configurations and were not further considered.

- The remaining 15 parcels are analyzed for conditions relating to project feasibility, and the potential effect on wetlands and other significant natural resources.
- All sites in the study area, including the Sunrise-Douglas site, are constrained by one or more criterion and none have been determined to be a superior site which meets the overall project purpose.
- The Sunrise-Douglas site is the least constrained.

Tables 1 and 2 provide a list of all sites evaluated as alternative sites for the Sunrise-Douglas project. In order to maintain continuity the alternative sites are designated the same identifying number as used in the previous studies. However, additional review in this study has resulted in slight modification of the parcel configurations or aggregation of parcels under a single ownership to identify larger parcels and potential alternative sites.

Table 1 summarizes the threshold analysis which determines which alternative sites fulfill the minimum requirements of location, size and availability. Sites that met the minimum standard are designated "Y" under the appropriate criterion. Those that do not meet the minimum standard are designated "N" and a dark pattern blanks out the balance of the analysis. Only those sites that are consistent with the overall project purpose are considered further in the analysis.

Table 2 provides a summary of the relative ranking of each alternate site in consideration of criteria that evaluate feasibility, relative potential impact on the wetland resource and negative impacts on other significant environmental resources. The criteria are ranked on a scale of 0 to 5 according to the characteristics and standards provided in Sections 10 through 18. A site satisfying all the criteria could achieve a ranking of 45. No site achieved this ranking; however, the Sunrise-Douglas project ranked the highest at 38 with the nearest contender ranking only 32.



Table 1  
Summary of Threshold Criteria  
for Alternative Sites

			Consistent w/Project Purpose			Available	
	Criterion		1 ✓	2	3 ✓	4 ✓	5 ✓
Map Key	Site Description	Acreage	South of the American River	Within the Commute Shed	Minimum Parcel Size	Non-Public Lands	Not Developed or Committed
SUNRISE-DOUGLAS PROJECT			Y	Y	Y	Y	Y
Folsom							
1-2		182	Y	Y	(N)		
3		427	Y	Y	Y	Y	(N)
4		943	Y	Y	Y	Y	(N)
5		182	Y	(N)			
6		133	Y	(N)			
7	North of the American River not considered further	424	(N)				
Upper Scott Road/Lower Scott Road/Rancho Murietta							
8	Aerojet; includes former parcels 8, 25, 26, 27, 28	8,417	Y	Y	Y	Y	(N)
9		530	Y	Y	Y	Y	Y
10		645	Y	Y	Y	Y	Y
11		212	Y	Y	(N)		
12		662	Y	(N)			
13		896	Y	(N)			
14	now included in Parcels 35 and part of 36						
15	now included in Parcels 38 and part of 36						
16		2,763	Y	(N)			
17		624	Y	Y	Y	Y	Y
Elk Grove/West Vineyard							
18		180	Y	(N)			
East Vineyard/Lower Rancho Murietta							
19		1,244	Y	(N)			
20		918	Y	Y	Y	Y	Y
21	now included in Parcels 45 and 46						
22		480	Y	(N)			
23		204	Y	(N)			
Rancho Cordova							
24	Mather AFB	1,553	Y	Y	Y	(N)	
25	part of Aerojet (Parcel 8)						
26	part of Aerojet (Parcel 8)						
27	part of Aerojet (Parcel 8)						
28	part of Aerojet (Parcel 8)						
29		433	Y	Y	Y	(N)	
30		846	Y	Y	Y	Y	Y
31		830	Y	(N)			
32		867	Y	Y	Y	Y	(N)
33		640	Y	Y	Y	Y	Y
34		897	Y	Y	Y	Y	Y
35		778	Y	Y	Y	Y	Y
36		1,536	Y	Y	Y	Y	Y
37		1,262	Y	Y	Y	Y	Y
38		1,592	Y	Y	Y	Y	Y
39		610	Y	(N)			
40		958	Y	Y	Y	Y	(N)
41		780	Y	Y	Y	Y	(N)
42		1,030	Y	Y	Y	Y	Y
43		572	Y	(N)			
44		1,201	Y	Y	Y	Y	Y
45		434	Y	Y	Y	Y	Y
46		550	Y	Y	Y	Y	Y
47		*375	Y	Y	(N)		

\* See Page 27

Y = Yes

N = No



Table 2  
Summary of Ranking of Alternative Sites  
by Specific Criteria

	Feasibility						Aquatic System	Other Adverse		
							Impacts	Environmental Impacts		
Criteria	6	7	8	9	10	11	12	13	14	
Map Key	Aggregate Resource	Mather Flight Zone	Williamson Act	Sewer Service	Freeway Access	Parcel Size	Wetlands	Light Rail Access	Oak Woodland Riparian	Total Rating
S-D	5	3	5	5	4	5	3	3	5	38
Folsom										
1 & 2										0
3										0
4										0
5										0
6										0
7										0
Upper Scott Road/Lower Scott Road/Rancho Murieta										
8										0
9	5	3	5	4	2	3	3	2	5	32
10	5	3	5	3	1	3	3	2	5	30
11										0
12										0
13										0
14										0
15										0
16										0
17	5	0	1	5	2	3	3	2	5	26
Elk Grove/West Vineyard										
18										0
East Vineyard/Lower Rancho Murieta										
19										0
20	5	5	2	3	1	3	5	1	5	30
21										0
22										0
23										0
Rancho Cordova										
24										0
25										0
26										0
27										0
28										0
29										0
30	5	3	0	4	5	3	3	3	3	29
31										0
32										0
33	5	5	0	2	2	3	0	2	5	24
34	5	5	0	2	0	3	5	2	5	27
35	5	3	5	2	2	3	3	1	3	27
36	5	3	5	2	2	5	3	1	3	29
37	5	5	0	1	0	5	5	1	3	25
38	5	5	5	1	0	5	3	1	3	28
39										0
40										0
41										0
42	5	3	0	4	1	5	5	1	5	29
43										0
44	5	3	5	3	1	5	3	1	3	29
45	5	3	0	3	1	3	5	1	3	24
46	5	3	5	3	1	3	0	1	5	26
47										0



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## 5. CRITERION 1

### LOCATION IN SOUTHERN OR EASTERN SACRAMENTO COUNTY

The Sacramento Metropolitan region has historically grown along the major freeways, Interstate 80, US Highway 99 and US Highway 50, and more recently along Interstate 5. However, the dominant pattern has been away from the downtown core area to the northeast (along I-80) and the east (along Highway 50). The area between the freeways (comprised of older rural subdivisions such as Carmichael, Fair Oaks and Citrus Heights) has been substantially urbanized. Over time Sacramento County north of the American River has been fully developed with the exception of portions of the city of Folsom to the east and the Natomas Basin north of downtown Sacramento. These areas have been actively planned for development and were in process of securing land use entitlements in 1989. In addition, the Natomas Basin has been extensively studied to determine the best means of mitigating the flood potential which could significantly limit the development of the area. The resolution of the potential flooding problem was not resolved in 1989.

As a consequence of the existing development pattern in Sacramento County the opportunity to further urbanize is highly constrained or simply unavailable in the area north of the American River. Nonetheless, Sacramento County is projected to continue substantial growth in both employment and housing.

Sacramento County projects a need for 28,800 acres of new housing development to accommodate a projected population of 1.25 million residents by the year 2010 (Sacramento County, Background Report for the Land Use Element of the Sacramento County General Plan 32, December 1988). In fact, based on the 1990 Census results, Sacramento County may gain one-half million new residents for a total of 1.5 million and experience the greatest growth in Northern California. In either case, Sacramento County will require a substantial amount of new housing in the next two decades.

The Highway 50 corridor and the downtown core are recognized as major employment centers in the Sacramento region. Over the past decade, the Highway 50 corridor has attracted a significant amount of the new employment development in the region. Since 1980, the communities of Folsom and Rancho Cordova have experienced intense housing demand and rapid employment growth due to expansions of the high technology, electronics, and new services industries. Over 2,217 acres of land zoned for industrial uses stretch out along Sunrise Boulevard to the south of Highway 50. A substantial amount of land exists along the Highway 50 corridor between the Bradshaw and the Hazel freeway with either an industrial park or business park designation.

As early as 1982 Sacramento County had studied the need for housing in the Highway 50 corridor and concluded that less than one third of the job related housing demand could be fulfilled within 6 miles of the major employment centers (Sacramento County Department of Planning and Community Development, December, 1982). In January 1989, industrial parks and business

parks in the Cordova/Sunrise employment center contained approximately 4,104,120 square feet of constructed space. Individuals have proposed a total of 9,481,847 square feet in this area, much of which Sacramento County has already approved.

With the major employment centers south of the American River, a major new housing area north of the river would require employees to cross the river in their daily commute. The concentration of commuter traffic already places significant traffic impacts, with related air quality and traffic congestion on the limited capacity approaches and bridge crossings over the river. The alternative to creating additional traffic corridors through developed communities is to place major new housing areas near existing and expanding employment centers. Sacramento County policies in the General Plans in 1982, 1985 and 1993 clearly and consistently emphasize locating housing in close proximity to employment centers.

Application of this body of policy and existing pattern of urbanization which severely limit opportunities for substantial new housing development north of the river determine a criterion to eliminate all land north of the American River from further consideration. The study will therefore focus in the area generally bound by the American River on the north, the El Dorado County line to the east, the Cosumnes River to the south and the Sacramento River to the west. (Figure 5).

#### 5.1 Sunrise-Douglas Project

The Sunrise-Douglas project is located in defined study area portion of Sacramento County.

#### 5.2 Alternative Sites

This criterion excludes parcels located north of the American River. The earlier studies (The Sammis Company, 1991, and SARES•REGIS Group, 1994) did not identify any alternative sites in the North Natomas area and this criterion is consistent with those earlier findings. However, Revised Amended Alternatives Analysis (The Sammis Company, 1991, Figure B-6) identified and analyzed site No. 7 in the Folsom area. This site is located on the north side of the American River adjacent to the Placer County boundary and will not be considered further in this analysis. The site is noted in Figure 4, Section 3.



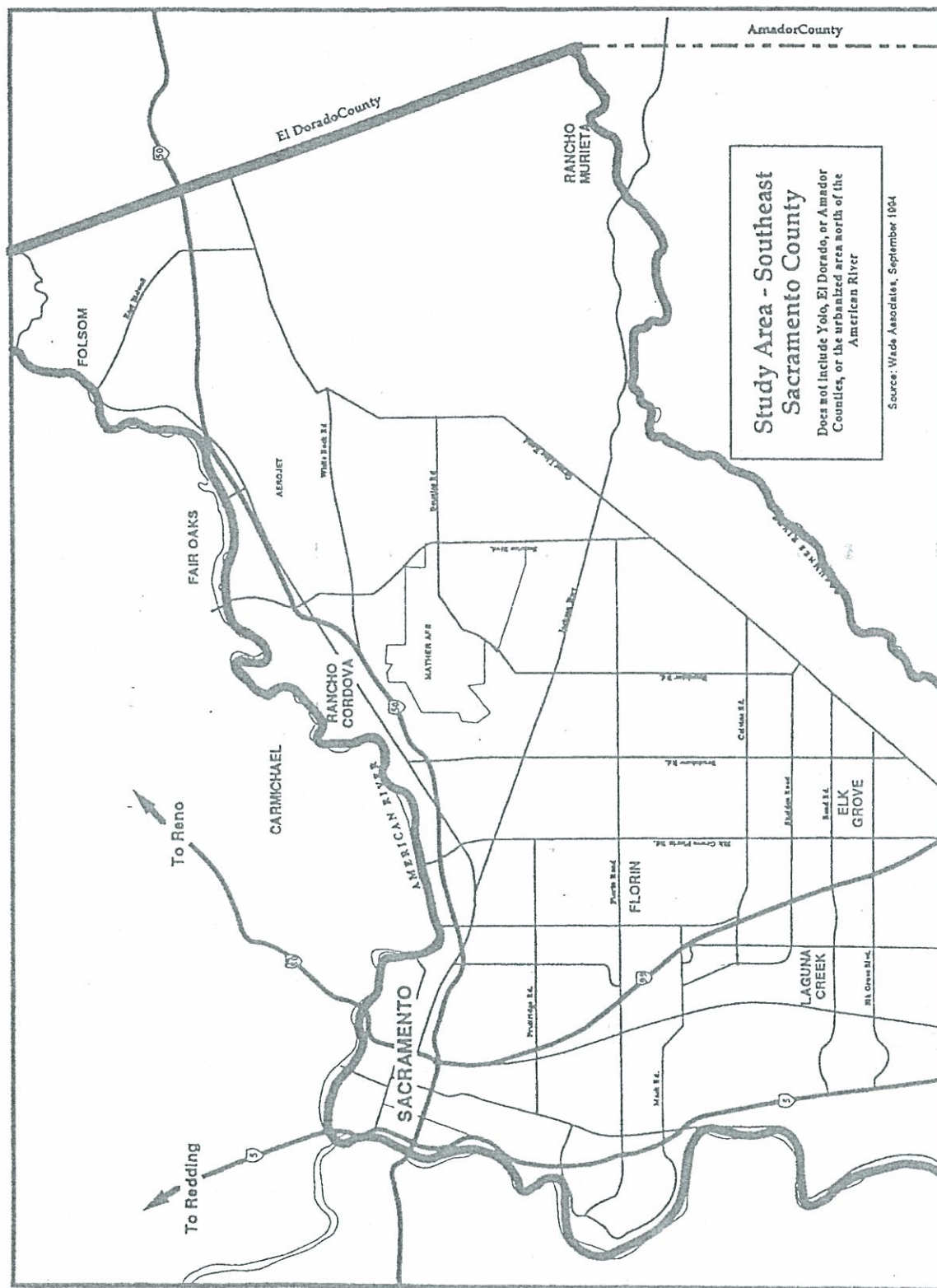


FIGURE 5  
 STUDY AREA: SOUTHEAST SACRAMENTO COUNTY

## 6. CRITERION 2

### CONSISTENCY WITH SACRAMENTO COUNTY POLICIES

The Sacramento County General Plan in effect at the time of the project application (1989) was adopted by the Board of Supervisors on July 29, 1982, and amended in April, 1985. The Sacramento County General Plan represents a comprehensive approach to the process of urbanization, provisions for transportation, public services and infrastructure, and the protection of natural resources. Land use, circulation, economic development, air quality, water quality, and a host of other considerations are incorporated in the Plan, and urban development is part of an overall mosaic that relies on the fulfillment of the other components of the Plan.

The following Goals and Policies excerpted from the amended General Plan define the County position on providing adequate and appropriately located land to accommodate projected population growth:

Goal:        *To develop a strong, diversified economic base and provide for the orderly distribution of housing and employment opportunities throughout the County. (Sacramento County General Plan, Page 7)*

A balance of jobs and housing is an important consideration in the Sacramento region because it is a non-attainment area under the National Ambient Air Quality Standards. The location of worker housing close to employment centers can significantly reduce the total of vehicle miles traveled (VMT) for commute trips with resulting improvements in air quality and reduced traffic congestion. Adequate supply of housing affordable to employees is a significant factor in the location decision of large employers. Therefore, providing for an adequate supply of housing contributes to the economic development potential in the region.

The concept was formalized as a policy for Sacramento County with the adoption of the Air Quality Element in the County General Plan excerpted in the following policies:

Policy:        *To encourage increased residential densities near employment centers and along major transportation corridors within the urban area, in conjunction with improved transit systems and service, as a means of increasing the housing supply and reducing potential commute distances. (Policy 3.1.1, Page 30)*

Policy:        *To achieve a 25% reduction in average home-work vehicle miles traveled. The County will adopt and implement a series of land use, transportation, and related programs oriented toward achieving national ambient air quality standards by 1987, including the following:*

1. *Develop land use plans and regulations which will reduce travel (particularly commute) distances, facilitate increased transit use, and reduce reliance on the automobile.*



2. Encourage higher intensity land uses (commercial, industrial, and increased density residential) within existing and planned transportation corridors.

3. Continue to support the development of a light rail transit system oriented toward providing trunk service between major employment centers and residential areas.

4. Actively support the efforts of the Regional Transit District to expand and upgrade service, to provide feeder service to the proposed light rail transit system, and to attract an increasing percentage of local travel.

5. Achieve a distribution of home-work trips as follows:

a.	less than 6 miles one way	60% of home-work trips
b.	6 to 8 miles one way	20% of home-work trips
c.	more than 8 miles one way	20% of home-work trips

(Policy 2.3.1, Sacramento County General Plan, Page 19-20)

The objective of this policy was to achieve a 25% reduction in home to work trips relative to the regional average that was calculated to exist in 1978 according to the Sacramento Area Transportation System (SATS) model (Sacramento County Department of Planning and Community Development, December, 1982, p.2).

Policy 2.3.1 Item 5 establishes the basis for the concept of a "commute shed", that is, the distance workers should drive from home to work. The concept has been applied in Sacramento County and Placer County as a measure of the appropriate maximum distance between home and work. It is intended not as an expectation that workers will necessarily select housing and distribute themselves in this idealized pattern, but rather, to gauge whether the housing opportunities are available in the area defined by a "commute shed boundary". The point is that if the housing is not available the workers will have no alternatives but to commute further.

The major employment centers included in this analysis are the downtown core area, the Fruitridge/Power Inn employment center, the Bradshaw employment center and the Cordova/Sunrise employment center. The boundary calculated by measuring an 8-mile commute on major arterial streets from each of these centers is illustrated in Figure 6.

A review of the land use pattern within the 8-mile commute shed for the downtown core, Fruitridge/Power Inn and Bradshaw employment centers, as illustrated in Figure 7, indicates these portions of the county to be virtually fully urbanized or urbanizing as approved development projects in 1989. Consequently, there was no opportunity to locate alternative sites in these commute sheds.

The commute shed concept is applied in this study as a measure of whether an alternative site fulfills the overall project purpose of providing housing consistent with Sacramento County land use policies. On this basis it is

determined that residential areas must be distributed generally within a boundary defined as an 8-mile commute from the major employment centers south of the American River. The Cordova/Sunrise employment center is the only commute area that provides a range of alternative sites to consider. This commute shed boundary as illustrated in Figure 8 forms a focused study area for the identification of alternative sites. Only sites within the 8-mile commute shed will be considered further in this study.

#### 6.1 Sunrise-Douglas Project

The Sunrise-Douglas project is within 2 miles of the Cordova/Sunrise employment center.

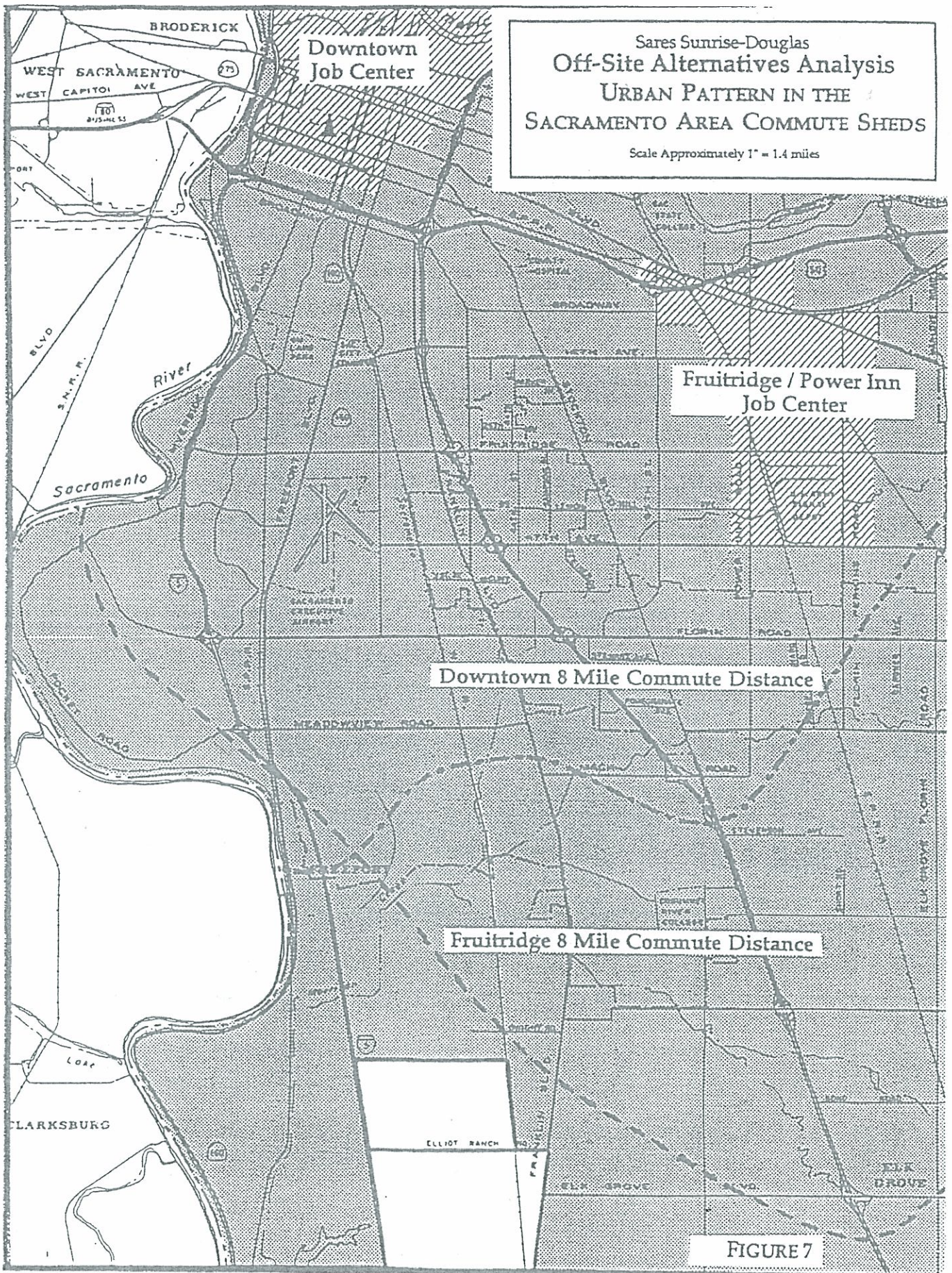
#### 6.2 Alternative Sites

This criterion excludes parcels located beyond the 8-mile commute shed boundary. The earlier study Revised Amended Alternatives Analysis (The Sammis Company, 1991, Figure B-6) identified and analyzed site No. 18 in the Elk Grove-Vineyard area. This site is located well beyond the commute shed for the Cordova/Sunrise employment center and will not be considered further in this analysis. The site is noted in Figure 4, Section 3.





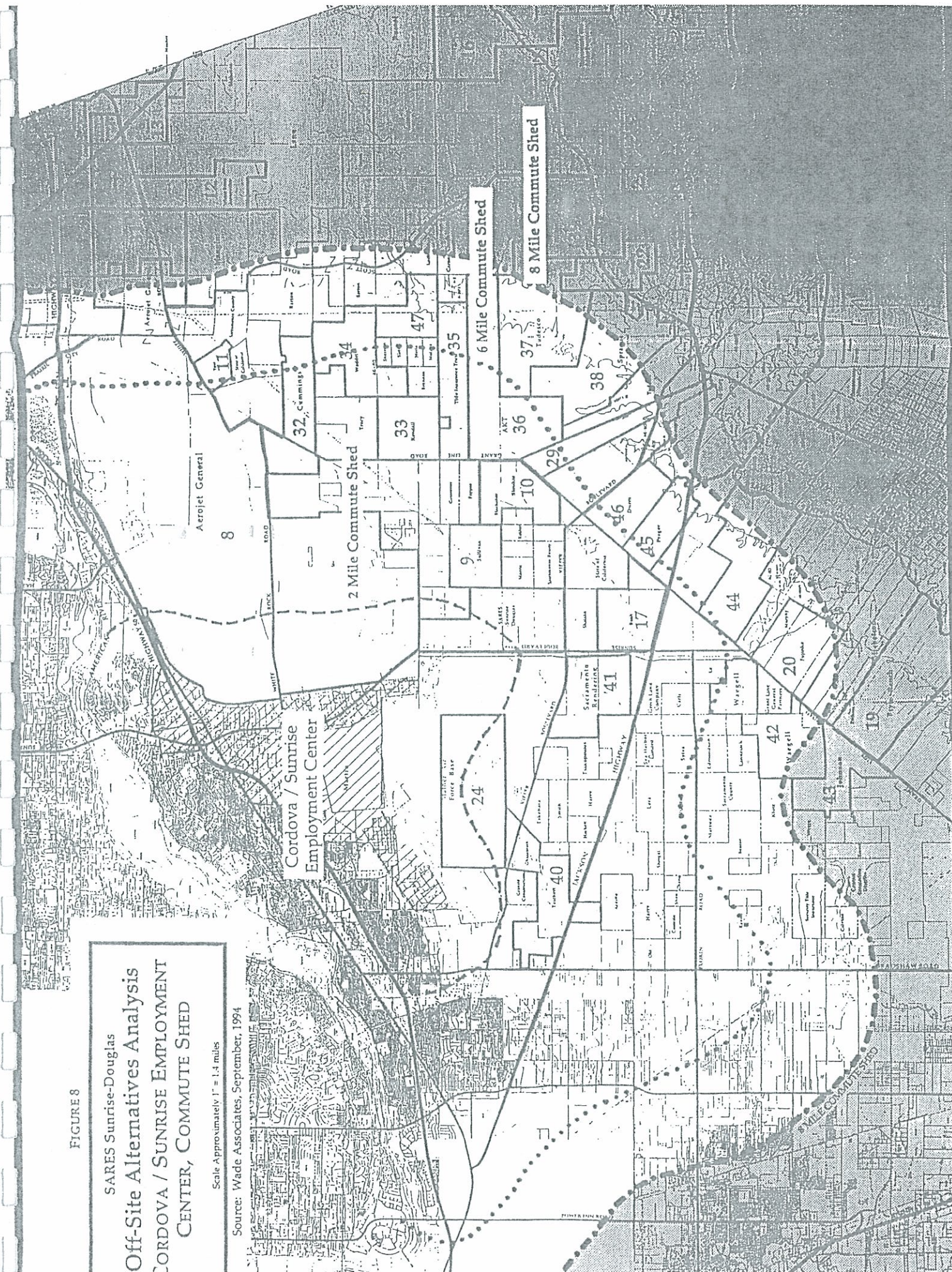






SARES Sunrise-Douglas  
Off-Site Alternatives Analysis  
CORDOVA / SUNRISE EMPLOYMENT  
CENTER, COMMUTE SHED

Source: Wade Associates, September, 1994





## 7. CRITERION 3

### POTENTIAL AS A MASTER PLANNED COMMUNITY

The term Master Planned Community, or "new community" is generally applied to large, mixed use projects. The Urban Land Institute, one of the nation's leading authorities and publishers in the field of land development, defines new communities as development projects that are:

- large scale;
- programmed to contain a balanced mix of land uses;
- controlled by a master developer; and
- master planned early in the development process.

Further, new communities,...*"typically plan for multi-family and single family housing within broad price ranges, from starter houses to housing for empty nesters, ..., shopping centers, and an array of recreational uses.... Because they are planned and developed by a master developer, new communities are able to avoid the lack of overall physical unity, poorly defined edges, a transportation system lacking in hierarchy and identifying graphics, nonexistent pedestrian links, few open spaces, inward focuses sites, and little sense of community or public life."* Urban Land Institute, Developing Successful New Communities, 1991.

These criteria for a master planned community clearly support the need for a large project under the control of a single master developer. Such an approach is difficult, if not impossible, in a setting of small, multi-ownership parcels. The parcelization pattern throughout Sacramento County south of the American River was reviewed through examination of the Sacramento County Assessor Parcel Maps. The study area encompasses a substantial territory of several thousand acres, however, much of the area is fragmented in small parcels and individual home sites that are not appropriate for urban development. Throughout much of the study area the land has been subdivided in homesites or ranchettes of less than 20 acres. In many areas the homesites are two to ten acres. In this pattern of development the basic water and sewer services are provided by on-site wells and septic tanks and leach field systems. Such service is not adequate to support urban development to the level that is required to accommodate the population forecast for Sacramento County.

Although there is no set criteria to define the size of a Master Planned Community there are local indicators which can be used to approximate the size of parcel which is necessary to achieve the characteristics that define master planned community and the proposed overall project purpose. In the Sacramento Metropolitan region there have been many projects proposed and/or developed since 1978 that fit the profile of master planned communities. A review of these communities provides an empirical data base on the appropriate size of a master planned or "new" community. The data summarized in Table 3 indicates that the master planned communities range in size from 401 acres to 4,868 acres.

Table 3  
Summary of Master Planned Communities  
in the Sacramento Region 1978-1993

	Master Planned Community	Jurisdiction	Total Acreage
A.	Eastridge	Lincoln	401.0
B.	Natomas Station	Folsom	483.2
C.	Broadstone III/Elliott	Folsom	569.0
D.	Elliott Ranch	Sacramento	628.0
E.	Eastlake Specific Plan	Lincoln	826.8
F.	Northwest El Dorado Hills Specific Plan	El Dorado County	915.5
G.	Southeast Roseville Specific Plan	Roseville	946.6
H.	Laguna West	Sacramento	1,033.2
I.	Lincoln Crossing	Lincoln	1,069.9
J.	Del Webb Specific Plan	Roseville	1,200.0
K.	Sunrise Douglas SARES Project	Sacramento	1,225.5
L.	Northeast Roseville Specific Plan	Roseville	1,534.4
M.	Russell Ranch	Folsom	1,790.9
N.	North Central Roseville Specific Plan	Roseville	1,816.8
O.	Antelope Community Plan	Sacramento	2,274.6
P.	Northwest Roseville Specific Plan	Roseville	2,648.5
Q.	Stanford Ranch	Rocklin	3,244.9
R.	El Dorado Hills Specific Plan	El Dorado	3,896.0
S.	Twelve Bridges	Lincoln	4,868.0

The smaller projects listed in Table 2 are actually elements of larger projects. They are more appropriately considered phases of master planned communities rather than distinct projects in their own right.

Based on the empirical data on master planned projects in the Sacramento region it is concluded that no single property, or adjacent properties under a single ownership, smaller than 400 acres will be practicable for meeting the overall project purpose of a viable master planned community with affordable housing.

#### 7.1 Sunrise-Douglas Project

The Sunrise-Douglas project consists of 1,225 acres.

#### 7.2 Alternative Sites

The earlier studies (SARES•REGIS Group, 1994) identified seven sites (designated Nos. 1, 2, 5, 6, 11, 18 and 23) that are too small to be considered further. Moreover, these sites are beyond the 8-mile commute shed for the Cordova/Sunrise employment center. Figures 9 and 10 illustrate all other parcels in or near the 8-mile commute shed that meet the minimum size threshold of 400 acres. Alternative site 47 is 480 acres in size. However, approximately 105 acres of the site fall within the FEMA floodplain leaving only 375 acres for development. It has therefore been eliminated as a viable alternative site.



FIGURE 9

SARES Sunrise-Douglas  
Site Alternatives Analysis  
ALTERNATIVE SITES

Scale Approximately 1" = 1.4 miles

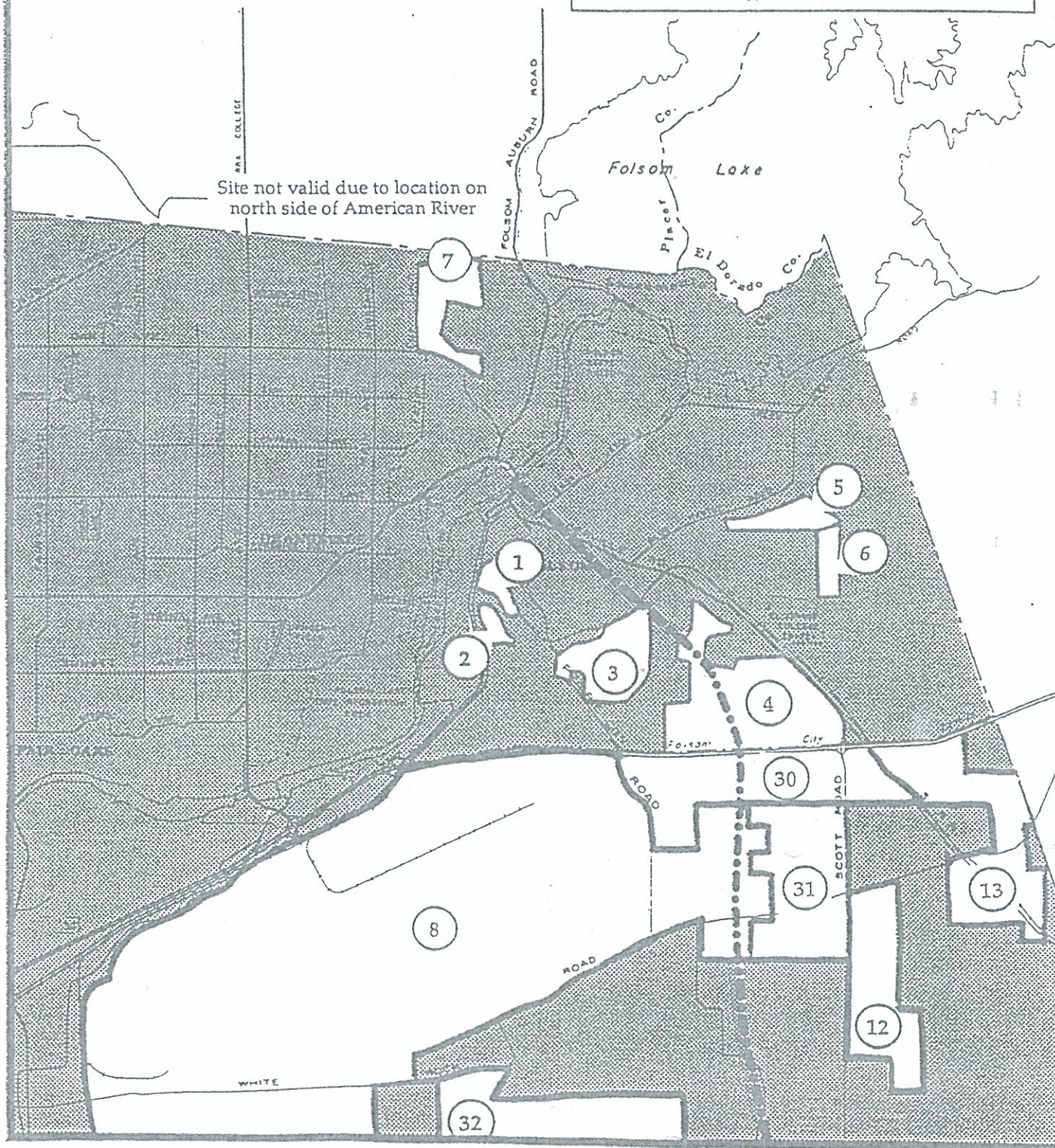




FIGURE 10

SARES Sunrise-Douglas  
Off-Site Alternatives Analysis  
**FOLSOM ALTERNATIVE SITES**

Scale Approximately 1"=1.4 miles





8. CRITERION 4  
NOT AVAILABLE: PUBLIC LANDS

Land that was under public ownership was not an available site and is not further considered in this analysis.

8.1 Sunrise-Douglas Project

The Sunrise-Douglas project is not under public ownership.

8.2 Alternative Sites

There are several sites within the area owned by public agencies, including Sacramento County and the State of California, which are clearly not available and are not considered as alternative sites. For example, the Sacramento County Landfill site is within the commute shed and of appropriate size but as an active landfill is clearly not available. In the previous studies (SARES•REGIS, 1994) two sites were considered as potentially available because the future disposition was under study. Parcel 24 encompasses a portion of the aviation facilities in the former Mather Air Force Base. In 1989 when the Federal decision to close Mather AFB was made the ultimate disposition of the property was unknown and release for private development was a possibility. However, Parcel 24 is within the portion affected by the Sacramento County decision to retain the aviation functions of the former base and this parcel is not now and never has been available.

Parcel 29 is contiguous to the Sacramento County Landfill. It is marginally large enough to qualify as an alternative site, however, it was constrained by an irregular parcel configuration. It has been added to the landfill site and is not available. Under County policy, restricting residential use adjacent to the landfill, this site was not practicable.



## 9. CRITERION 5

### NOT AVAILABLE: DEVELOPED OR COMMITTED LAND

Potential alternative sites were considered to be not available in 1989 if they were:

- committed to an industrial use that is inherently incompatible with residential use;
- already developed or partially developed in a competing project; or
- under the control of a competing development interest and in the process of securing land development entitlements.

#### 9.1 Sunrise-Douglas Project

The Sunrise-Douglas project is not developed, nor is it committed for an incompatible industrial use.

#### 9.2 Alternative Sites

Incompatible Use:

The previous studies identified portions of the Aerojet General site as an alternative. The site, designated as Parcel 8 in this study was previously designated as Parcel Nos. 25, 26, 27, and 28 (Sammis Company, 1991). Although the long-term availability of this site is periodically the subject of speculation, it has been an active industrial site for approximately 30 years and remains so at this time. The substantial land area of this site relates to the need for broad safety zones around rocket testing facilities. The site is not available and was not available in 1989.

Parcels 32 and 40 have an active aggregate mining operation and are therefore committed to an incompatible industrial use. Parcel 41 encompasses the Sacramento Rendering Company plant. This rendering plant is an active industrial use that is not available. It has been operating at this location for approximately 30 years.

Committed to Development Under the Control of Competing Interests:

Land that was developed, or that had procured the necessary entitlements to develop, or were committed to incompatible industrial uses, were not considered as available. A site was also considered unavailable for development if it had already been granted building permit approval on the parcel, or the development on the parcel is presently underway, or about to begin.

Although such sites may fulfill the overall project purpose, they are typically under the control of a competing development interest and are not available for purchase at an economic price. The value added by the entitlement process enables the then current owner to demand a price far in excess of the other

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alternative sites. In effect the parcels approved for development fulfill a portion of the housing demand and are not an available alternative to fulfilling the portion of housing demand that would be met by the proposed site. The alternative sites identified in the previous studies, Parcel Nos. 3 and 4, were part of master planned communities under development or active planning entitlement processes by competing developer interests (Santa Fe Properties and Elliott Homes, respectively) in 1989 and were not available.



## 10. CRITERION 6 AGGREGATE RESOURCE AREAS

The Highway 50 corridor overlays an extensive aggregate resource area comprised of subsurface river rock or cobble that is used extensively in gravel and other building products.

Development can ultimately occur in these areas as the mining activity is concluded, or as seen in other areas of the county where previous gold mining activity has displaced, but not removed the cobble material. Consequently, this criterion is not an absolute constraint that would prohibit development but is an economic constraint that limits the feasibility of development. Moreover, Sacramento County policy limits the development of residential uses in the aggregate resource area because of the need to reserve the resource for future use. The Sacramento County General Plan designates areas where high quality construction aggregates are found and restricts development which precludes surface mining activities within these resource areas, stating that construction aggregates are of no less importance than wood or steel in building and construction (Sacramento County General Plan, 1985, Page 108). Figure 11, Aggregate Resource Zone, shows the location of these resources.

In cases where the land is clearly within the aggregate resource area and remains to be mined, it is considered not available. The time to complete mining operations and the cost of such operations makes it economically infeasible to utilize a site to fulfill the overall project purpose.

For this criterion a range of conditions is reflected in a numerical ranking scale. The numerical ratings appropriate to this criterion reflect the availability of a site for urban development:

<u>RATING</u>	<u>CHARACTERISTIC</u>
5	Site not located within an Aggregate Resource Area
3	Portion of site located within an Aggregate Resource Area
0	Site located within an Aggregate Resource Area

### 10.1 Sunrise-Douglas Project

The Sunrise-Douglas project is not located within an Aggregate Resource Area, and has accordingly been given a rating of 5.

### 10.2 Alternative Sites

Portions of alternative sites 8, 24 and 40 are located within the Aggregate Resource Area. Alternative site 24, Mather Air Force Base, was eliminated as a viable alternative site to the Sunrise-Douglas project because of public

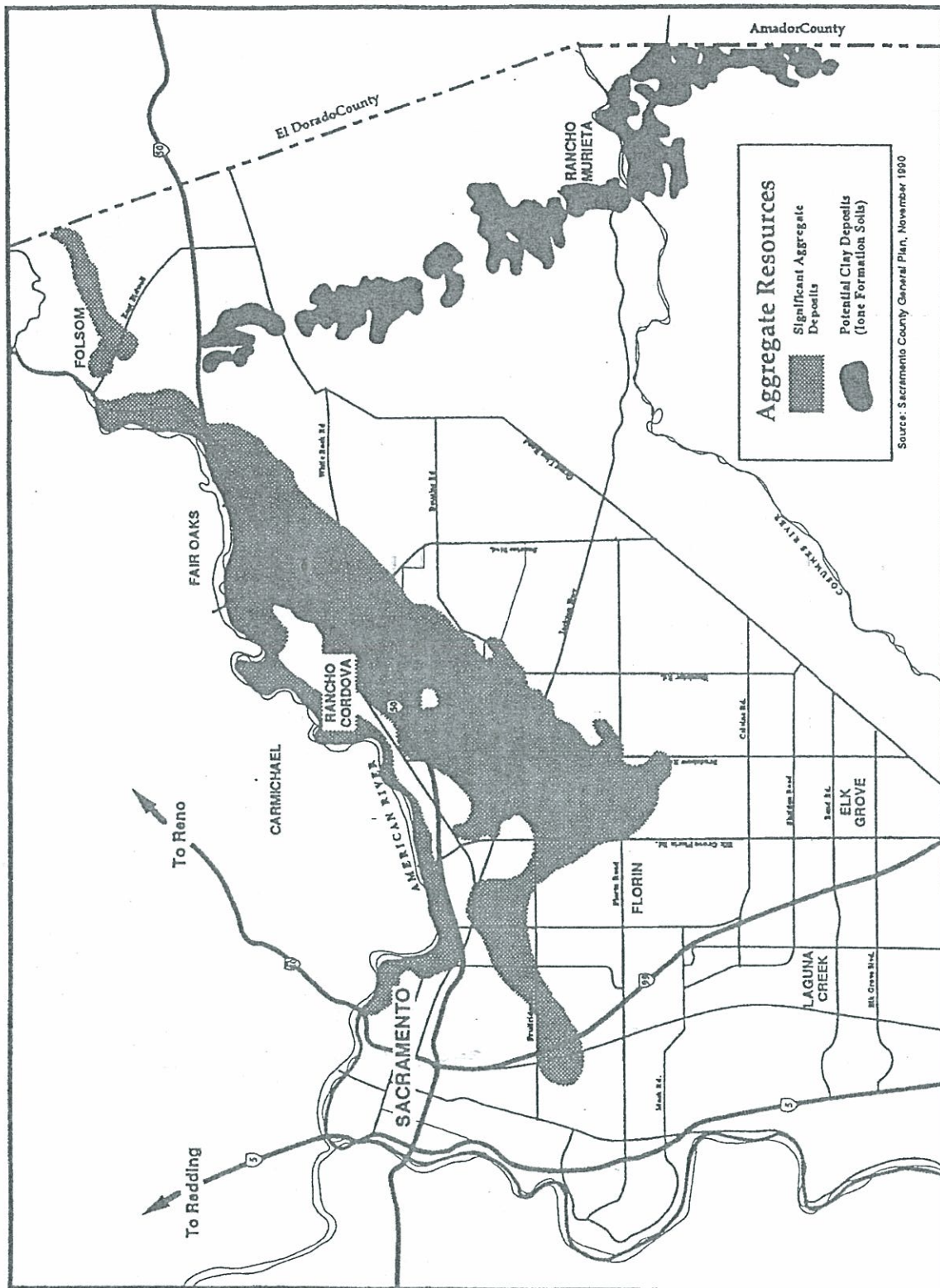
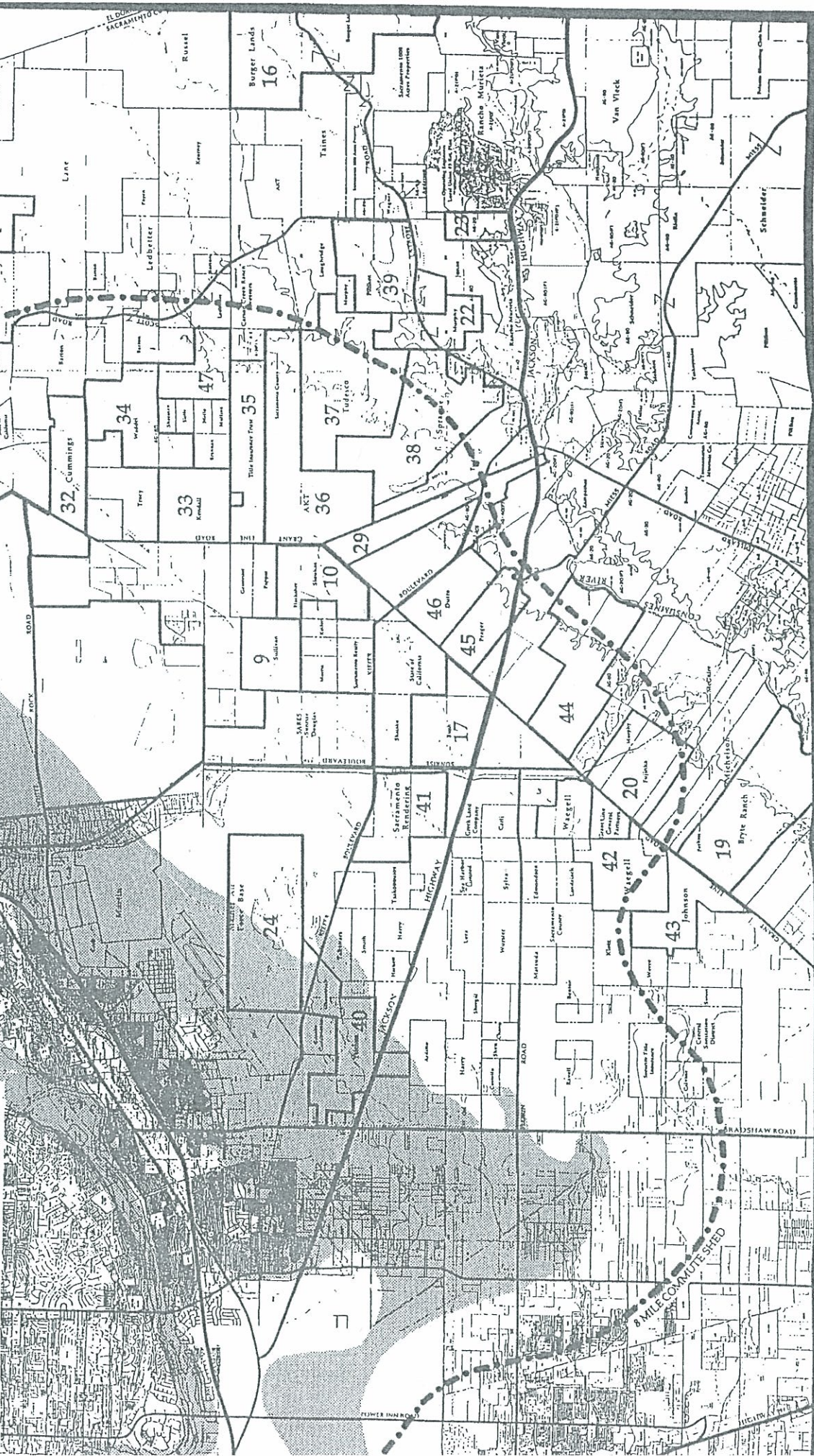


FIGURE 11  
AGGREGATE RESOURCE ZONE



SARES Sunrise-Douglas  
Off-Site Alternatives Analysis  
AGGREGATE RESOURCES

Source: County of Sacramento General Plan, November 1990





ownership. Sites 8 and 40 are committed to incompatible industrial uses. All other alternative sites are located outside the Aggregate Resource Area, and have accordingly been given a rating of 5.

## 11. CRITERION 7 MATHER AIR FORCE BASE FLIGHT ZONE

The Comprehensive Land Use Plan (CLUP) adopted by Sacramento County for Mather Air Force Base contains firm restrictions on land development in the area surrounding the Base. The CLUP is concerned with safety both for aircraft and people on the ground, and noise. The CLUP land development restrictions prohibit urban development within the designated area surrounding the Base. The various safety restrictions include:

- Single family or agricultural residential development only if the density is five acres or more.
- Disallowing a large concentration of people within the area, defined as a gathering of individuals in an area that would result in an average density of greater than 25 people per acre per hour during a 24-hour period.
- No high-intensity use or facilities, such as structured playgrounds, ballfields or picnic pavilions.

Noise is a significant factor with respect to residential uses and thus with respect to the feasibility of fulfilling the overall project purpose. Sacramento County policies restrict residential development within the 65 CNEL noise contour. A site or portion of a site falling under the 65 CNEL contour would be considered unsuitable for residential use and site would be entirely or partially infeasible. The numerical ratings appropriate to this criterion reflect the availability of land for residential development. If land is currently within the 65 CNEL noise contour for Mather Air Force Base, that land is not available for residential development.

The significance of this criterion has diminished since 1989. With the closure of Mather AFB the military aircraft that generated the noise characteristics reflected in the current CLUP are no longer a factor. Consequently, these noise contours will be amended when the future level and type of aircraft activity at the former base is confirmed.

<u>RATING</u>	<u>CHARACTERISTIC</u>
5	Site located outside the 65 CNEL noise
4 <i>most outside</i>	contour
3 <i>~ 50%</i>	Portion of site located within the 65 CNEL
1-2 <i>most in</i>	noise contour
0	Site located within the 65 CNEL noise
	contour



---

### 11.1 Sunrise-Douglas Project

A portion of the Sunrise-Douglas project is located within the 65 CNEL noise contour for Mather Air Force Base, and has accordingly been given a rating of 3.

### 11.2 Alternative Sites

Alternative sites 20, 33, 34, 37, and 38 are located entirely outside the 65 CNEL noise contour, and have been given a rating of 5.

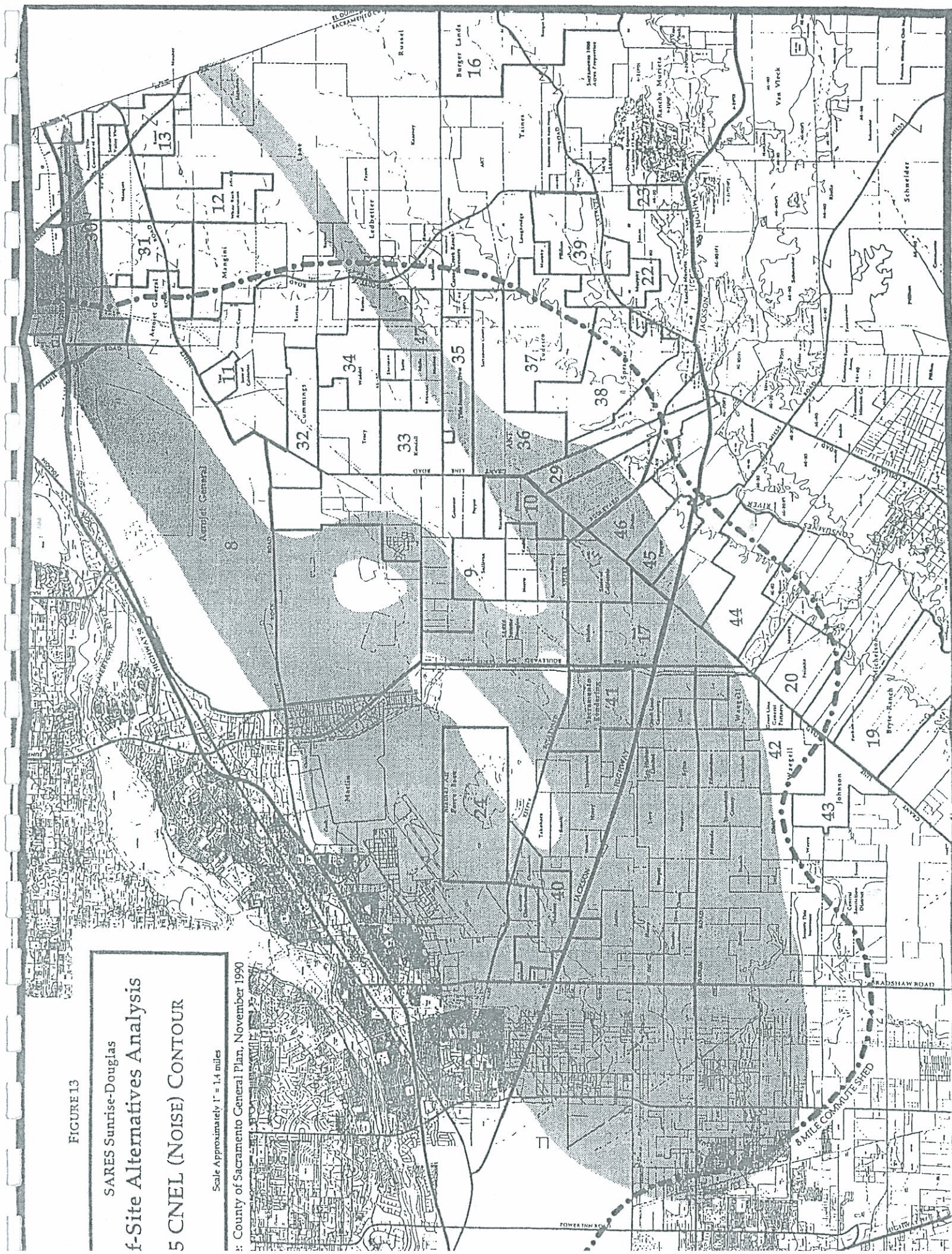
Alternative site 17 is located entirely within the 65 CNEL noise contour for Mather Air Force Base, and has accordingly been given a rating of 0.

Portions of all other alternative sites are located within the 65 CNEL noise contour.



SARES Sunrise-Douglas  
f-Site Alternatives Analysis  
5 CNEL (Noise) CONTOUR

Scale Approximately 1" = 1.4 miles





## 12. CRITERION 8 WILLIAMSON ACT CONTRACT

In 1969, Sacramento County first accepted applications for contracts under the California Land Conservation Act of 1965, commonly called the "Williamson Act". The purpose of the Williamson Act is to preserve agricultural land by creating property tax incentive to support continued use of lands for agricultural purposes. This is based on a change in assessment practices to allow the valuation of agricultural land to be based upon the use value for agriculture rather than the market value of the land.

A Williamson Act contract is initially written for a period of not less than ten years. It includes a clause that adds one year at each anniversary automatically extending the term of the contract. The effect is that the contract always has a term of 10 years, but can be terminated by the landowner or the County through filing a "Notice of Nonrenewal". Upon filing for nonrenewal, the contract remains in force for the balance of the initial term, 10 years. A property owner may request a cancellation of the Williamson Act contract with the concurrence of the county, however, the cancellation requires payment of a fee and payment of certain property taxes that have been avoided during the period of the contract.

The Williamson Act contract has the effect of delaying the time until development can occur or adding to the cost of the development through payment of fees and deferred property taxes. Such costs are substantial and have an effect on the economic feasibility of the project. The cost of the Williamson Act cancellation or the effect of time delay on the project diminishes as the period of time remaining under the contract declines.

The numerical ratings appropriate to this criterion reflect the availability of a site for urban development in the year 1989:

<u>RATING</u>	<u>CHARACTERISTIC</u>
5	Site not under Williamson Act contract
4	Nonrenewal filed by 1982 (three years left under contract)
3	Nonrenewal filed by 1984 (five years left under contract)
2	Nonrenewal filed by 1986 (seven years left under contract)
1	Nonrenewal filed by 1988 (nine years left under contract)
0	Site under Williamson Act contract

---

### 12.1 Sunrise-Douglas Project

The Sunrise-Douglas project is not under Williamson Act contract, and is accordingly given a rating of 5.

### 12.2 Alternative Sites

All alternative sites currently under Williamson Act contract are shown on Figure 14.

A nonrenewal was filed in 1987 for alternative site 17, and it has accordingly been given a rating of 1. A nonrenewal was filed for alternative site 20 in 1986, and it has therefore been given a rating of 2. A nonrenewal was filed for alternative site 34 in 1993. Therefore, this site has been given a rating of 0.

All other alternative sites currently under Williamson Act contract have been given a rating of 0.

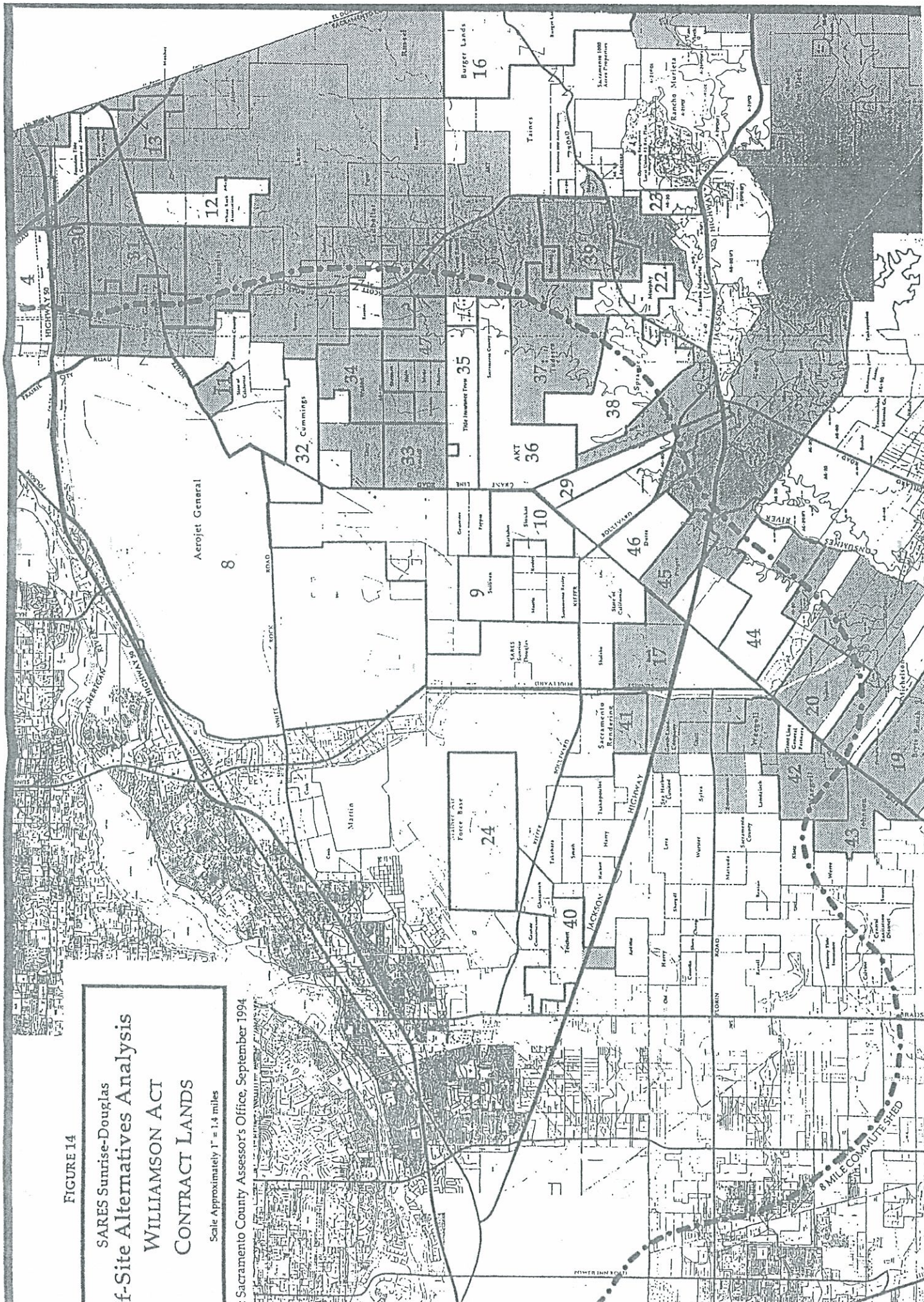


FIGURE 14

SARES Sunrise-Douglas  
f-Site Alternatives Analysis  
WILLIAMSON ACT  
CONTRACT LANDS

Scale Approximately 1" = 1.4 miles

Sacramento County Assessor's Office, September 1994





### 13. CRITERION 9

#### **COST TO ACCESS SEWER AND WATER INFRASTRUCTURE**

The availability of basic municipal infrastructure, including water and sewer, is fundamental to the economic viability of a development project. If the services are not immediately adjacent to a development site they must be provided by extending existing pipes and roads to the site. The cost of these improvements is often a critical cost in the development of master planned communities. It is assumed that the basic capacity of the water supply system and wastewater treatment plant capacity is equally available to all alternative sites. The distance from existing sewer and water lines and major streets is a good surrogate for estimating the cost and thus, the feasibility of development.

The extension of water service costs is difficult to analyze for all sites throughout the south and east portions of Sacramento County. The source of water supply is under study and several source strategies are being considered. In the absence of a clear strategy for water supply it is not possible to determine the location of the water supply and thus, how far and from which direction the water pipeline will extend. Consequently, it is not possible to evaluate the relative cost of water service for each of the alternative sites.

In contrast, the sewer service is well defined. Wastewater treatment will be provided for all of the alternative sites at the Sacramento County Regional Wastewater Plant near Freeport. Since all sites must be sewerered generally to the west it is possible to use distance as a surrogate for cost of municipal wastewater service.

In 1974, sewer services throughout Sacramento County were consolidated. The County-wide interceptor system and the operation of the Regional Wastewater Treatment Plant are the responsibility of the Sacramento Regional County Sanitation District (SRCSD). The Sphere of Influence (SOI) of the SRCSD, delineated on Figure 15, Sewer Sphere of Influence Boundary, is a good indicator of the availability of sewer lines because extension of sewer lines to serve new development requires expansion of the County Sanitation District. Properties must be within the Sphere of Influence boundary prior to annexation to the district and extension of sewer lines. In the absence of such an expansion, connection to existing systems is not possible, and small expansions that by-pass closer properties contradict County policies, as well as those of the Sacramento County Local Agency Formation Commission. Consequently, small, incremental expansions of basic urban services are not feasible.

The numerical ratings appropriate to this criterion reflect the potential for future extension of sewer infrastructure. The ratings are based upon a site's location relative to the SRCSD's Sphere of Influence as a measurement of availability of sewer service:



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RATING

CHARACTERISTIC

5	Site within 1 mile of the Sacramento Regional County Sanitation District (SRCSD) Sphere of Influence
4	Site within 2 miles of the Sacramento Regional County Sanitation District (SRCSD) Sphere of Influence
3	Site within 3 miles of the Sacramento Regional County Sanitation District (SRCSD) Sphere of Influence
2	Site within 4 miles of the Sacramento Regional County Sanitation District (SRCSD) Sphere of Influence
1	Site within 5 miles of the Sacramento Regional County Sanitation District (SRCSD) Sphere of Influence
0	Site beyond 5 miles of the Sacramento Regional County Sanitation District (SRCSD) Sphere of Influence

**13.1 Sunrise-Douglas Project**

The Sunrise-Douglas project is adjacent to the Sacramento Regional County Sanitation District (SRCSD) Sphere of Influence boundary, and has accordingly been given a rating of 5.

**13.2 Alternative Sites**

The locations of alternate sites 37 and 38 are between 4 and 5 miles from the SRCSD Sphere of Influence boundary, giving these sites the rating of 1.

Alternate sites 8, 17, 24, 40, and 41 are all located within one mile of the SOI boundary and have accordingly been given the highest rating of 5. However, Parcels 8, 24, 40 and 41 are not available and are not considered as alternative sites.

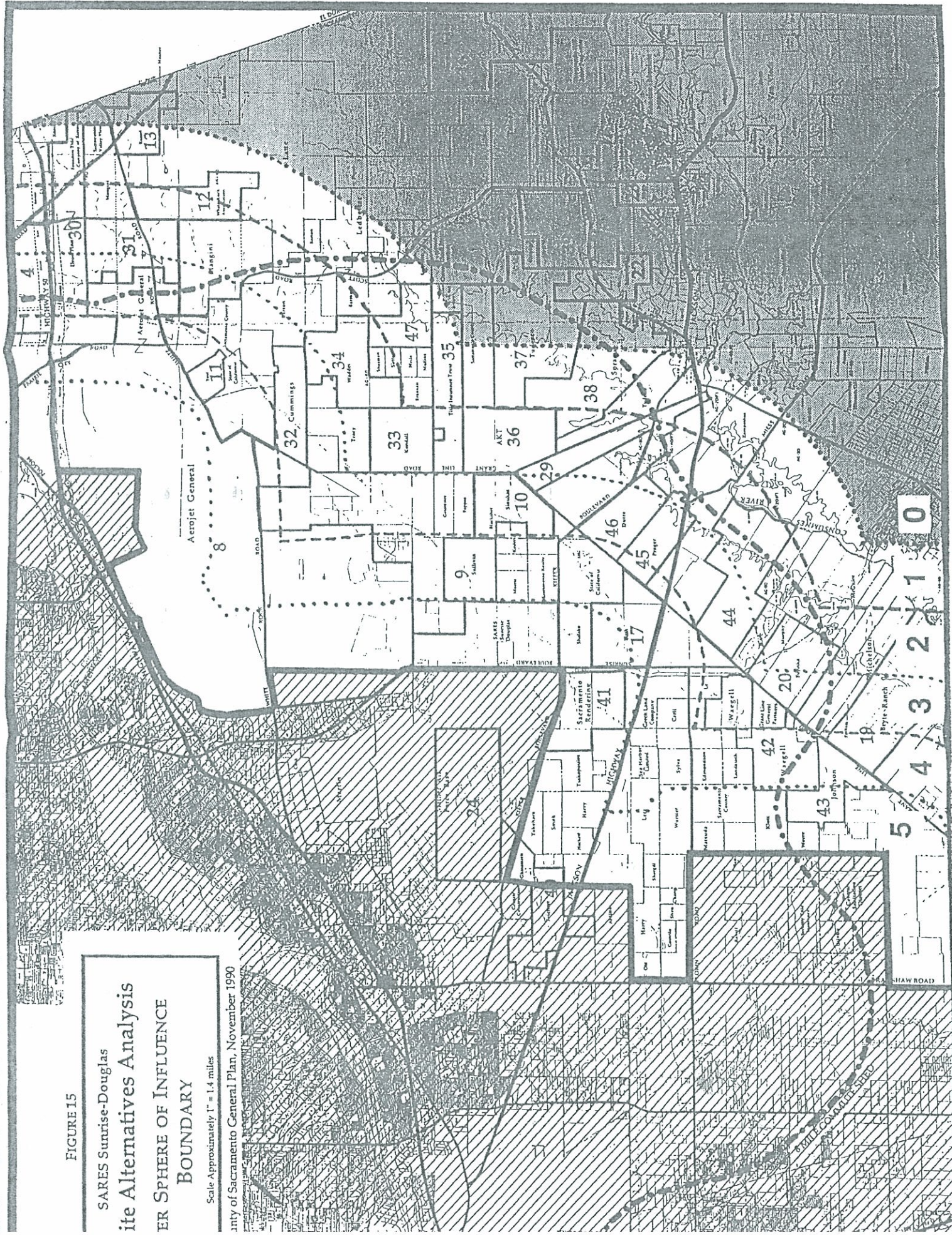


FIGURE 15

SARES Sunrise-Douglas  
ite Alternatives Analysis  
ER SPHERE OF INFLUENCE  
BOUNDARY

Scale Approximately 1" = 1.4 miles

nty of Sacramento General Plan, November 1990





## 14. CRITERION 10

### ACCESS TO FREEWAYS

Access to major arterial streets that lead to Highway 50 is an indicator of project feasibility. The substantial cost of extending major new roads to distant alternative sites, among other factors, can make it not practical to achieve the affordable housing component of the overall project purpose.

The cost of road access is determined by the actual conditions along the access routes including the miles of new road, miles of major improvement to existing county roads, the number of intersections, and the condition of the street system. Distance from the freeway (Highway 50) is used as a surrogate for the various conditions affecting access to each site. Distance from Highway 50 is the basic criterion, however, new roads are a significant cost that must be factored in the evaluation.

For this study it is assumed that Highway 50, Sunrise Boulevard and the Jackson Highway are the only existing major roads. Any property not directly fronting on one of these roads will require construction of a major new road or improvement of an existing road and is assessed a one point penalty in the rating. The distance from the freeway to each alternative site is shown on page A-6.

The numerical ratings reflect the increased cost of extending a major road to an alternative development site. The criterion is also consistent with the Sacramento County policy to reduce travel distances as described in Section 6.

<u>RATING</u>	<u>CHARACTERISTIC</u>
5	Site within 2 miles of a freeway
4	Site within 4 miles of a freeway
3	Site within 6 miles of a freeway
2	Site within 8 miles of a freeway
1	Site within 10 miles of a freeway
0	Site beyond 10 miles of a freeway

#### 14.1 Sunrise-Douglas Project

The Sunrise-Douglas project is within 4 miles of Highway 50, and has accordingly been given a rating of 4. Because the site has direct access to Sunrise Boulevard there is no penalty for requiring new roads.

#### 14.2 Alternative Sites

Alternate sites 9, 10, 34, and 37 will require construction of major new road extensions and/or the improvement of existing county roads.

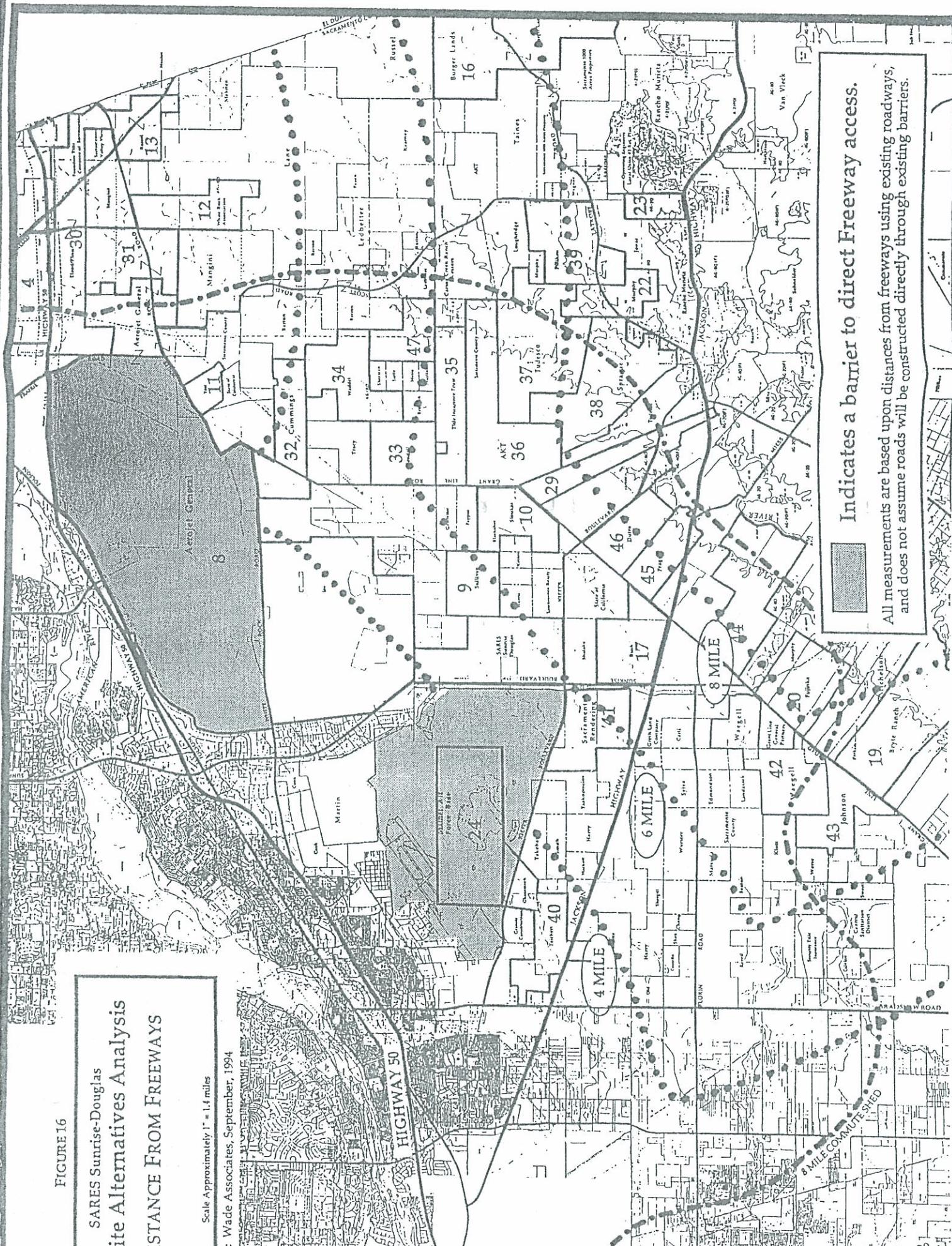


FIGURE 16

SARES Sunrise-Douglas  
ite Alternatives Analysis  
[STANCE FROM FREEWAYS

Scale Approximately 1" = 1.4 miles

: Wade Associates, September, 1994





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15. **CRITERION 11**  
**ECONOMIC FEASIBILITY AS A FUNCTION OF PARCEL  
SIZE**

To provide the support facilities and infrastructure that are necessary for a master planned community, a certain scale of development is required. The scale of the development must be sufficient so that the amortization of the cost of services does not make the cost of the housing unaffordable for households of workers employed in the area, thereby making the project "impracticable". Thus, a smaller parcel may allow residential development, but would not be feasible in terms of developing the mix of land uses and the scale of development necessary to achieve the project's overall purpose and economic viability.

In the post-Proposition 13 era, the majority of new urban development occurred in areas that already had basic urban services or in areas that were large enough to support the formation of the assessment districts or community facilities districts that would finance the necessary facilities. A certain minimum parcel size is necessary to support the expense of extending utility lines and constructing the facilities. The minimum size is a function of the cost of the facilities. Properties that are relatively small, and close to existing facilities may be able to support the cost of extending those facilities. However, small projects at some distance from existing facilities cannot absorb the cost and thus, would not be economically feasible.

As an example to illustrate this point, consider development of a master planned community of 7,000 dwelling units. Economy of scale would make one 7,000-unit project practicable in terms of the costs to provide necessary improvements. However, development of seven separate and dispersed projects of 1,000 dwelling units each would not constitute a master planned community. Such development would likely require significantly higher infrastructure costs to serve dispersed locations.

It is concluded that there are economies of scale and that larger projects are more likely to be able to spread basic infrastructure costs over a larger basis and will therefore be inherently more economically viable than a small project. However, the viability of a specific alternative site is dependent on a number of variables that are unknowable in the absence of a detailed cost analysis of each. This would require developing a conceptual land use plan and estimating cost to serve such a plan for each alternative site.

An analysis of the statistical distribution of the existing master planned communities according to size provides a general indicator of the appropriate size of a project and the range of feasibility. It is assumed that the larger number of projects in a size range is indicative of success in this type of project, or at least the perceived willingness of developers to acquire properties and undertake a project of this type.



The average size of all master planned communities approved and/or developed in the Sacramento area is 1,651 acres and the median is 1,200 acres. The standard deviation measures how widely size values are dispersed from the average size value of 1,651 acres. One standard deviation is 1,232 acres encompasses parcels ranging from 419 acres to 2,883 acres. It is interesting to note that this range encompasses the smallest projects, but not the very largest. This corresponds well to conclusion that the minimum parcel size for an economically feasible project is about 400 acres. One-half standard deviation, which indicates sites of size closer to the average size, includes sites ranging from 1,035 to 2,267 acres. This can be concluded to be the predominant size for a "typical" master planned community in the Sacramento region. It is assumed that the lower end of this range, about 1,000 acres, indicates the threshold for the ideal or most feasible master planned community. Projects larger than 1,000 acres are most likely to be economically feasible and those below, down to 400 acres, will be feasible, but less economically certain.

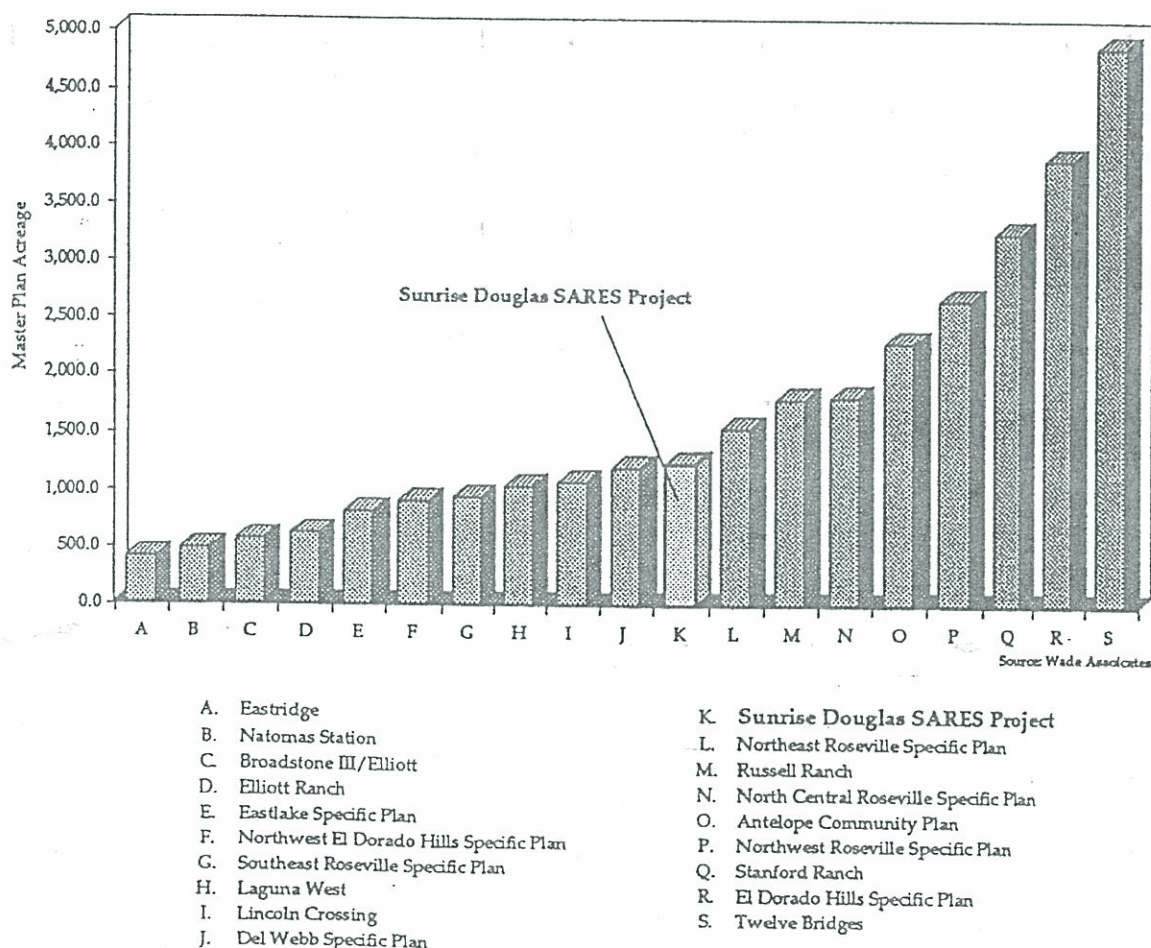


FIGURE 17  
SUMMARY OF MASTER PLANNED COMMUNITIES IN THE  
SACRAMENTO REGION



Consequently, the size of the project in acres as a surrogate for economic feasibility is the basis for a rating system for alternative sites.

<u>RATING</u>	<u>CHARACTERISTIC</u>
5	Site size is greater than 1,000 acres, and is controlled by a master developer
3	Site size is between 400 acres and 1,000 acres, and controlled by a master developer
0	Site size is less than 400 acres and is not controlled by a master developer

### 15.1 Sunrise-Douglas Project

The Sunrise Douglas project encompasses 1,225 acres and is slightly larger than the median size for all master planned communities in the Sacramento region.

### 15.2 Alternative Sites

There were alternative sites less than 400 acres which were identified in the two previous studies prepared by the applicant (The Sammis Company, Sunrise-Douglas Project Revised Amended Section 404 (b)(1) Alternatives Analysis, June 5, 1991 and SARES•REGIS Group, Sunrise-Douglas Project Supplemental Alternatives Analysis, January 18, 1994). However, all sites in the study less than 400 acres in size were determined to be not feasible in Criterion 3, and are not further evaluated in this criterion.

Alternative sites 36, 37, 38, 42, and 44 all exceed 1,000 acres in size, and have been given a rating of 5.

All other alternative sites are between 400 acres and 1,000 acres, and have accordingly been given a rating of 3.

16. CRITERION 12  
IMPACTS TO AQUATIC ECOSYSTEM

In order for a site to qualify as a less-damaging alternative to the Sunrise-Douglas project, it must be assessed that development of the alternative site would have less environmental impact on the aquatic ecosystem.

Wetlands of various types, including vernal pools, seasonally wet swales, channel and riparian areas, and impoundments are common in the Sacramento region. For the purposes of this study, an overview analysis of the wetlands status of the alternative sites was prepared by Sugnet & Associates. The summation of this analysis is a map, shown as Figure 18, which indicates that soils that would support wetlands are typical of much of Sacramento County and in particular, the area addressed in this study.

Sugnet & Associates analyzed the wetland constraints of each alternative site compared to the wetland constraints of the Sunrise-Douglas project. The comparison evaluated the extent of wetlands and the spatial arrangement of the wetland resources on each site. In addition to a wetlands analysis Sugnet & Associates also reviewed each alternative site utilizing (1) USGS Quads, (2) Corps photos, (3) USDA SCS soil survey for Sacramento County, (4) JSA Study, and (5) FEMA maps.

The numerical ratings assessed for this criterion reflect whether an alternative site is less constrained, similarly constrained, or more constrained than the Sunrise-Douglas site.

<u>RATING</u>	<u>CHARACTERISTIC</u>
5	Site is less constrained than the Sunrise-Douglas site
3	Site is similarly constrained as the Sunrise-Douglas site
0	Site is more constrained than the Sunrise-Douglas site

The rating of 5 for lower potential wetland impacts was assigned to sites that had:

- estimated wetland/waters impacts of project development of less than 10 acres.

The rating of 3 for similar potential wetland impacts was assigned to sites that had:

- wetland/waters impacts estimated to be more than 10 acres; AND
- significant areas of wetlands spatially arranged to promote preservation of wetlands.



The rating of 0 for greater potential wetland impacts was assigned to sites that had:

- wetland/waters impacts estimated to be more than 10 acres; AND
- no significant areas of wetlands spatially arranged to promote preservation of wetlands.

#### 16.1 Sunrise-Douglas Project

Wetlands and Waters of the U.S. on the Sunrise Douglas project site consist mainly of vernal pools, with some drainage channels, man-made canals, and man-made impoundments. The greatest concentration of vernal pools occurs in a dense band stretching in a northeast to southwest direction from the east-central project boundary to the intersection of Sunrise Boulevard and Kiefer Road. There are scattered pools in the northern portion of the project site, while the southeastern corner of the site has relatively few vernal pools.

The sunrise-Douglas site was assigned a wetland rating of 3.

#### 16.2 Alternative Sites

Since many of the alternate sites are on similar soils and have somewhat similar topography, the degree of wetland occurrence is similar to that of the Sunrise-Douglas site. Waters of the U.S. and wetlands found on alternate sites include vernal pools, drainage channels, and man-made impoundments.

Alternative sites 20, 34, 37, 42, and 45 have been given a rating of 5. It has been determined that development of these sites would have lower potential wetland impact than the Sunrise-Douglas site.

Alternate sites with a wetland constraint rating of 0 were those estimated to have wetland/waters acreage greater than 10 acres and that would also require high degrees of wetland impact for project development. Wetlands on these sites were typically distributed in such a way that most of the site was constrained by wetlands. The high wetland acreage and relatively uniform distribution further limited on-site preservation opportunities. Two alternate sites, sites 33 and 46, were assigned a 0 rating.

Development of all other alternative sites would result in potential wetland impacts similar to the Sunrise-Douglas site. These sites have therefore been given a rating of 3.



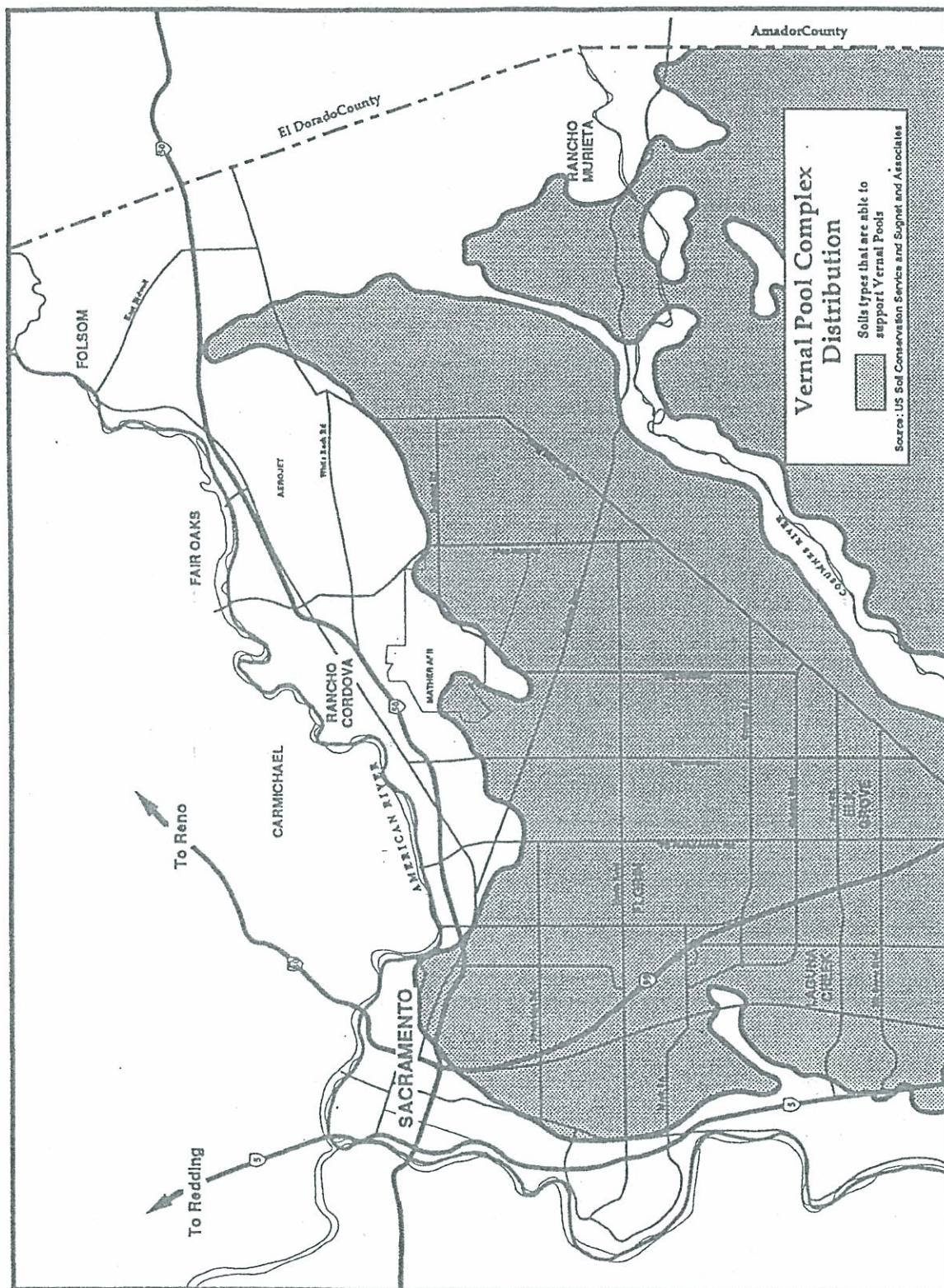


FIGURE 18  
WETLAND SOIL CONDITIONS IN THE SACRAMENTO REGION



FIGURE 19

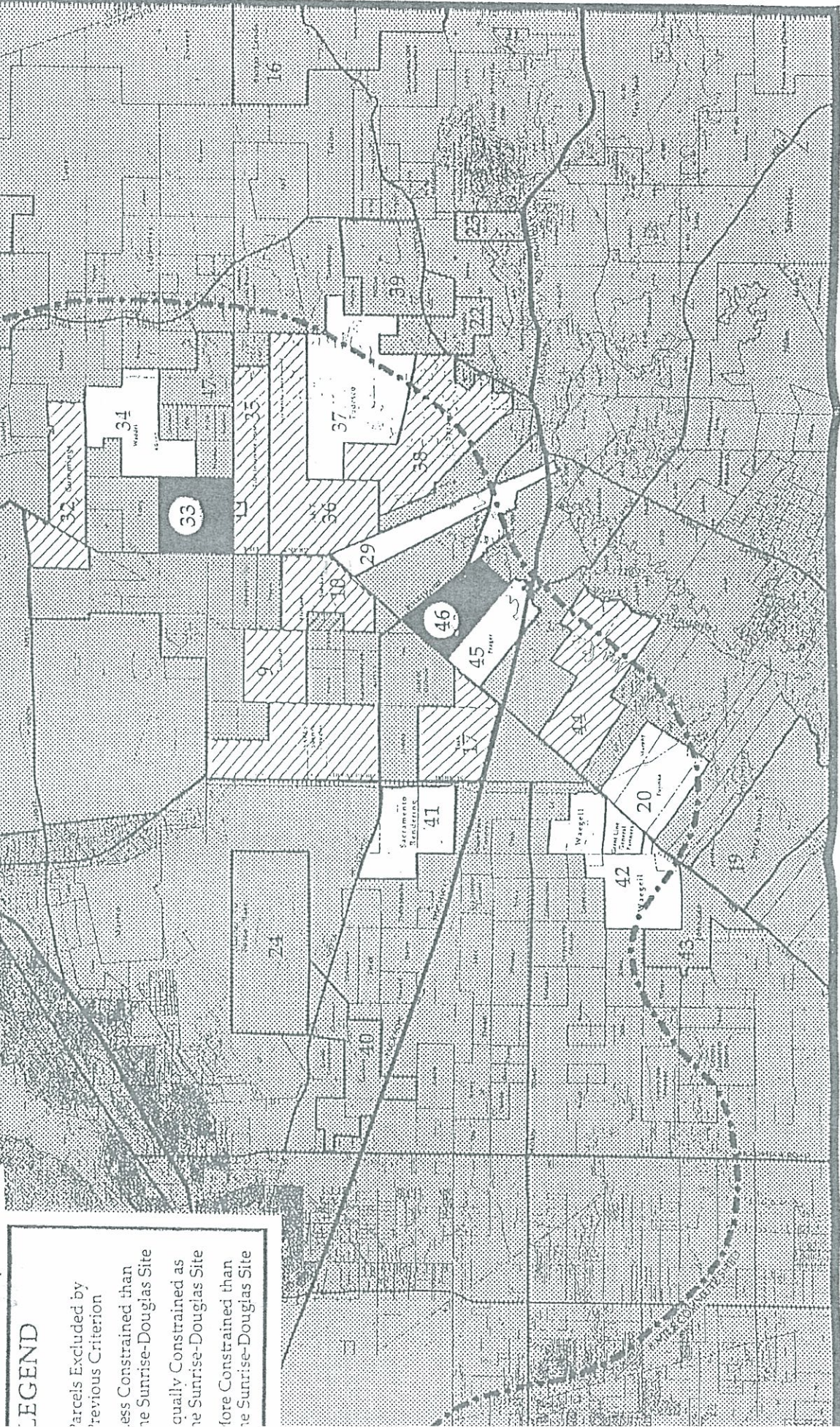
# SARES Sunrise-Douglas Alternative Analysis WETLAND RATINGS

Scale Approximately 1" = 1.4 miles

Sugnet & Associates, September 1994

## LEGEND

Parcels Excluded by  
Previous Criterion  
Less Constrained than  
the Sunrise-Douglas Site  
Equally Constrained as  
the Sunrise-Douglas Site  
More Constrained than  
the Sunrise-Douglas Site





## 17. CRITERION 13 ACCESS TO LIGHT RAIL

It is the policy of Sacramento County to reduce travel distances and reliance on the automobile and facilitate increased use of public transit through appropriate land use plans and regulations (Sacramento County General Plan, 1985; Policy 2.7.7, Page 23).

The feasibility of the light rail system depends on access from surrounding urban areas. The preferred access mode is bus, shuttles, bicycles or pedestrians. Automobiles are the least desirable due to congestion and air quality impacts. The distance rating criteria is based on the feasibility of alternative travel modes. The closer sites have the highest potential for bicycle/pedestrian access, the next closer sites will support short range shuttle service direct to the light rail station and the further areas can be supported by the public bus system.

Figure 20 shows the locations of existing and planned light rail lines within the study area. The delineated distances from these lines are considered a reasonable estimate of distances from rail line stations, given that the locations of future stations are unknown and assuming that stations are located at nearly equal distances along the line..

The numerical ratings appropriate to this criterion reflect County policy to reduce travel distances, and subsequent air quality degradation, through access to existing or planned light rail:

<u>RATING</u>	<u>CHARACTERISTIC</u>
5	Site within .5 mile (walking distance) of light rail
4	Site within 2 miles of light rail
3	Site within 4 miles of light rail
2	Site within 6 miles of light rail
1	Site within 8 miles of light rail
0	Site beyond 8 miles of light rail

### 17.1 Sunrise-Douglas Project

The Sunrise-Douglas project is within 4 miles of planned light rail, and has accordingly been given a rating of 3.

### 17.2 Alternative Sites

Eliminating the need for vehicular travel represents the best scenario for reducing air quality degradation through light rail. Therefore, the alternate sites



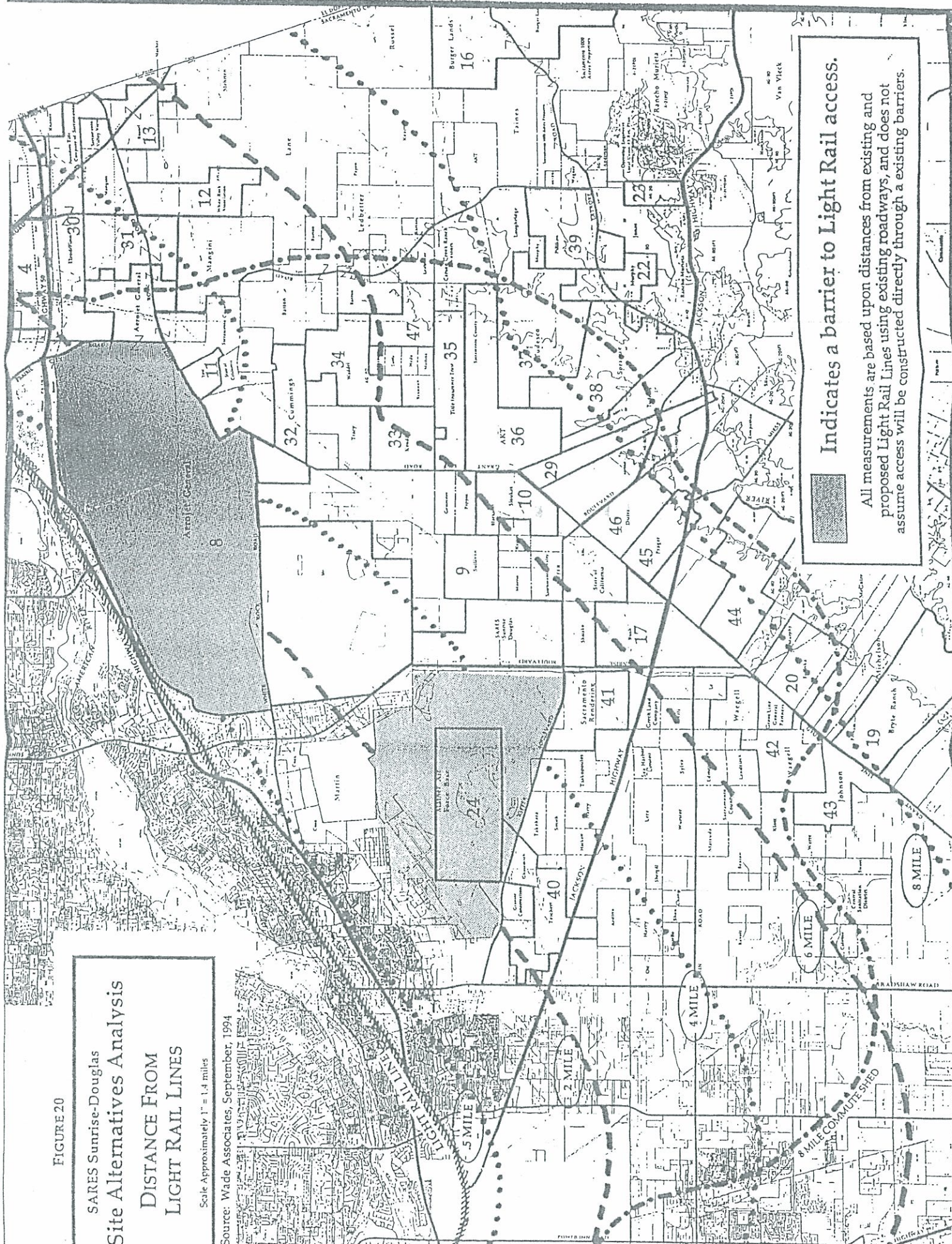
within walking distance (.5 mile) of existing or planned light rail are given the best rating of 5. The only alternative site within walking distance of existing or planned light rail is site 8, Aerojet General Corporation. This site is committed land, and has accordingly been eliminated as a viable alternative to the Sunrise-Douglas project.

The greater distance vehicles must travel to light rail is correlated to greater traffic congestion and air quality impacts. Alternative sites 20, 35-38, 42 and 44-46 are located between 6 and 8 miles from light rail, and have been given a rating of 1.



SARES Sunrise-Douglas  
Site Alternatives Analysis  
DISTANCE FROM  
LIGHT RAIL LINES

Scale Approximately 1" = 1.4 miles





18. CRITERION 14  
OAK WOODLANDS AND RIPARIAN ZONES

Sacramento County has identified Important Natural Areas, including oak woodlands and riparian zones, within the county. These delineated areas are considered primarily natural, as opposed to lands set aside primarily for human use (Draft Open Space Element of the County General Plan, November 1990, pages 23-24). Oak woodlands and riparian zones are shown on Figure 21. Figure 22 delineates the floodplain.

The numerical ratings appropriate to this criterion reflect avoidance of these natural areas:

<u>RATING</u>	<u>CHARACTERISTIC</u>
5	Site not located within important natural areas
3	Portion of site located within important natural areas
0	Sites located within important natural areas

18.1 Sunrise-Douglas Project

The Sunrise-Douglas project is not located within important natural areas, and has accordingly been given a rating of 5.

18.2 Alternative Sites

A significant portion of Parcel 30 is located within a designated oak woodland area and has accordingly been given a rating of 3.

Portions of alternative sites 35, 36, 37, 38, 44, and 45 are within the FEMA flood zone and have been given a rating of 3.

All other alternative sites are located predominantly outside important natural areas and have been given a rating of 5.











## APPENDIX A



### Alternative 1

45 acres	071 - 0020 - 008	14.6	no	Sacramento Properties	
	071 - 0180 - 002	0.5	no	Sacramento Properties	
	071 - 0180 - 003	0.7	no	Sacramento Properties	
	071 - 0180 - 024	0.3	no	Sacramento Properties	
	071 - 0180 - 025	0.3	no	Sacramento Properties	
	071 - 0180 - 026	28.5	no	Sacramento Properties	

### Alternative 2

92 acres	071 - 0020 - 009	128.3	no	Sacramento Properties	only part of parcel considered
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### Alternative 3

421 acres	072 - 0010 - 052	401.7	no	Santa Fe Enterprises	
	072 - 0010 - 004	18.8	no	Santa Fe Enterprises	

### Alternative 4

939 acres	072 - 0270 - 076	755.6	no	Elliot Homes	
	072 - 0270 - 078	0.8	no	Elliot Homes	
	072 - 0270 - 079	182.3	no	Elliot Homes	

### Alternative 5

182 acres	071 - 0060 - 013	155.0	no	Teichert	
	071 - 0400 - 038	55.0	no	Teichert	

### Alternative 6

133 acres	072 - 0800 (all)	39.8	no	subdivided	currently subdivided and developed
	072 - 0810 partial	53.0	no	subdivided	currently subdivided and developed
	072 - 0820 (all)	40.0	no	subdivided	currently subdivided and developed
	072 - 0830 (all)	39.7	no	subdivided	currently subdivided and developed

### Alternative 7

163 acres	227 - 0090 - 025	15.0	no	Elliot Homes	
	227 - 0090 - 039	7.7	no	Elliot Homes	
	227 - 0090 - 047	35.5	no	Elliot Homes	
	227 - 0090 - 048	35.8	no	Elliot Homes	
	227 - 0090 - 055	6.1	no	Elliot Homes	
	227 - 0090 - 056	13.8	no	Elliot Homes	
	227 - 0090 - 057	10.0	no	Elliot Homes	
	227 - 0090 - 058	7.5	no	Elliot Homes	
	227 - 0090 - 060	10.2	no	Elliot Homes	
	227 - 0090 - 061	6.1	no	Elliot Homes	
	227 - 0090 - 062	15.7	no	Elliot Homes	

### Alternative 8

12884 acres ♦	072 - 0060 - 029	783.8	yes	Aerojet Corporation	
	072 - 0060 - 007	30.0	no	Aerojet Corporation	
	072 - 0230 - 015	3960.0	no	Aerojet Corporation	
	072 - 0230 - 044	544.0	no	Aerojet Corporation	
	072 - 0230 - 012	1422.0	no	Aerojet Corporation	
	072 - 0230 - 013	57.0	no	Aerojet Corporation	
	072 - 0230 - 002	1707.0	no	Aerojet Corporation	
	072 - 0230 - 004	96.0	no	Aerojet Corporation	
	072 - 0230 - 011	148.0	no	Aerojet Corporation	

## Alternative 8 (continued)

072 - 0230 - 036	148.5	no	Aerojet Corporation	
072 - 0230 - 039	42.9	no	Aerojet Corporation	
072 - 0230 - 010	29.9	no	Aerojet Corporation	
072 - 0230 - 040	128.3	no	Aerojet Corporation	
072 - 0230 - 035	10.8	no	Aerojet Corporation	
072 - 0230 - 008	9.5	no	Aerojet Corporation	
072 - 0230 - 007	4.0	no	Aerojet Corporation	
072 - 0230 - 025	46.0	no	Aerojet Corporation	
072 - 0230 - 042	25.0	no	Aerojet Corporation	
072 - 0230 - 024	10.9	no	Aerojet Corporation	
072 - 0230 - 043	48.0	no	Aerojet Corporation	
072 - 0370 - 035	98.6	no	Aerojet Corporation	
072 - 0370 - 041	6.7	no	Aerojet Corporation	
072 - 0370 - 044	3526.7	no	Aerojet Corporation	

## Alternative 9

530 acres	067 - 0040 - 008	530.0	no	Sullivan	
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## Alternative 10

638 acres	067 - 0100 - 009	298.8	no	Sioukas	
	067 - 0100 - 003	118.8	no	Sioukas	
	067 - 0040 - 010	220.2	no	Sioukas	

## Alternative 11

211 acres	◆ 072 - 0100 - 029	211.1	yes	Yost	
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## Alternative 12

680 acres	072 - 0060 - 025	240.0	no	White Rock Assoc.	
	072 - 0110 - 037	440.0	no	White Rock Assoc.	

## Alternative 13

872 acres	072 - 0070 - 032	390.6	no	Founders Title	
	◆ 072 - 0070 - 021	295.8	app. 1990	Russel	application for nonrenewal filed
	◆ 072 - 0070 - 022	145.6	app. 1990	Russel	application for nonrenewal filed
	◆ 072 - 0070 - 019	40.0	yes	Founders Title	

## Alternative 14 &amp; 15

## Alternative 16

included in 35, 36, and 38

2763 acres	073 - 0060 - 006	320.0	no	Burger	
	073 - 0060 - 008	146.9	no	McCarty	
	073 - 0060 - 011	160.0	no	Burger	
	073 - 0060 - 012	320.0	no	Burger	
	073 - 0060 - 013	160.0	no	McCarty	
	073 - 0060 - 014	87.0	no	McCarty	
	073 - 0060 - 015	320.0	no	Burger	
	073 - 0060 - 021	622.4	no	Burger	
	073 - 0060 - 022	17.6	no	Burger	
	073 - 0090 - 007	80.0	no	Burger	
	073 - 0090 - 008	149.0	no	Burger	
	073 - 0090 - 012	65.0	no	Burger	
	073 - 0100 - 001	315.0	no	McCarty	



### Alternative 17

730 acres	◆ 067 - 0090 - 027	320.0	app. 1987	Bush	application for nonrenewal filed
	◆ 067 - 0120 - 008	304.4	app. 1987	Bush	application for nonrenewal filed
	◆ 067 - 0120 - 009	106.0	app. 1990	Bush	application for nonrenewal filed

### Alternative 18

Eliminated early

### Alternative 19

1591 acres	◆ 126 - 0040 - 007	188.5	app. 1989	Bryte Ranch Company	application for nonrenewal filed
	◆ 126 - 0040 - 010	160.5	app. 1989	Bryte Ranch Company	application for nonrenewal filed
	◆ 126 - 0040 - 011	425.7	app. 1989	Bryte Ranch Company	application for nonrenewal filed
	◆ 126 - 0040 - 012	195.8	app. 1989	Bryte Ranch Company	application for nonrenewal filed
	◆ 126 - 0040 - 013	204.7	app. 1989	Bryte Ranch Company	application for nonrenewal filed
	◆ 126 - 0040 - 019	415.6	app. 1989	Bryte Ranch Company	application for nonrenewal filed

### Alternative 20

942 acres	◆ 126 - 0050 - 001	182.0	app. 1986	Grant Line Gen. Partners	application for nonrenewal filed
	◆ 126 - 0050 - 050	385.7	app. 1986	Fujinaka	application for nonrenewal filed
	◆ 126 - 0050 - 060	47.0	app. 1988	Massie	application for nonrenewal filed
	◆ 126 - 0050 - 049	17.7	app. 1988	Murphy	application for nonrenewal filed
	◆ 126 - 0050 - 052	48.4	app. 1986	Blodgett	application for nonrenewal filed
	126 - 0050 - 079	114.0	no	McGuire	
	126 - 0050 - 080	20.0	no	Holt	
	126 - 0050 - 046	21.4	no	Folsom Canal	
	◆ 126 - 0050 - 077	6.3	yes	Murphy	
	◆ 126 - 0050 - 076	99.2	app. 1988	Murphy	application for nonrenewal filed

### Alternative 21

Part of Alternative 29

### Alternative 22

480 acres	073 - 0080 - 008	480.0	no	Murphy	
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### Alternative 23

222 acres	073 - 0080 - 026	54.1	no	Operating Engineers	
	073 - 0080 - 027	54.2	no	Operating Engineers	
	073 - 0080 - 028	54.2	no	Operating Engineers	
	073 - 0080 - 029	59.5	no	Operating Engineers	

### Alternative 24

1553 acres	067 - 0020 - 002	273.0	no	Mather (USA)	
	067 - 0020 - 007	640.0	no	Mather (USA)	
	067 - 0020 - 008	640.0	no	Mather (USA)	

### Alternative 29

680 acres	126 - 0090 - 001	97.0	no	Blawat	
	126 - 0090 - 002	432.1	no	Blawat	
	◆ 126 - 0090 - 022	150.4	yes	Blawat	

### Alternative 30

1015 acres	◆ 072 - 0060 - 036	168.8	yes	Elrod	
	◆ 072 - 0060 - 040	846.0	yes	Elrod	

Bk.	Pg.	Parcel	Acres	Williamson?	Owner	Notes
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#### Alternative 31

830 acres	◆ 072 - 0060 - 037	830.0	yes	Mangini	
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#### Alternative 32

867 acres	072 - 0100 - 021	139.5	no	Cummings	
	072 - 0100 - 022	167.2	no	Cummings	
	072 - 0100 - 016	404.9	no	Cummings	
	072 - 0100 - 017	155.0	no	Cummings	

#### Alternative 33

640 acres	◆ 073 - 0010 - 007	640.0	yes	Kendall	
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#### Alternative 34

897 acres	◆ 073 - 0010 - 006	497.0	app. 1993	Waddle	application for nonrenewal filed
	◆ 073 - 0010 - 008	160.0	app. 1993	Waddle	application for nonrenewal filed
	◆ 073 - 0020 - 001	240.0	app. 1993	Waddle	application for nonrenewal filed

#### Alternative 35

799 acres	073 - 0040 - 016	0.5	no	Title Ins.	
	073 - 0040 - 019	319.6	no	Title Ins.	
	073 - 0040 - 021	160.0	no	Title Ins.	
	073 - 0040 - 022	140.0	no	Title Ins.	
	073 - 0050 - 016	0.2	no	Title Ins.	
	073 - 0050 - 023	178.5	no	Title Ins.	

#### Alternative 36

1899 acres	073 - 0040 - 006	363.0	no	AKT	
	073 - 0040 - 013	580.9	no	AKT	
	073 - 0040 - 020	320.0	no	AKT	
	073 - 0040 - 023	316.4	no	AKT	
	073 - 0050 - 024	318.6	no	AKT	

#### Alternative 37

1527 acres	◆ 073 - 0040 - 014	480.0	yes	Tudesko	
	◆ 073 - 0050 - 007	601.6	yes	Tudesko	
	073 - 0050 - 017	11.4	no	Tudesko	
	◆ 073 - 0050 - 034	200.0	yes	Tudesko	
	◆ 073 - 0080 - 048	223.0	yes	Tudesko	
	◆ 073 - 0080 - 049	11.0	yes	Tudesko	

#### Alternative 38

1502 acres	073 - 0040 - 015	160.0	no	Sprague	
	073 - 0070 - 002	153.9	no	Sprague	
	073 - 0070 - 003	543.5	no	Sprague	
	073 - 0070 - 005	194.8	no	Sprague	
	073 - 0080 - 047	449.4	no	Sprague	

#### Alternative 39

941 acres	◆ 073 - 0050 - 028	330.9	yes	Pilliken	
	◆ 073 - 0080 - 003	610.0	yes	Pilliken	



Bk.	Pg.	Parcel	Acres	Williamson?	Owner	Notes
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#### Alternative 40

958 acres	063 - 0040 - 005	164.1	no	Teichert	
	063 - 0040 - 010	95.3	no	Teichert	
	063 - 0040 - 067	250.1	no	Teichert	
	063 - 0040 - 070	68.0	no	Teichert	
	063 - 0040 - 035	33.7	no	Teichert	
	063 - 0040 - 016	80.0	no	Teichert	
	063 - 0040 - 030	20.1	no	Teichert	
	063 - 0040 - 034	44.6	no	Teichert	
	063 - 0040 - 018	6.0	no	Teichert	
	◆ 063 - 0170 - 001	17.3	app. 1985	Teichert	application for nonrenewal filed
	◆ 063 - 0170 - 020	86.3	app. 1985	Teichert	application for nonrenewal filed
	067 - 0050 - 001	92.8	no	Teichert	

#### Alternative 41

803 acres	067 - 0090 - 002	24.1	no	Sacramento Rendering	
	067 - 0090 - 005	160.0	no	Sacramento Rendering	
	067 - 0090 - 019	123.6	no	Sacramento Rendering	
	◆ 067 - 0090 - 021	295.6	yes	Sacramento Rendering	
	067 - 0050 - 048	199.7	no	Sacramento Rendering	

#### Alternative 42

1127 acres	◆ 067 - 0110 - 020	40.0	yes	Waegell	
	◆ 067 - 0110 - 048	1.8	yes	Waegell	
	◆ 067 - 0110 - 049	37.3	yes	Waegell	
	◆ 067 - 0120 - 011	85.4	yes	Waegell	
	◆ 067 - 0120 - 013	75.4	yes	Waegell	
	◆ 067 - 0120 - 052	196.2	yes	Waegell	
	◆ 123 - 0030 - 002	1.6	yes	Waegell	
	◆ 123 - 0030 - 003	314.9	yes	Waegell	
	◆ 123 - 0040 - 001	281.3	yes	Waegell	
	◆ 123 - 0040 - 002	35.6	yes	Waegell	
	◆ 126 - 0050 - 002	40.0	yes	Waegell	
	◆ 126 - 0050 - 003	17.1	yes	Waegell	

#### Alternative 43

570 acres	◆ 123 - 0050 - 001	415.0	yes	Johnson	
	◆ 123 - 0020 - 002	155.1	yes	Johnson	

#### Alternative 44

1231 acres	126 - 0060 - 030	56.0	no	Rooney	
	126 - 0060 - 031	78.5	no	Rooney	
	126 - 0060 - 032	115.9	no	Rooney	
	126 - 0060 - 033	104.5	no	Rooney	
	126 - 0060 - 003	507.2	no	Rooney	
	◆ 126 - 0060 - 006	369.0	yes, partial	Rooney	excludes 158 acres from Williamson Act

#### Alternative 45

434 acres	◆ 126 - 0080 - 001	434.1	yes	Prager	
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#### Alternative 46

550 acres	126 - 0080 - 002	550.0	no	Dutra	
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#### Alternative 47

480 acres	◆ 073 - 0020 - 015	480.0	yes	VanVleck	
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## Scoring of Distance to Freeway

Route from freeway to nearest corner of parcel								scoring	
parcel	existing major roads	roads to be improved or upgraded	new road, including acquisition of land	exst. miles	imp. miles	new miles	raw miles	distance score (points)	with new road penalty
Sunrise Douglas	3.9 miles Sunrise Blvd	none	none	3.9	0.0	0.0	3.9	4	4
9	3.9 miles Sunrise Blvd	1.0 mile Douglas Rd	1.0 mile new	3.9	1.0	1.0	5.9	3	2
10	3.9 miles Sunrise Blvd	2.0 miles Douglas Rd	1.0 mile new	3.9	2.0	1.0	6.9	2	1
17	6.7 miles Sunrise Blvd	none	none	6.7	0.0	0.0	6.7	2	2
20	9.0 miles Sunrise Blvd, 0.2 miles Grant Line	none	none	9.2	0.0	0.0	9.2	1	1
30	0.0 miles from freeway	none	none	0.0	0.0	0.0	0.0	5	5
33	3.9 miles Sunrise Blvd	3.0 miles Douglas Rd, cross Grant Line	none	3.9	3.0	0.0	6.9	2	2
34	3.9 miles Sunrise Blvd	3.0 miles Douglas Rd, 0.2 mile Grant Line Rd	1.0 mile new	3.9	3.2	1.0	8.1	1	0
35	3.9 miles Sunrise Blvd	3.0 miles Douglas Rd, 0.4 mile Grant Line Rd	none	3.9	3.4	0.0	7.3	2	2
36	3.9 miles Sunrise Blvd	3.0 miles Douglas Rd, 0.9 mile Grant Line Rd	none	3.9	3.9	0.0	7.8	2	2
37 a.	3.9 miles Sunrise Blvd	3.0 miles Douglas Rd, 1.3 mile Grant Line Rd	1.0 mile new	3.9	4.3	1.0	9.2	1	0
37 b.	7.6 miles Sunrise Blvd, 5.4 miles Jackson Hwy	1.2 miles Latrobe Rd	0.5 miles new	13.0	1.2	0.5	14.7	0	0
37 c.	2.0 Prairie City Rd	0.5 miles White Rock, 5.9 miles Scott Rd	1.0 mile new	2.0	6.4	1.0	9.4	1	0
38	7.6 miles Sunrise Blvd, 5.4 miles Jackson Hwy	0.6 miles Latrobe Rd	none	13.0	0.6	0.0	13.6	0	0
42	9.0 miles Sunrise Blvd, 0.2 mile Grant Line	none	none	9.2	0.0	0.0	9.2	1	1
44	9.0 miles Sunrise Blvd, 0.2 mile Grant Line	none	none	9.2	0.0	0.0	9.2	1	1
45	7.6 miles Sunrise Blvd, 2.0 miles Jackson Hwy	none	none	9.6	0.0	0.0	9.6	1	1
46 a.	7.6 miles Sunrise Blvd, 1.1 miles Jackson Hwy	1.0 mile Grant Line	none	8.7	1.0	0.0	9.7	1	1
46 b.	7.6 miles Sunrise Blvd, 2.7 miles Jackson Hwy	none	0.3 miles new	10.3	0.0	0.3	10.6	0	0
46 c.	6.3 miles Sunrise Blvd	2.4 Miles Kiefer Rd, cross Grant Line	none	6.3	2.4	0.0	8.7	1	1

### Scoring Criteria

#### Simple Distance Scoring

5 points - within 2 miles of a freeway  
 4 points - within 4 miles of a freeway  
 3 points - within 6 miles of a freeway  
 2 points - within 8 miles of a freeway  
 1 point - within 10 miles of a freeway  
 0 points - over 10 miles from a freeway

#### New Road Penalty

minus 1 point if parcel requires new road construction of half mile or greater across adjoining parcel



## **Appendix B — Conceptual Strategy On-Site Minimization Measures for Arista del Sol**

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## APPENDIX B:

### Conceptual Strategy On-Site Minimization Measures for the Arista del Sol Project

The Conceptual Strategy was used to design and plan the Arista del Sol development and is intended to be used to aid the Agencies in the review of the proposed development and the evaluation of the probable individual and cumulative effects on aquatic resources and sensitive species. The ten strategy principles and standards for on-site minimization and mitigation are as follows:

1. *Maintain overall hydrologic integrity of the Preserve Areas so as to ensure that there will not be a net loss of functions and values in the preserve areas as a result of adjacent development.*

The sources of hydrology for the Arista del Sol Preserve (Preserve) are direct precipitation and surface and subsurface flows primarily from the contiguous preserve area associated with the Grantline 208 property to the north. A study that evaluated the hydrology of vernal pools in the Sacramento Valley (Hanes and Stromberg, 1998) was conducted on a nearby property that used a direct precipitation-evaporation model. This study concluded that direct precipitation was capable of filling the pools beyond capacity during most years. The study also concluded that, in most years, overland flow contributions are probably limited to periods when pools are already full, resulting in excess overland inflow into pools. However, although the watershed contributions might be considered minor from a volumetric perspective, water exchange between the pool and surrounding upland plays a major role in controlling water level relationships, and subsurface inflows tend to dampen water level fluctuations during the late winter and early spring.

To minimize impacts from the development of the Arista del Sol project, the Preserve is located in an area that receives overland and subsurface flow from a portion of the western half of the development area. As a result of the natural contours of the property, the eastern half of the property drains to the southeast, away from the preserve. From approximately the center of the property extending to the west, the topography slopes toward the Preserve. Various physical barriers (i.e., berms, curb and gutter, dikes) will be utilized to the maximum extent practicable to direct runoff associated with the development, especially in the normally dry months (i.e., April to October), into the storm drain system and away from the Preserve. However, during the wet months (i.e., October-April), water not collected in the storm water detention system may be diverted into the riverine systems located on and in the direct vicinity of the site. Storm water inputs into the storm drain system during the wet season are relatively large compared to other times of the year such that nutrient and sediment loads would be minimal, thereby minimizing impacts to the water quality associated with the riverine system discharges. Due to the fill of portions of the riverine seasonal



wetlands to the east that provide minor amounts of inflow into the Preserve, it is expected that the development of the western portion of the property adjacent to the Preserve will result in minor alterations to the distribution, frequency, and flows to the Preserve watershed area. However, these hydrologic alterations are considered very minor since, as designed, the Preserve will provide protection to the functions and values of the remaining watershed area of the Preserve, as the primary source of hydrology is direct precipitation and to a lesser degree surface and subsurface flow from the Grantline 208 Preserve to the north. Additionally, the relatively narrow area of land that would be developed directly south of the Preserve drains to the south and will not impact the hydrologic integrity of the Preserve. In summary, the development of the Arista del Sol property has been designed to utilize the topography and hydrology of the site so that the overall hydrologic integrity of the Preserve is maintained and to ensure there will not be a net loss of functions and values of the protected habitats.

2. *Maintain corridors and large areas for wildlife and the propagation of flora.*

The project site will preserve approximately  $\pm 41.1$  acres of the project site in a contiguous on-site open space/wetland preserve, which is part of the larger contiguous  $\pm 209$  acre Regional Preserve for the Sunridge Specific Plan Subarea (Figure 2, main document). This on-site preservation area will be protected under conservation easement in perpetuity funded by an endowment to provide monitoring, maintenance and management by a third-party to ensure resident populations of listed plants and invertebrates are sustained.

3. *Manage storm water flows to minimize changes to the existing flow regime and to maintain or improve existing water quality in the Preserve Areas.*

To minimize the impacts from development to the existing flow regime, the Preserve is located in an area that receives overland and subsurface flow from only a portion of the development area. As a result of the natural contours of the property, the eastern half of the property drains to the southeast, away from the Preserve, and the land developed immediately south of the Preserve will drain to the south. Additionally, various physical barriers (i.e., berms, curb and gutter, dikes, vegetated swales, etc.) will be utilized to the maximum extent practicable to direct urban runoff into the project's storm drain system.

A detention basin is part of the project design, and this basin will function to collect and retain storm water runoff from the project's storm drain system. The design of the detention basin includes a water quality basin that will allow for settling of any sediment, prior to discharging these waters off site.

The detention basin will discharge into a tributary of Laguna Creek and eventually into Blodgett Reservoir downstream. The outfall associated with the detention basin will be designed as a pipe discharge structure that will conform to existing slopes and include dissipation measures to reduce the potential for erosion.



4. *Use elevated roads, arched culvert crossings, and other practices for transportation corridors that must traverse Preserve Areas to the extent that is practicable to minimize direct and indirect impacts to aquatic resources in the Preserve areas and to avoid significant impacts to the functions and values of the Preserve areas.*

No transportation corridors traverse the Preserve. To minimize impacts to water quality within the Preserve, roads located adjacent to the Preserve will be designed to capture surface runoff through the project's storm drain system

5. *Use conservation design elements to minimize the effect of adjacent development on the Preserve Areas by constructing, to the extent practicable, single-loaded roads where housing directly abuts Preserve Areas, designing roadside landscaping to drain toward urban features and not towards Preserve Areas, and orienting houses so that the front living area faces the Preserve Area. Impervious surfaces will be minimized to the extent practicable and storm water/water runoff plans would be designed to use Best Management Practices (BMP's) such as vegetated swales, infiltration trenches, and constructed wetland filter strips to treat storm water runoff from the development areas.*

Consistent with strategy principle 5, the project had been carefully planned to minimize the effect of adjacent land use on the Preserve Area. The majority of the on-site preserve boundary is adjacent to landscape corridors and single-loaded roads. A landscape buffer of 40-ft is positioned between the Preserve and the proposed Americanos Boulevard that would run north/south along the eastern edge of the Preserve. A 30-ft landscape corridor is proposed between the commercial area, as well as the detention basin lot, and the Preserve. The southwestern portion of the boundary is adjacent to a single-loaded road with residential development. Single-loaded roads and landscape corridors adjacent to the Preserve will provide buffering by eliminating a row of housing on the Preserve side of the street. Americanos Boulevard, which would separate the Preserve from the residential area to the east, will provide surface water quality protection by capturing surface runoff and directing it into the project's storm drain system.

Coverage under the State Water Resources Control Board Order No. 99-08-DWQ National Pollutant Discharge Elimination System General Permit No. CAS000002 Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction Activity, as amended, (General Permit) will be obtained for this project prior to any land disturbing activities. A Storm Water Pollution Prevention Plan (SWPPP) will be prepared for the project in accordance with the General Permit requirements, and will also be prepared prior to any land disturbing activities. The SWPPP will identify:

- all pollutant sources;
- potential non-storm water discharges;

- details on an effective combination of erosion and sediment control Best Management Practices (BMPs) that will reduce or eliminate pollutants in storm water discharges;
- a maintenance schedule for the BMPs; and
- identify a sampling and analysis strategy and sampling schedule for discharges that have been discovered through visual monitoring to be potentially contaminated by pollutants not visually detectable in the runoff.

Temporary and permanent Best Management Practices that will be included in the SWPPP and implemented by the project proponent may include, but are not limited to:

- scheduling;
- utilization of silt fencing;
- hydroseeding and potential temporary irrigation (revegetation);
- stabilized construction entrances;
- equipment staging/maintenance areas;
- slope stabilization measures;
- straw wattles; and
- temporary storm water detention basin (designed to meet the requirements of Section A.8 of the General Permit).

To minimize the long-term effects of storm water pollution, runoff from urban development will be directed away from the Preserve and into the on-site storm drain system to the maximum extent practicable. Long-term storm water management will include, at a minimum, the operation and maintenance of BMPs to reduce pollutants in storm water discharges after all construction phases have been completed at the site (post-construction BMPs), and include the incorporation of storm drain filters in drop inlets. These BMPs will be identified in the Storm Water Pollution Prevention Plan (SWPPP), but will likely include periodic inspection and maintenance of storm drain filters. As designed, the on-site storm drain system will include an integrated mix of collection, treatment, and detention that will protect surface water quality and preserve the habitat values the Preserve is proposed to provide.

Development of a SWPPP is a requirement of the NPDES General Construction Storm Water Permit. The SWPPP will be developed to protect water quality from the hazards that construction activities may present. Post-construction BMPs described in the SWPPP will include, but will not be limited to:

- the minimization of land disturbance;
- the minimization of impervious surfaces;
- treatment of storm water runoff using infiltration;
- detention/retention;
- biofilter BMPs;



- use of efficient irrigation systems;
- ensuring that interior drains are not connected to a storm sewer system; and
- appropriately designed and constructed energy dissipation devices.

These must be consistent with all local post-construction storm water management requirements, policies, and guidelines.

The local agency responsible for storm water management (usually the City or County) in the project area may require additional post-construction BMPs, above and beyond the State and Federal requirements, prior to taking responsibility.

The proposed development of the Arista del Sol property also incorporates a developed drainage corridor that runs north to south along the eastern property boundary (Figure 6, main document). The purpose of the drainage corridor is to provide proper drainage of the project site so that storm water is directed away from the Preserve and into the on-site storm drain system to the maximum extent practicable.

Certified weed-free straw wattles will be installed at the base of all slopes adjacent to the Preserve, along detention pond perimeters, and along the property lines of the project site. Prior to installation of the straw wattles, a concave key trench approximately 2 to 4 inches deep will be contoured along the proposed installation route, and all installed straw wattles will be secured with stakes on alternating sides to prevent movement. Soil excavated for the trenching will be placed on the uphill or flow side of the straw wattles to prevent water from undercutting the straw wattles. The straw wattles will be maintained for a period of time at least until the annual grassland vegetation is fully established and the soil is stabilized.

During construction all excavated material will be deposited or stored such that material cannot be washed into any watercourse, and excess supplies of certified weed-free straw bales, wattles, and/or sedimentation fencing will be available on the construction site for periodic site-specific use as needed.

Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. No refueling, storage, servicing, or maintenance of equipment will take place within 100 feet of the open space preserve or adjacent off-site habitat. All machinery will be properly maintained and cleaned to prevent spills and leaks. A site-appropriate spill kit will be available within the staging area at all times so that any spills or leaks from the equipment or stored liquids can be immediately cleaned up and reported in accordance with applicable local, state and/or federal regulations.

All constructed slopes adjacent to the Preserve will be hydroseeded with a native annual grassland mix. The hydroseed mix will be applied with a tackifying agent.



at a rate of at least 2 tons/acre and based on manufacturer's recommendations. The tackifying agent will be a hydraulic matrix which when applied, and upon drying, adheres to the soil to form a 100% cover which is biodegradable, promotes vegetation, and prevents soil erosion. The hydroseed mix will not be applied before, during, or immediately after rainfall so that the matrix will have an opportunity to dry for at least 24 hours after installation. These constructed slopes may be temporarily irrigated, if necessary, to promote initial establishment, but native grasses will not require long-term irrigation, as they are adapted to the local climate.

To further minimize impacts to water quality, the project design includes bioswales to provide water treatment and thereby reduce sediment and nutrient loads.

6. *Locate compatible uses next to preserve areas (i.e., parks, hiking trails, athletic fields, and other open space areas) to the maximum extent practicable.*

A multi-use park is situated adjacent to the Preserve on the east side of Americanos Boulevard, and is separated from the Preserve by a single-loaded road and landscape corridor. No pedestrian trails or bike paths are proposed within the Preserve.

7. *Mow-only fire breaks may be located at the outer edges of Preserve Areas.*

If firebreaks are necessary at the outer edges of the Preserve, they will be mow-only, and not disced. The Sunridge Specific Plan Design Standards states that wildland fires will be controlled by providing access to open space for fire suppression, providing fire breaks along the edge of the open space and limiting combustible materials along the edge. If mowing activities are required within the Preserve, they will be conducted consistent with an agency-approved management plan, and in a manner that promotes native plants and discourages the establishment of non-native species. Any firebreaks that necessitate herbicide application, tilling, plowing, or other soil disturbance will be located outside the Preserve, and drainage from these areas will be directed away from the Preserve.

8. *Ensure Preserve Areas are protected in perpetuity.*

Consistent with the adopted Conceptual Preserve Design for the Sunridge Specific Plan Area, the Arista del Sol project includes approximately 41.1 acres of preserved open space located within the western half of the site. This Preserve will be placed into a conservation easement and funded via an endowment that will allow for maintenance and management of the Preserve in perpetuity by a conservation-oriented third party, and the Preserve parcel will be recorded under a distinct parcel number to distinguish it from the residential portion of the site. The management, maintenance, and monitoring requirements, allowances, and restrictions will be conducted in accordance with an agency-approved management plan.



Public access to the Preserve will be prohibited except as required by the Preserve Manager for monitoring and maintenance of vernal pools, drainage ditches, water quality ponds, detention basins, water pipelines, and fences. Grazing will be allowed within the Preserve as a method of thatch management, and grazing contractors will also be allowed access to the Preserve for fence maintenance, supplemental feeding/watering, etc necessary to maintain the health and security of the herd. Utility easement holders (e.g., to maintain power lines) will also be granted access to the preserve, but to the extent practicable motorized vehicle use within the Preserve should be minimized.

The perimeter of the Preserve will be fenced with barbed-wire. All fences will be marked periodically with interpretive signage indicating the sensitivity of the habitats and notice of restricted access. These signs will serve to remind the public that certain activities within the Preserve are prohibited, and may constitute a prosecutable offense. Prohibited activities within the Preserve will include trespassing, vandalism, illegal dumping, and motorized vehicle use. Signs will include a reference to the appropriate law enforcement codes and County ordinances. If the owner elects to graze the Preserve, and maintain the barbed-wire fences to control grazing, then installation of low split-rail shall be required only where there is no other fencing. Signs forbidding trespass shall be displayed at intervals not less than three to the mile along all exterior boundaries and at all roads, trails, or paths entering the Preserve. If the Preserve Manager determines that additional signs are necessary, more will be posted in appropriate locations.

**9. *Implement mitigation measures (avoidance, minimization, and compensation) that adequately offset direct and indirect impacts to aquatic resources and listed species.***

Consistent with principle 9, impacts to wetlands are minimized and compensated in part by the protected 41 acre on-site preserve. Impacts to preserve wetlands will be further minimized through the implementation of a mitigation monitoring and reporting plan. The mitigation monitoring and reporting plan includes the following measures to minimize impacts.

- a. Temporary high visibility fencing will be installed prior to construction along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto the Preserve or adjacent off-site habitat.
- b. An environmental monitor will be employed to ensure compliance with construction-related impact avoidance measures. The monitor will report directly to the City of Rancho Cordova Public Works project manager, and based on reports of non-compliance with environmental requirements, will be authorized to issue stop work orders and to take actions necessary to prevent damage to the Preserve and off-site habitat.
- c. Monitoring reports will be provided to the City of Rancho Cordova Department of Public Works project manager on a daily basis during



initial ground breaking, and on a weekly basis (or more frequently as needed when problems arise) thereafter until the Open Space Project construction is finished.

- d. Temporary impacts (e.g., utility trenching, temporary roads, etc.) will be immediately restored to pre-existing conditions by being temporarily stabilized, and then implementing long-term stabilization (i.e., revegetation).

The project proponents have proposed to utilize compensatory mitigation to address permanent direct and indirect impacts to waters of the U.S and wetlands that provide habitat for federally listed invertebrate species. Wetland mitigation will be provided through a combination of on-site preservation and acquisition of credits at an off-site wetland mitigation bank that will provide for no net loss in wetland habitat and preserve habitat needed to protect federally endangered species. In kind compensation at Agency-approved mitigation sites is proposed for direct impacts to vernal pools and wetland features linking vernal pools, considered as habitat for listed invertebrates by the U.S. Fish and Wildlife Service, at a ratio of 2:1 for preservation, and at a ratio of 1:1 for creation of habitat. Wetland compensation at a 1:1 ratio is proposed for the remaining wetlands needed to satisfy U.S. Army Corps of Engineers (Corps) mitigation requirements, and the applicant has proposed to purchase wetland credits.

*10. Recognize the realities and constraints placed on construction design due to infrastructure and market-driven forces by considering the costs of avoidance and mitigation measures and choosing measures that are the most cost effective way to achieve the long-term goal of maintaining the biological functions and values of the Preserve Areas.*

The on-site Preserve will be managed with attention to water quality, thatch management, and restricting public access. Thatch, or excess plant litter, prevents the growth of native vernal pool plants, can result in the invasion of undesirable non-native plant species, and can pose a significant fire hazard to project residences. To control thatch within the Preserve, one of three methods can be used: controlled burns, periodic mowing, and grazing. Controlled burns are not the preferred method to control thatch within the Preserve due to the danger of impacting adjacent residential developments. Periodic mowing will likely be required once every five years, and represents a viable option of thatch management. However, the preferred method of thatch managements is grazing, as this method would provide the greatest benefit to the biodiversity of the preserve, and would be the most economical.

Current land use within the Subarea Plan properties includes grazing, and it has been demonstrated that eliminating grazing activities results in both the invasion of exotic grasses and a reduction in species diversity within and around vernal pools. Moderate grazing has been proven to prevent the establishment or dominance of invasive non-native plant species, and if growth of thatch is left unchecked, it can outcompete and replace native species, including rare or special

status species that have the potential to occur within the Preserve. Seasonal grazing would only be allowed beginning November 1<sup>st</sup> and would not extend beyond May 1<sup>st</sup>, and the appropriate livestock removal time will vary annually according to site specific rainfall and weather conditions. Thatch management will also include monitoring of the success or failure of the prescribed management techniques. Communication with the grazing contractor to keep them aware of the presence of sensitive habitats, special status species, and other environmental constraints will also be an integral component of the preserve management plan.

### Summary

The Supplemental Alternatives Analysis and this on-site minimization measures report are being submitted in support of the application for a Department of the U.S. Army Corps of Engineers Permit pursuant to Section 404 of the Clean Water Act for the discharge of dredged or fill material in waters of the United States incidental to grading operations for the construction of residential development, commercial development, and associated roads and infrastructure for the proposed Arista del Sol project.

### References

- Hanes, Tony and Stromberg, Larry. 1998. *Hydrology of Vernal Pools on Non-Volcanic Soils in the Sacramento Valley*. Pages 38-49 in: C.W. Witham, E.T. Bauder, D. Belk, W.R. Ferren Jr., and R. Ornduff (Editors). *Ecology, Conservation, and Management of Vernal Pool Ecosystems – Proceedings from a 1996 Conference*. California Native Plant Society, Sacramento, CA. 1998.



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### **Northern California**

#### **Sacramento Area**

655 Menlo Drive, Suite 100, Rocklin, CA 95765-3718

Phone (916) 435-1202 Fax (916) 435-1205

#### **Chico**

140 Yellowstone Drive, Suite 100, Chico, CA 95973-5873

Phone (530) 893-6700 Fax (530) 893-6705

### **Southern California**

#### **Los Angeles**

24961 The Old Road, Suite 102, Stevenson Ranch, CA 91381

Phone (661) 284-3018 Fax (661) 284-2829

#### **San Diego**

10509 Vista Sorrento Parkway, Suite 120, San Diego, CA 92121

Phone (858) 552-8885 Fax (858) 552-8886

### **Nevada**

#### **Reno**

1610 Montclair Avenue, Suite C, Reno, NV 89509-3453

Phone (775) 348-9800 Fax (775) 348-9801

[www.foothill.com](http://www.foothill.com)



## **Appendix C**

### **Department of the Army Permits for Sunridge Properties**



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO  
CORPS OF ENGINEERS  
1325 J STREET  
SACRAMENTO, CALIFORNIA 95814-2922

October 2, 2006

Regulatory Branch (199400210)

Mark Enes  
Sunridge, L.L.C.  
7700 College Town Drive, Suite 101  
Sacramento, California 95826-2303

Dear Mr. Enes:

We are enclosing your copy of Department of the Army Permit 199400210. Please note you are only authorized to complete the work described in the permit.

If you sell the property associated with this permit, the terms and conditions of this permit will continue to be binding on the new owner. To validate the transfer of this permit, have the succeeding party sign the permit transfer section at the end of the permit and forward a copy to this office, along with their printed name, address, telephone number, and other contact information.

The time limit for completing the work is specified in General Condition 1. If the work will not be completed prior to that date, you may request a time extension. Your request for an extension must be received by this office for consideration at least 30 days before the time limit date.

Please refer to identification number 199400210 in any correspondence concerning this project. If you have any questions, please contact Mr. David Leput at our Sacramento Office, 1325 J Street, Room 1480, Sacramento, California 95814-2922, email [david.w.leput@usace.army.mil](mailto:david.w.leput@usace.army.mil), or telephone 916-557-5327. You may also use our website: [www.spk.usace.army.mil/regulatory.html](http://www.spk.usace.army.mil/regulatory.html).

Sincerely,

*[Handwritten signature]*

Kevin J. Roukey  
Chief, Central California/Nevada  
Section

*[Handwritten signature]*  
10/2/06 LEPUT/rr  
CESPK-CO-R

*[Handwritten signature]*  
NASS  
CESPK-CO-R

*[Handwritten signature]*  
ROUKEY  
CESPK-CO-R

Enclosure

CNS07625

Copy furnished without enclosure:

Niki Doan, AKT Development Corporation, 7700 College Town Drive, Suite 101,  
Sacramento, California 95826

Ellen Berryman, Berryman Ecological, 985 Meadow Gate Road, Meadow Vista, California  
95722

Hilary Anderson, Environmental Coordinator, Planning Department, City of Rancho  
Cordova, 2729 Prospect Park Drive, Rancho Cordova, California 95670-6025

DEPARTMENT OF THE ARMY PERMIT

Permittee: Mark Enes  
Sunridge, L.L.C.  
7700 College Town Drive, Suite 101  
Sacramento, California 95826-2303

Permit Number: 199400210

Issuing Office: U.S. Army Engineer District, Sacramento  
Corps of Engineers  
1325 "J" Street  
Sacramento, California 95814-2922

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below. A notice of appeal options is enclosed.

Project Description: To construct a residential subdivision, which contains 134 single-family homes (19.20 acres), a neighborhood park (2.57 acres), and roads including improvements (2.11 acres). The construction of the project will result in the permanent loss of 1.36 acres of waters of the United States (1.36 acres of vernal pools).

All work is to be completed in accordance with the attached plan(s).

Project Location: The project is located to the west of Jaeger Road and to the south of Douglas Road, in the SunRidge Specific Plan Area, in Sections 3, 8, & 10, Township 8 North, Range 7 East, M.D.B.&M, in Sacramento County, California.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on December 31, 2010. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity

authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. The Project shall comply with the provisions of the Conceptual-Level Strategy for Avoiding, Minimizing and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area dated June, 2004.

2. This Corps permit does not authorize you to take any threatened or endangered species, in particular the vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardii*), or designated critical habitat. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (e.g., and Endangered Species Act Section 10 permit, or a Biological Opinion under Endangered Species Act Section 7, with incidental take provisions with which you must comply). The enclosed Fish and Wildlife Service Biological Opinion (Number 1-1-04-F-0339, dated December 9, 2004), contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with incidental take that is also specified in the Biological Opinion. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached Biological Opinion, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the Biological Opinion, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The Fish and Wildlife Service is the appropriate authority to determine compliance with the terms and conditions of its Biological Opinion, and with the Endangered Species Act. The permittee must comply with all conditions of this Biological Opinion, including those ascribed to the Corps.

3. You shall develop a final comprehensive mitigation and monitoring plan, which must be approved by the Army Corps of Engineers prior to initiation of construction activities. The plan shall include mitigation location and design drawings, vegetation plans, including target species to be planted, and final success criteria, presented in the format of the Sacramento District's Habitat Mitigation and Monitoring Proposal Guidelines, dated December 30, 2004. The purpose of this requirement is to insure replacement of functions and values of the aquatic environment that would be lost through project implementation.

4. To mitigate for the loss of 1.36 acres of waters of the United States, you shall construct at least 1.36 acres of vernal pool and swale habitat at a Corps approved location.

5. You shall construct the required compensatory mitigation concurrently with, or in advance of, the start of construction of the permitted activity.



6. You shall complete construction of the compensatory mitigation no later than October 1, 2006.
7. To insure that mitigation is completed as required, you shall notify the District Engineer of the date you start construction of the authorized work and the start date and completion date of the mitigation construction, in writing and no later than ten (10) calendar days after each date.
8. To provide a permanent record of the completed mitigation work, you shall provide two complete sets of as-builts of the completed work within the off-site mitigation area(s) to the Corps of Engineers. The as-builts shall indicate changes made from the original plans in indelible red ink. These as-builts shall be provided to this office no later than 60 days after the completion of construction of the mitigation area wetlands.
9. You shall establish and maintain, in perpetuity, preserve(s) containing the 1.36 acres of created/restored vernal pool habitat required by "Special Condition 4" and 2.72 acres of preserved vernal pool habitat at a Corps and U.S. Fish and Wildlife Service approved location(s).
10. To minimize external disturbance to preserved or created/restored waters of the United States, you shall establish an adequate buffer, consisting of native upland vegetation surrounding the entire perimeter of all created, preserved, and avoided waters of the United States, including wetlands within the proposed off-site preserves. This buffer shall be proposed within the compensatory mitigation and monitoring plan and the preserve management plans. These buffer widths shall be explicitly approved in writing by the Corps prior to any work in waters.
11. To insure that the preserves are properly managed, you shall develop a specific and detailed preserve management plan for the off-site mitigation, preservation, and avoidance areas. This plan shall be submitted to and specifically approved, in writing, by the Corps of Engineers prior to engaging in any work authorized by this permit. This plan shall describe in detail any activities that are proposed within the preserve area(s) and the long term funding and maintenance of each of the preserve areas.
12. To protect the integrity of the preserve and avoid unanticipated future impacts, no roads, utility lines, trails, benches, equipment or fuel storage, grading, firebreaks, mowing, grazing, planting, discing, pesticide use, burning, or other structures or activities shall be constructed or occur within the off-site mitigation, preservation, and avoidance areas without specific, advance written approval from the Corps of Engineers.
13. To prevent unauthorized access and disturbance, you shall, prior to December 31, 2006, install fencing and appropriate signage around the entire perimeter of the off-site preserves. All fencing surrounding mitigation, preservation, avoidance, and buffer areas shall allow unrestricted visibility of these areas to discourage vandalism or disposing of trash or other debris in these areas. Examples of this type of fencing include chain link and wrought iron.
14. Prior to initiating any activity authorized by this permit, you shall, to insure long-term viability of mitigation, preservation, and avoidance areas:
  - a. Establish a fully-funded endowment to provide for maintenance and monitoring of the off-site mitigation, preservation, and avoidance areas.
  - b. Designate a Corps approved conservation-oriented third part entity to function as preserve manager and to hold the required conservation easements.
  - c. Record permanent conservation easements and deed restrictions maintaining all mitigation, preservation, and avoidance areas as wetland preserve and wildlife habitat in perpetuity. Copies of the proposed

deed restriction and conservation easement language shall be approved by the Corps of Engineers prior to recordation.

d. Provide copies of the recorded documents to the Corps of Engineers no later than 30 days prior to the start of construction of any of the activities authorized by this permit.

15. To assure success of the preserved and created waters of the United States, you shall monitor compensatory mitigation, avoidance, and preservation areas for five years or until the success criteria described in the approved mitigation plan are met, whichever is greater. This period shall commence upon completion of the construction of the mitigation wetlands. Additionally, continued success of the mitigation wetlands, without human intervention, must be demonstrated for three consecutive years, once the success criteria have been met. The mitigation plan will not be deemed successful until this criterion has been met.

16. You shall submit monitoring reports to this office for each year of the five-year monitoring period, and for each additional year, if remediation is required, by October 1 of each year. You shall submit an additional monitoring report at the end of the three-year period demonstrating continued success of the mitigation program without human intervention.

17. You must allow representatives from the Corps of Engineers to inspect the authorized activity and any mitigation, preservation, or avoidance areas at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

( ) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal projects.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
  - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
  - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
  - d. Design or construction deficiencies associated with the permitted work.
  - e. Damage claims associated with any future modification, suspension, or revocation of this permit.
4. **Reliance on Applicant's Data.** The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
5. **Reevaluation of Permit Decision.** This office may reevaluate its decision on this permit at any time the circumstances warrant.

Circumstances that could require a reevaluation include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of this permit.
- b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. **Extensions.** General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

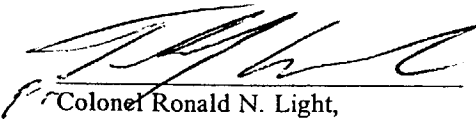
Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

\_\_\_\_\_  
PermitteeMark Enes  
Sunridge, LLC

9-29-06

\_\_\_\_\_  
Date

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

Colonel Ronald N. Light,  
District Engineer

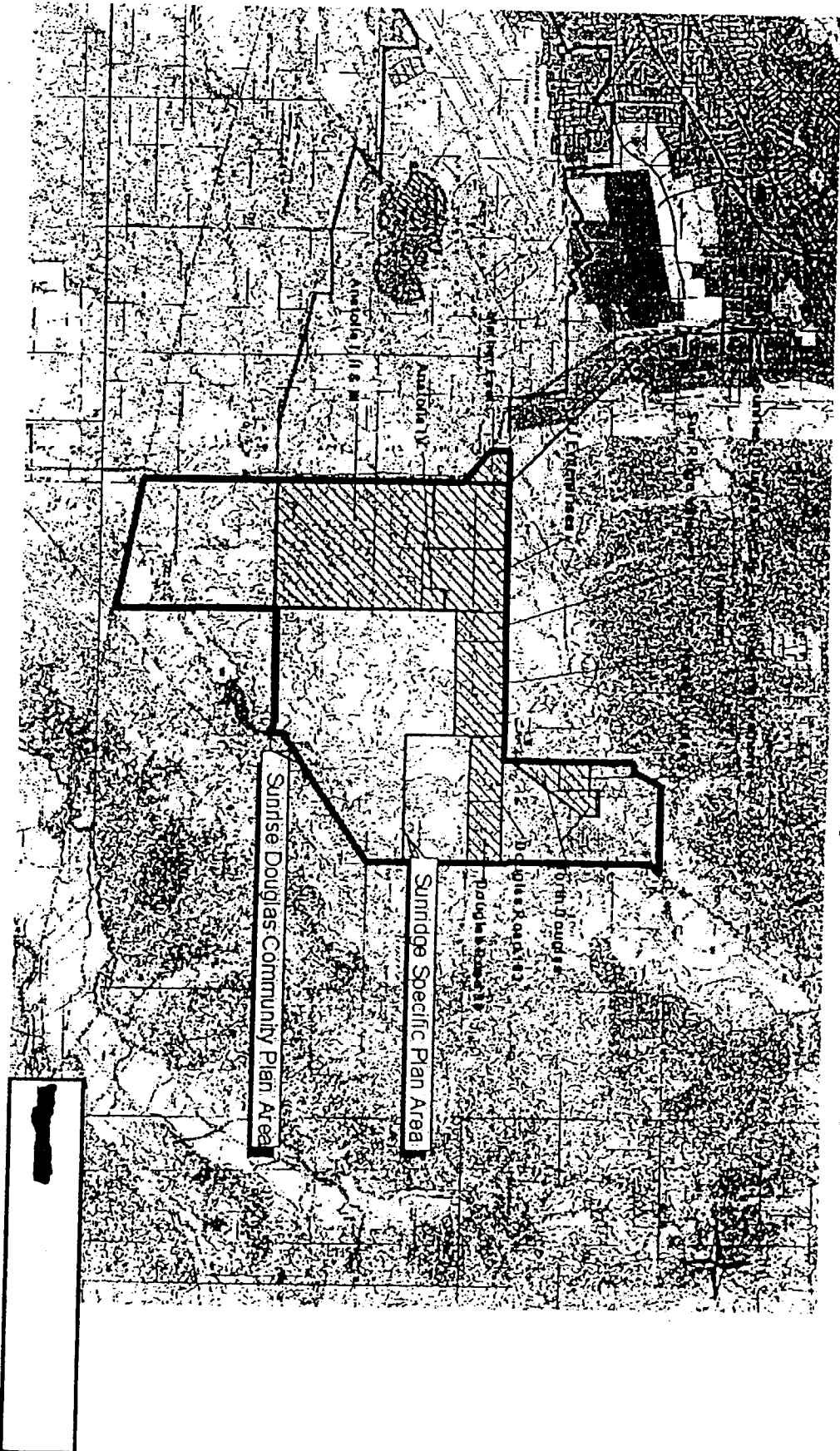
30 Oct 06

\_\_\_\_\_  
Date

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

\_\_\_\_\_  
Transferee\_\_\_\_\_  
Date

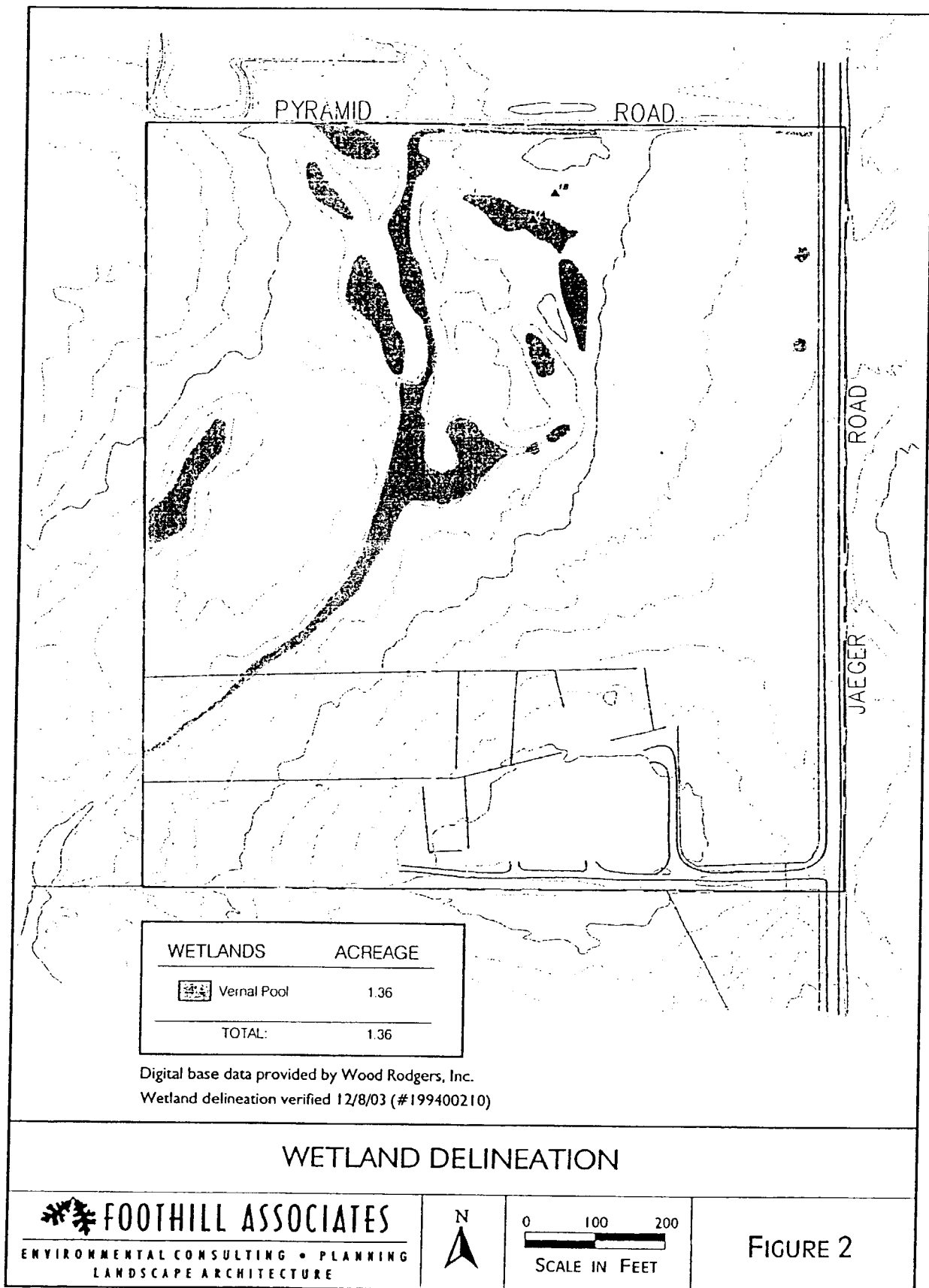
## Corps Actions within the Sun Ridge Specific Plan Area



Boundaries and scale are approximate

0.5 0 0.5 1 Miles





ANATOLIA IV

©2005

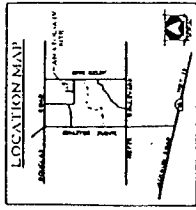
#199400210  
Fig. 2 of 3

CNS07634

# LARGE LOT/SMALL LOT TENTATIVE SUBDIVISION MAP

**ANATOLIA IV**  
CITY OF RANCHO CORDOVA, CALIFORNIA

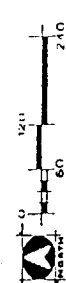
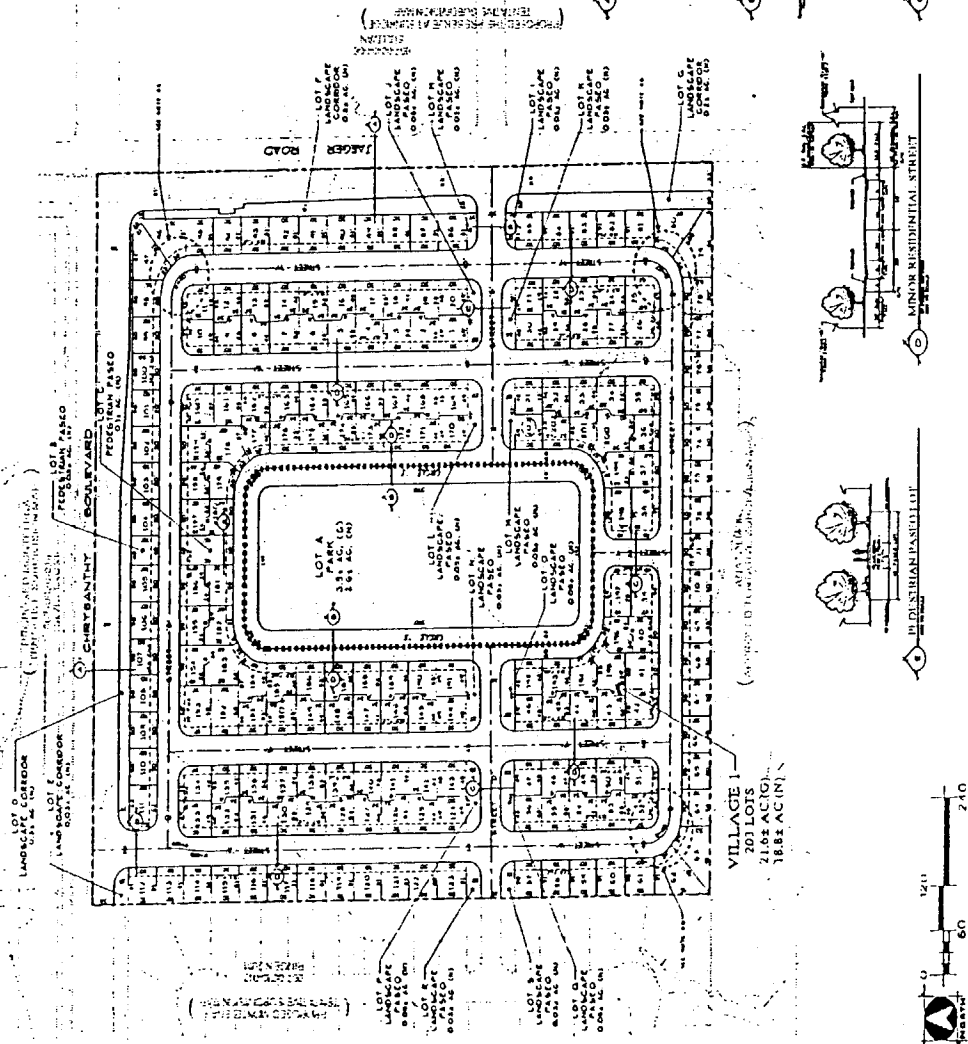
MARCH 14, 2002  
100 VILLAGE CORDOVA, RANCHO CORDOVA, CA 95726  
(UNAPPROVED)



**PROJECT NOTES**

1. THIS MAP IS A TENTATIVE SUBDIVISION MAP AND IS NOT A GUARANTEE OF THE ACCURACY OF THE INFORMATION CONTAINED HEREIN.
2. THE INFORMATION CONTAINED HEREIN IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TO BE USED FOR ANY OTHER PURPOSE.
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10. THE INFORMATION CONTAINED HEREIN IS NOT TO BE USED FOR ANY OTHER PURPOSE.

LAND USE SUMMARY	
LAND USE	ACRES
RESIDENTIAL	100.00
TOTAL	100.00



**WOOD ROBBERS**  
1000 WOOD ROBBERS DRIVE  
RANCHO CORDOVA, CA 95726  
(916) 438-1234



TENTATIVE SUBDIVISION MAP

#199400210  
Fig. 3 of 3



# California Regional Water Quality Control Board

## Central Valley Region

Robert Schneider, Chair



an C. Lloyd, Ph.D.  
Secretary for  
Environmental  
Protection

Sacramento Main Office  
11020 Sun Center Drive #200 Rancho Cordova, CA 95670-6114  
Phone (916) 464-3291 Fax (916) 464-4645  
<http://www.swrcb.ca.gov/rwqcb5>

Arnold  
Schwarzenegger  
Governor

28 December 2004

Mr. Mark Enes  
Sunridge, LLC  
7700 College Town Drive, Suite 101  
Sacramento, CA 95826

### ***ACTION ON REQUEST FOR CLEAN WATER ACT §401 WATER QUALITY CERTIFICATION FOR DISCHARGE OF DREDGED AND/OR FILL MATERIALS FOR THE ANATOLIA IV PROJECT, (WDID# 5A34CR00182) SACRAMENTO COUNTY***

#### **ACTION:**

1. ☐ Order for Standard Certification
2. ☒ Order for Technically-conditioned Certification
3. ☐ Order for Denial of Certification

#### **WATER QUALITY CERTIFICATION STANDARD CONDITIONS:**

1. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to §13330 of the California Water Code and §3867 of Title 23 of the California Code of Regulations (23 CCR).
2. This certification action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
3. The validity of any non-denial certification action shall be conditioned upon total payment of the full fee required under 23 CCR §3833, unless otherwise stated in writing by the certifying agency.
4. Certification is valid for the duration of the described project. The Sunridge, LLC shall notify the Regional Board in writing within 7 days of project completion.

**ADDITIONAL CONDITIONS (for Certification Action 2):**

In addition to the four standard conditions, the applicant shall satisfy the following:

1. Sunridge, LLC shall notify the Board in writing of the start of any in-water activities.
2. Except for activities permitted by the U.S. Army Corps under §404 of the Clean Water Act, soil, silt, or other organic materials shall not be placed where such materials could pass into surface water or surface water drainage courses.
3. The discharge of petroleum products or other excavated materials to surface waters is prohibited.
4. Activities shall not cause turbidity increases in surface waters to exceed:
  - (a) where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU;
  - (b) where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent;
  - (c) where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs;
  - (d) where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

Except that these limits will be eased during in-water working periods to allow a turbidity increase of 15 NTU over background turbidity as measured in surface waters 300 feet downstream from the working area. In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses will be fully protected.

5. Activities shall not cause settleable matter to exceed 0.1 ml/l in surface waters as measured in surface waters 300 feet downstream from the project.
6. Activities shall not cause visible oil, grease, or foam in the work area or downstream.
7. All areas disturbed by project activities shall be protected from washout or erosion.
8. In the event that project activities result in the deposition of soil materials or creation of a visible plume in surface waters, the following monitoring shall be conducted immediately upstream and 300 feet downstream of the work site and the results reported to this office within two weeks:

Parameter	Unit	Type of Sample	Frequency of Sample
Turbidity	NTU	Grab	Every 4 hours during in water work
Settleable Material	ml/l	Grab	Same as above.

9. Sunridge, LLC shall notify the Board immediately if the above criteria for turbidity, settleable matter, oil/grease, or foam are exceeded.
10. Sunridge, LLC shall notify the Board immediately of any spill of petroleum products or other organic or earthen materials.

11. Sunridge, LLC complies with all Department of Fish and Game 1600 requirements for the project as required.
12. Sunridge, LLC must obtain coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction Activities issued by the State Water Resources Control Board.

**REGIONAL WATER QUALITY CONTROL BOARD CONTACT PERSON:**

Patrick G. Gillum, Environmental Scientist  
11020 Sun Center Drive #200  
Rancho Cordova, California 95670-6114  
(916) 464-4709  
gillump@rb5s.swrcb.ca.gov

**WATER QUALITY CERTIFICATION:**

I hereby issue an order certifying that any discharge from the Sunridge, LLC, Anatolia IV Project (WDID #5A34CR00182) will comply with the applicable provisions of §301 ("Effluent Limitations"), §302 ("Water Quality Related Effluent Limitations"), §303 ("Water Quality Standards and Implementation Plans"), §306 ("National Standards of Performance"), and §307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act. This discharge is also regulated under Regional Board Resolution No. R5-2003-0008 "*Waiver of Reports of Waste Discharge and Waste Discharge Requirements for Specific Types of Discharge: Type 12 Projects for which Water Quality Certification is issued by the Regional Board*", which requires compliance with all conditions of this Water Quality Certification.

Except insofar as may be modified by any preceding conditions, all certification actions are contingent on (a) the discharge being limited and all proposed mitigation being completed in strict compliance with the applicant's project description and the attached Project Information Sheet, and (b) compliance with all applicable requirements of the Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).

 / for TRP

THOMAS R. PINKOS  
Executive Officer

Enclosure: Project Information

cc: U.S. Army Corps of Engineers, Sacramento  
Timothy Vendlinski, Wetlands Section Chief (WTR-8), U.S. Environmental Protection  
Agency, Region 9, San Francisco  
U.S. Fish & Wildlife Service, Sacramento  
Oscar Balaguer, Certification Unit, State Water Resources Control Board, Sacramento  
Linda Rivard, Foothill Associates, Rocklin



## PROJECT INFORMATION

**Application Date:** 20 September 2004

**Applicant:** Mr. Mark Enes  
Sunridge, LLC  
7700 College Town Drive, Suite 101  
Sacramento, CA 95826

**Applicant Representatives:** Linda Rivard  
Foothill Associates  
655 Menlo Drive, Suite 100  
Rocklin, CA 95765-3718

**Project Name:** Anatolia IV

**Application Number:** WDID#5A34CR00182

**US. Corps Application Number:** 199400210, 200000336

**Type of Project:** Construction

**Project Location:** Section 17, Township 8N, Range 7E, MDB&M, Latitude: 38°32'53" and Longitude: 121°13'32"

**County:** Sacramento County

**Receiving Water(s) (hydrologic unit):** Morrison Creek, Sacramento Hydrologic Basin, Valley – American Hydrologic Unit #519.21, Lower American HSA

**Water Body Type:** Wetlands

**Designated Beneficial Uses:** The Basin Plan for the Central Valley Regional Board has designated beneficial uses for surface and ground waters within the region. Beneficial uses that could be impacted by the project include: Municipal and Domestic Water Supply (MUN); Agricultural Supply (AGR); Industrial Supply (IND); Hydropower Generation (POW); Groundwater Recharge, Water Contact Recreation (REC-1); Non-contact Water Recreation (REC-2); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); and Wildlife Habitat (WILD).

**Project Description (purpose/goal):** The project site is located within the Sunridge Specific plan area, which is part of the 6,042 acre Sunrise Douglas Community Plan area. Activities proposed for the +/- 25-acre Anatolia IV project site includes grading and construction of 134 single low-density family residences.

**Preliminary Water Quality Concerns:** The construction activities may impact surface waters with increased turbidity and settleable matter.

**Proposed Mitigation to Address Concerns:** Sunridge, LLC will implement Best Management Practices (BMPs) to control sedimentation and erosion. All temporary affected areas will be restored to pre-construction contours and conditions upon completion of construction activities. Sunridge, LLC will conduct turbidity and settleable matter testing during in water work, stopping work if Basin Plan criteria are exceeded or are observed.

**Fill/Excavation Area:** There will be permanent impacts on 1.36 acres of Jurisdictional wetlands (vernal pools and seasonal wetlands).

**Dredge Volume:** <0.0 cubic yards

**U.S. Army Corps of Engineers Permit Number:** 199400210 & 200000336

**Federal Public Notice:**

**Department of Fish & Game Streambed Alteration Agreement:** Sunridge, LLC did not need to apply for a Streambed Alteration Agreement.

**Possible Listed Species:** Vernal pool fairy shrimp, Vernal pool tadpole shrimp.

**Status of CEQA Compliance:** Sunridge, LLC submitted a Final EIR on 19 July 2002, State Clearinghouse Number 1997022055.

**Compensatory Mitigation:** There will be 1.36 acres of Jurisdictional wetlands created at either the Bryte Ranch or Anatolia Conservation Bank.

**Application Fee Provided:** A fee of \$3,484.00 was submitted on 21 October 2004 as required by 23 CCR §3833b(2)(A) and by 23 CCR § 2200(e)



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825-1846



In reply refer to:  
1-1-04-F-0339

DEC 9 2004

DEC 14

Mr. Justin Cutler  
Chief, Sacramento Valley Office  
Department of the Army  
U.S. Army Engineer District, Sacramento  
1325 J Street, 14<sup>th</sup> Floor  
Sacramento, California 95814-2922

Subject: Formal Endangered Species Consultation on the proposed Anatolia IV Project (Corps File Number 2004 199400210) Sacramento County, California

Dear Mr. Cutler:

This is in response to your March 24, 2004, letter and supporting documentation requesting Section 7 consultation for the proposed Anatolia IV project (proposed project) in Sacramento County, California. Your request was received by the U.S. Fish and Wildlife Service (Service) on March 26, 2004. At issue are potential adverse effects to the federally-listed vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardii*). Surveys conducted of the proposed project site have not indicated the presence of the federally-listed slender Orcutt grass (*Orcuttia tenuis*), the Sacramento Orcutt grass (*Orcuttia viscida*), and the California tiger salamander (*Ambystoma californiense*). This document represents the Service's biological opinion on the effects of the project on the threatened vernal pool fairy shrimp and endangered vernal pool tadpole shrimp, in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act).

The findings and requirements in this consultation are based on: 1) permitting strategies discussed during the May 10- November 22, 2004 meetings attended by landowners, developers, and their representatives, staff from Congressman Doug Ose's office, California Department of Fish and Game, the Service, Department of Army-Corps of Engineers, and the Environmental Protection Agency; 2) the September 8, 2004, *Anatolia IV Section 7 Biological Assessment* and the Conservation Proposal, prepared by Foothill Associates, Inc.; 3) a March 24, 2004, letter from the Corps to the Service requesting initiation of formal consultation on proposed project; 4) site visits; 5) meetings, electronic mail (email) correspondence, and telephone conversations between representatives of the Service, Corps, Foothill Associates; 6) other information available to the Service.

#### Consultation History

TAKE PRIDE  
IN AMERICA

CNS07641

Beginning on May 10, 2002, the Planning Department of the County of Sacramento initiated and facilitated a series of meetings to discuss and develop potential wetlands and endangered species permitting strategies for the Sunrise Douglas Community Planning Area (SDCPA). These meetings were attended by landowners, developers, and their representatives, staff from Congressman Doug Ose's office, California Department of Fish and Game, the Service, Department of Army-Corps of Engineers (Corps), and the Environmental Protection Agency (EPA). The entire group met at least twelve times between May 10th and November 22, 2002, in an attempt to develop a strategy to address issues relating to endangered species and wetland protection within the SDCPA. By November of 2002, a resolution was not reached and discussions ceased at that time.

On July 17, 2002, during this initial phase of meetings, the Sacramento County Board of Supervisors approved both the larger SDCPA and the SunRidge Specific Plan. On July 1, 2003, with the incorporation of the City of Rancho Cordova ("City"), the SDCPA came under the City's land use jurisdiction.

A smaller group of project proponents representing the property owners in the Sun Ridge Specific plan area initiated several meetings with the Fish and Wildlife Service during mid 2003. Discussions focused on avoidance of endangered species habitats in the SDCPA and specific plan areas. Again, no resolution with the Service was reached.

In March 2004, Congressman Doug Ose initiated meetings with the Federal Agencies, local agencies, and the landowners/developer representatives to facilitate resolution of the issues that had emerged during the previous meetings. Congressman Ose urged the Federal Agencies to develop a conceptual strategy that would meet the requirements of the Federal Agencies respective statutes. Congressman Ose urged the regulated parties to work cooperatively with the Federal agencies to explore mechanisms to accommodate the agencies' obligations to comply fully with pertinent federal laws and regulations, which place a premium on the avoidance of on-site wetlands resources to the extent practicable and the need to avoid jeopardizing the continued existence of threatened and endangered species. In short, the Congressman encouraged the parties to work cooperatively with one another to develop a conceptual onsite avoidance and offsite compensation strategy that reached a proper and workable balance between and amongst the following: the mandates of federal law; the need to preserve ecosystem integrity and the habitat of endangered and threatened species; the need to acknowledge the planning policies and objectives of the City of Rancho Cordova; and the need to account for the economic realities facing private sector developers. These meetings continued through September 2004.

In June of 2004 the Federal agencies developed two documents ("A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area"; and the accompanying planning map) that outline our strategies for conserving threatened and endangered species and wetland habitats and to provide a framework for development proposals. In addition, our strategy would provide some conceptual guidelines for permitting.

#### Service Correspondence

April 2, 1996, To: A. Champ-Corps of Engineers, Re: Formal Section 7 Consultation on Issuance of 404 Permit for the Sunrise Douglas Project (AKA Anatolia I, II, III), Service File #1-1-96-F-0062, Corps PN 190110021

November 22, 2002, To: M. Finan-Corps of Engineers, Re: Request for additional information on the Sunridge Specific Plan/Sunrise Douglas Community Plan. Service file #1-1-03-I-0411

July 18, 2002, To: D. Nottoli-Sacramento County Board of Supervisors, Re: Sunrise Douglas Community Plan and SunRidge Specific Plan-Service File # 1-1-02-CP-2579

April 26, 2004, To: Col. Conrad-Corps of Engineers, Re: SunRidge Specific Plan, Service file #/Corps PN 200000336

### **Consultation History Specific to the Proposed Project**

March 24, 2004. U.S. Army Corps of Engineers requested to initiate Section 7 consultation for the proposed project.

September 8, 2004. Foothill Associates submitted *Anatolia IV Section 7 Biological Assessment* to the Service dated September 8, 2004. The Service received the document on September 24, 2004.

September 15, 2004. The Service sent Foothill Associates an email explaining our inclination to consider all wetland types (variously classified) as endangered species habitat. One exception might be stock ponds, given the species under consultation.

September 21, 2004. Foothill Associates submitted a letter to the Service, providing proposed conservation measures for the vernal pool crustacean habitat that would be directly and indirectly affected by the proposed project. The Service received this letter on September 27, 2004.

October 7, 2004. Meeting with Foothill Associates and Service representatives regarding clarification on minimization strategies for each proposed project.

October 13, 2004. Foothill Associates sent the Service an email revising the minimization strategy that was outlined in their September 21, 2004 letter to the Service.

## **BIOLOGICAL OPINION**

### **Description of the Proposed Action**

The following is taken from the document titled *A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area*, prepared by the Service, the Corps, and the EPA (enclosed). This document and the accompanying planning map developed by the three Federal agencies are hereby incorporated by reference into the project description. Thus, our biological opinion on this proposed action, the



Anatolia IV project, is based on application and full implementation of the Federal agencies conservation strategy outlined in this document and map, on all future projects in the SDCPA.

“In March through May 2004, representatives of the US Fish and Wildlife Service, US Environmental Protection Agency, and the US Army Corps Engineers (Agencies) met to formulate a conceptual-level strategy for avoiding, minimizing, and preserving aquatic resource habitat in the Sunrise-Douglas Community Plan Area (SDCPA). The intended result of this effort was to achieve reasonable protection and conservation of federally threatened and endangered species under the Endangered Species Act, while taking a regional approach to avoidance and minimization of impacts to waters of the US, including wetlands, in accordance with Section 404 (b)(1) guidelines under the Clean Water Act. The strategy also endeavors to ensure a viable South Sacramento County Habitat Conservation Plan (HCP) can be developed, given that a large proportion of vernal pool habitat under consideration by the HCP planners is at risk in the SDCPA.

The conceptual-level strategy is represented by preserve areas shown on the map titled Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection dated March 2004 (see attached). To meet the goals of ESA and the Clean Water Act, the Agencies arrived at the boundaries of the “Preserve Areas” based on best professional judgment and a limited amount of information regarding regional and site-specific biology and hydro-geomorphology (such as wetland delineations, species accounts, and environmental impact reports), while recognizing that development is planned in the area. Of particular focus is the preservation of vernal pool complexes and corridors for Morrison Creek and Laguna Creek. The mapped boundaries are the smallest that would be acceptable to the Agencies and are predicated on ten principles and standards that would be followed by developers and planners as each element of the overall development proceeds.

The conceptual level strategy should be used by developers and planners to design and plan projects in the SDCPA. The Agencies will use the strategy to aid in the review of proposed development and evaluate the probable individual and cumulative effects on aquatic resources and sensitive species.

The Agencies anticipate that permit decisions and biological opinions will be completed on a case-by-case basis, using site-specific project and aquatic resource habitat information. Each proposed project would be evaluated on its own merits within the larger context of the SDCPA. Depending on the particular hydrology, habitat features, and development plans for a particular parcel, the conceptual preserve boundaries may need to be adjusted to minimize direct and indirect impacts to aquatic resources. Appropriate compensatory mitigation will be developed following demonstrated avoidance and minimization of project impacts.”

The Anatolia IV project site is located in southeastern Sacramento County in the City of Rancho Cordova approximately five miles south of Highway 50, east of Sunrise Boulevard and the

Folsom South Canal, and north of Jackson Road (Highway 16). The Anatolia IV project site is within the Sunridge Specific Plan area (SSPA), which is part of the Sunrise Douglas Community Plan. The Anatolia IV project lies one mile south of Douglas Road and west of and adjacent to Jaeger Road. The project site is located in Section 17 of Township 8 North, Range 7 East on the U.S.G.S. Buffalo Creek 7.5' quadrangle.

The Project Site is within the 6,042 acre SDCPA located within the Sacramento County General Plan Urban Service Boundary and Policy Area. The project is also located within the SSPA, which provides a greater detailed land use plan for development of approximately 2,632 acres within the SDCPA. The SDCPA is located within the headwaters of both the Morrison Creek and Laguna Creek watersheds.

The proposed project involves grading the  $\pm 25$ -acre site to construct a low density residential development including associated infrastructure (sewer mains and laterals, water mains, and utility lines). The project proponents are proposing to develop approximately 134 single family homes. The proposed project site consists of a  $\pm 25$ -acre parcel that includes 1.36 acres of vernal pools subject to Clean Water Act jurisdiction. These wetlands are found primarily in the northern portion of the property. Grading would result in the loss of the 1.36 acres of on-site wetlands. The proposed project boundaries are not contiguous with any open space or preserved areas. There are projects under construction, or proposed projects on all sides adjacent to the proposed project site.

### **Proposed Conservation Measures**

The project applicant has proposed the following conservation measures in the September 8, 2004, *Anatolia IV Section 7 Biological Assessment* and the October 13, 2004 electronic letter revising the minimization strategy to minimize adverse effects to the two federally-listed vernal pool crustacean species.

1. Standard construction Best Management Practices (BMPs) will be incorporated into construction designs, plans and specifications, and required of contractors during construction. The BMPs would include the following:
  - (a) All constructed slopes adjacent to the preserve will be hydroseeded with a native grassland mix. The hydroseed mix will be applied with a tackifying agent at a rate of at least 2 tons/acre and based on manufacturer's recommendations. The tackifying agent will be a hydraulic matrix which when applied, and upon drying, adheres to the soil to form a 100% cover which is biodegradable, promotes vegetation, and prevents soil erosion. The hydroseed mix will not be applied before, during, or immediately after rainfall so that the matrix will have an opportunity to dry 24 hours after installation;
  - (b) Certified weed-free straw wattles will be installed at the base of all slopes along the property lines of the proposed property site. The existing Jaeger Road currently provides additional erosion and sediment control to the east. Road improvement projects will be subject to a Storm Water Pollution Prevention Plan (SWPP) and BMP monitoring. Prior to installation of the straw wattles, a concave

key trench approximately 2 to 4 inches deep will be contoured along the proposed installation route. Soil excavated for the trenching will be placed on the uphill or flow side of the straw wattles to prevent water from undercutting the straw wattles. Stakes will be driven in on alternating sides of the straw wattles, to hold them in place. The straw wattles will be maintained for a period of time at least until the native grassland vegetation is fully established and the soil is stabilized;

- (c) During construction all excavated materials will be deposited or stored such that this material cannot be washed into any watercourse, and excess supplies of certified weed-free straw bales and/or sedimentation fencing will be available at the construction site for periodic site-specific use as needed.;
- (d) Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. No refueling, storage, servicing, or maintenance of equipment will take place within 100 feet of the adjacent off-site habitat. All machinery will be properly maintained and cleaned to prevent spills and leaks. Any spills or leaks from the equipment will be reported and cleaned up in accordance with applicable local, state and/or federal regulations;
- (e) Temporary fencing will be installed prior to construction along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto adjacent off-site habitat; and
- (f) An environmental monitor will be employed to ensure compliance with construction-related impact avoidance measures. The monitor will report directly to the City of Rancho Cordova Public Works project manager, and based on reports of non-compliance with environmental requirements, will be authorized to stop work orders and to take actions necessary to prevent damage to off-site habitat. Monitoring reports will be provided to the City of Rancho Cordova Department of Public Works project manager on a daily basis during initial ground breaking, and on a weekly basis (or more frequently as needed when problems arise) thereafter until construction is finished.

2. A SWPPP will be prepared for the proposed project, with the following objectives; (a) to identify pollutant sources, including sources of sediment, that may affect the quality of storm water discharges from the construction of the project; (b) to identify BMPs to reduce or eliminate pollutants in storm water discharges and authorized non-storm water discharges, from the site during construction; (c) to outline and provide guidance for BMP monitoring; (d) to identify project discharge points and receiving waters; (e) to address post-construction BMP implementation and monitoring; and (f) to address sediment / siltation / turbidity and non-visually detectable pollutant monitoring, and outline a sampling and analysis strategy.

3. Habitat Preservation and Restoration

- a. Direct effects to 1.36 acres of vernal pool crustacean habitat will be offset through habitat preservation (refer to Tables 1 and 2). Habitat preservation will be achieved through:
- i. The preservation of 5.44 acres of vernal pool crustacean habitat at Borden Ranch. This site will be preserved with a conservation easement and protected and managed in perpetuity consistent with a Service-approved preserve management plan. The preserve management plan needs to be received by the service 120 days prior to construction for review. A long-term funding mechanism (*i.e.*, an endowment fund) to fund the preserve management will be established upon Service approval of the site.
- b. Direct effects to vernal pool crustacean habitat will be further offset through habitat restoration/creation at a 1:1 ratio (refer to Tables 1 and 2). The restoration/creation goal will be to create and enhance wetlands with habitat functions and values equal to, or greater than, the wetland features affected by the implementation of the proposed project. Habitat creation/restoration will be achieved through either:
- i. The purchase of vernal pool restoration/creation credits equivalent to 1.36 acres (at a 1:1 ratio) at a Service-approved bank; or
  - ii. The restoration of 1.36 acres of vernal pool crustacean habitat at a Service-approved site within Sacramento County that meets the following criteria:
    1. The restoration site's soils will be appropriate vernal pool soil types (*e.g.*, San Joaquin, Redding, Corning);
    2. The restoration site's soil would have been disturbed at some point in the past, either through land leveling, ditching and draining, berming, or other disturbance that has removed or modified edaphic and hydrologic features necessary to support vernal pool habitat;
    3. The restoration site will have a conservation easement, a preserve management plan, and a long-term funding mechanism in place upon Service approval.

**Table 1 – Vernal Pool Crustacean Habitat Effects and Compensation Acreages if Credits Purchased at Anatolia Conservation Bank**

Type	Acres of Direct Effects	Acres of Indirect Effects	2:1 Preservation Compensation	1:1 Creation Compensation
Vernal Pool	1.36	0	2.72	1.36
<b>TOTAL</b>	<b>1.36</b>	<b>0</b>	<b>2.72</b>	<b>1.36</b>

**Table 2 – Vernal Pool Crustacean Habitat Effects and Compensation Acreages if Credits**

Purchased at Borden Ranch Preserve or at Another Service-Approved Site

Type	Acres of Direct Effects	Acres of Indirect Effects	4:1 Preservation Compensation	1:1 Creation Compensation
Vernal Pool	1.36	0	5.44	1.36
<b>TOTAL</b>	<b>1.36</b>	<b>0</b>	<b>5.44</b>	<b>1.36</b>

#### STATUS OF THE SPECIES

The vernal pool tadpole shrimp and vernal pool fairy shrimp were listed as endangered and threatened, respectively, on September 19, 1994. Final critical habitat was designated for these species on August 6, 2003 (68 FR 46684). Complete descriptions of these species are found in 59 FR 48136, the final rule listing these species under the Act. These crustaceans are restricted to vernal pools and swales and other seasonal aquatic habitats in California. Eng *et al.* (1990), Simovich *et al.* (1992), and (Service 1994c) provide further details about their life history and ecology. The Service did not designate any critical habitat for the vernal pool crustaceans in Sacramento County. Although the Service designated critical habitat for the vernal pool fairy shrimp in San Joaquin County, none will be affected by the proposed project.

#### Life History

**Vernal pool tadpole shrimp.** The vernal pool tadpole shrimp has dorsal compound eyes, a large shield-like carapace that covers most of its body, and a pair of long cercopods at the end of its last abdominal segment (Linder 1952, Longhurst 1955, Pennak 1989). It is primarily a benthic animal that swims with its legs down. Its diet consists of organic detritus and living organisms, such as fairy shrimp and other invertebrates (Pennak 1989). The females deposit their eggs on vegetation and other objects on the pool bottom. Tadpole shrimp eggs are known as cysts during the summer, when they lie dormant in the dry pool sediments (Lanway 1974, Ahl 1991).

The life history of the vernal pool tadpole shrimp is linked to the environmental characteristics of its vernal pool habitat. After winter rains fill the pools, the populations are re-established from dormant cysts. A portion of the cysts hatch immediately and the rest remain dormant in the soil to hatch during later rainy seasons (Ahl 1991). The vernal pool tadpole shrimp is a relatively long-lived species (Ahl 1991). Adults are often present and reproductive until the pools dry up in the spring (Ahl 1991, Simovich *et al.* 1992).

**Vernal pool fairy shrimp.** Vernal pool fairy shrimp have delicate elongate bodies, large stalked compound eyes, no carapace, and 11 pairs of swimming legs. The swim or glide gracefully upside-down by means of complex, wavelike beating movements. Fairy shrimp feed on algae, bacteria, protozoa, rotifers, and detritus. The females carry eggs in an oval or elongate ventral brood sac. The eggs are either dropped to the pool bottom or remain in the brood sac until the female dies and sinks. The dormant cysts are capable of withstanding heat, cold, and prolonged desiccation. When the pools refill in the same or subsequent seasons, some, but not all, of the cysts may hatch. The cyst bank in the soil may therefore be comprised of cysts from several years of breeding (Donald 1983). The early stages of the fairy shrimp develop rapidly into



adults. The vernal pool fairy shrimp can mature quickly, allowing populations to persist in short-lived shallow pools (Simovich *et al.* 1992).

### Distribution

Vernal pool tadpole shrimp. The vernal pool tadpole shrimp is known from 168 occurrences in the Central Valley, ranging from east of Redding in Shasta County south to Fresno County, and from a single vernal pool complex located in the San Francisco Bay National Wildlife Refuge in Alameda County. It inhabits vernal pools containing clear to highly turbid water, ranging in size from 5 square meters (54 square feet) in the Mather Air Force Base area of Sacramento County, to the 36-hectare (89-acre) Olcott Lake at Jepson Prairie in Solano County.

Vernal pool fairy shrimp. The vernal pool fairy shrimp is known from 342 occurrences extending from Shasta County through most of the length of the Central Valley to Pinnacles in San Benito County (Eng *et al.* 1990, Fugate 1992, CNDDDB 2004) and Riverside County. Five disjunctive populations exist: one near Soda Lake in San Luis Obispo County; one in the mountain grasslands of northern Santa Barbara County; one on the Santa Rosa Plateau in Riverside County; one near Rancho California in Riverside County; and one on the Agate Desert near Medford, Oregon. The vernal pool fairy shrimp inhabits vernal pools with clear to tea-colored water, most commonly in grass- or mud-bottomed swales, basalt flow depression pools in unplowed grasslands, or even sandstone rock outcrops or alkaline vernal pools.

The genetic characteristics of these species, as well as ecological conditions, such as watershed continuity, indicate that populations of vernal pool crustaceans are defined by pool complexes rather than by individual vernal pools (Fugate 1992). Therefore, the most accurate indication of the distribution and abundance of these species is the number of inhabited vernal pool complexes. The pools and, in some cases, pool complexes supporting these species are usually small. Human-caused and unforeseen natural catastrophic events such as long-term drought, non-native predators, off-road vehicles, pollution, berming, and urban development, threaten their extirpation at some sites.

### Dispersal

The primary historic dispersal method for the vernal pool tadpole shrimp and vernal pool fairy shrimp likely was large scale flooding resulting from winter and spring rains which allowed the animals to colonize different individual vernal pools and other vernal pool complexes. This dispersal is currently non-functional due to the construction of dams, levees, and other flood control measures, and widespread urbanization within significant portions of the range of this species. Waterfowl and shorebirds may now be the primary dispersal agents for vernal pool tadpole shrimp and vernal pool fairy shrimp. The eggs of these crustaceans are either ingested (Krapu 1974, Swanson *et al.* 1974, Driver 1981, Ahl 1991) and/or adhere to the legs and feathers where they are transported to new habitats.

### ENVIRONMENTAL BASELINE

Historically, vernal pools and vernal pool complexes occurred extensively throughout the

Sacramento Valley of California. However, conversion of vernal pools and vernal pool complexes has resulted in a 91 percent loss of vernal pool resources in California (State of California 2003d). By 1973, between 60 and 85 percent of the area within the Central Valley that once supported vernal pools had been destroyed (Holland 1978). In the ensuing 30 years, threats to this habitat type have continued and resulted in a substantial amount of vernal pool habitat being converted for human uses in spite of Federal regulations implemented to protect wetlands. For example, between 1987 and 1992, 467 acres of wetlands within the Sacramento area were filled pursuant to Nationwide Permit 26 (Service 1992). A majority of those wetlands losses involved vernal pools, the endemic habitat of the vernal pool tadpole shrimp, the vernal pool fairy shrimp (shrimp), and slender and Sacramento Orcutt grasses. It is estimated that within 20 years human activities will destroy 60 to 70 percent of the remaining vernal pools (Coe 1988).

In addition to direct habitat loss, the two shrimp populations have been and continue to be highly fragmented throughout their ranges due to conversion of natural habitat for urban and agricultural uses. Fragmentation results in small isolated shrimp populations. Ecological theory predicts that such populations will be highly susceptible to extirpation due to chance events, inbreeding depression, or additional environmental disturbance (Gilpin and Soulé 1988; Goodman 1987a,b). If an extirpation event occurs in a population that has been fragmented, the opportunities for recolonization would be greatly reduced due to physical (geographic) isolation from other (source) populations.

Human population growth in Sacramento County has steadily increased. On the average, Sacramento County has experienced an annual population increase of 1.38 percent for the period between 1991 and 1999 (Service 2000). For the period between 1990 and 2000, population growth in Sacramento County increased 17.5 percent, with an average annual growth rate of 17.5 percent (State of California 2002). This annual growth appears to be increasing, as demonstrated by the 2.63 percent and 2.2 percent increases in population growth in 2001 and 2002, respectively (State of California 2003a, 2003b). Increased housing demand and urban development accompany the population growth in Sacramento County. Between 1990 and 2000, housing units in Sacramento County increased by 1.37 percent annually (State of California 2000, 2003c). Population growth and concomitant housing demand and subsequent vernal pool resource development are projected to continue. Population projections for Sacramento County are expected to increase above 2000 levels by 19.7 percent in 2010, by 28 percent in 2015, and by 37.5 percent in 2020 (State of California 2001).

Sacramento County represents important, high quality habitat for the two shrimp populations by providing large, nearly contiguous areas of relatively undisturbed vernal pool habitat. Sacramento County contains the greatest number of occurrences of vernal pool tadpole shrimp within the range of the species, and also is one of the two counties with the greatest number of occurrences of vernal pool fairy shrimp within the range of the species. Sacramento County contains 58 (17 percent) out of the total of 342 reported occurrences of vernal pool fairy shrimp, and 58 (34 percent) out of the total of 173 reported occurrences of vernal pool tadpole shrimp (CNDDDB 2004). Further, Sugnet and Associates (1993) reported that of 3,092 "discrete populations" checked, only 345 locations, or about 11 percent of all locations checked, were found to support the vernal pool tadpole shrimp. Of these 345 locations supporting the vernal pool tadpole shrimp, 219 (63 percent) were in Sacramento County. Further, of the 3,092

locations checked, 178 locations (6 percent) were found to support the vernal pool fairy shrimp. Of this total, 63 locations (35 percent) were within Sacramento County.

The vernal pool tadpole shrimp and vernal pool fairy shrimp are imperiled by a variety of human-caused activities. Their habitats have been lost through direct destruction and modification due to filling, grading, disking, leveling, and other activities. In addition, vernal pools have been imperiled by a variety of anthropogenic modifications to upland habitats and watersheds. These activities, primarily urban development, water supply/flood control projects, land conversion for agriculture, off-road vehicle use, certain mosquito abatement measures, and pesticide/herbicide use can lead to disturbance of natural flood regimes, changes in water table depth, alterations of the timing and duration of vernal pool inundation, introduction of non-native plants and animals, and water pollution. These indirect effects can result in adverse effects to vernal pool species.

A number of State, local, private, and unrelated Federal actions have occurred within the project area and adjacent region affecting the environmental baseline of these species. Some of these projects have been subject to prior section 7 consultation. Based on an informal review, the Service has issued approximately 157 biological opinions to Federal agencies on proposed projects in Sacramento County that have adversely affected the shrimp species since the two species were proposed to be listed in 1994. This total does not reflect the formal consultations that were withdrawn, those that are suspended, and those that have insufficient information to conclude an effects analysis, those that were amended, or ones that the Service issued a conference opinion. No State of California actions have taken place within Sacramento County that has adversely affected the species in the action area. Although these proposed projects in Sacramento County have eliminated vernal pools and vernal pool complexes, the offsetting compensating measures are designed to minimize the effects of take of these species resulting in both negative and positive effects to the species. Thus, the trend for the two vernal pool species within the county is most likely static.

The actions listed above have resulted in both direct and indirect impacts to vernal pools within the region, and have contributed to the loss of vernal pool tadpole shrimp and vernal pool fairy shrimp populations. Although a reduction of the two shrimp populations has not been quantified, the acreage of lost habitat continues to grow.

In south Sacramento County, the Urban Services Boundary (USB) is a planning boundary that coincides with the areas north of the Cosumnes River/Deer Creek drainage system. Between 1993 and 2000, an estimated 14,950 acres were converted to urban development within the USB (pers. comm., D. Gifford, 2004), based on an analysis of the California Department of Water Resources mapping data. An independent analysis of urban growth in Sacramento County estimated that an estimated 22,000 acres were converted between 1990 and 2000, averaging 2,200 acres per year (pers. comm., Richard Radmacher, Sacramento County, 2004). As of 1998 (the most recent year for which vernal pool mapping from aerial photographs is available), there remained an estimated 23,533 acres of vernal pool grasslands within the USB, supporting approximately 946 acres of wetted vernal pool acreage (pers. comm., Lora Konde, California Department of Fish and Game, 2003).

Vernal pool complexes, occurring north of the Cosumnes River/Deer Creek drainage and within

the USB, contain a high density of occupied pool of both vernal pool tadpole shrimp and vernal pool fairy shrimp. There are 31 known occurrences of vernal pool tadpole shrimp inside the USB, compared to 17 occurrences outside the USB (CNDDDB 2003). There are 25 known occurrences of vernal pool fairy shrimp inside the USB, compared to 18 occurrences outside the USB (CNDDDB 2003). The data from the CNDDDB do not reflect additional reported records in the Sunrise-Douglas area, where 137 occurrences of vernal pool tadpole shrimp and 46 occurrences of vernal pool fairy shrimp, and 2 occurrences of Orcutt grasses (2 slender Orcutt grass and 4 Sacramento Orcutt grass) are reported (pers. comm., Arnold Roessler, Service, 2004). An additional occurrence of slender Orcutt grass has been reported, but not recorded in the CNDDDB (pers. Comm., Pete Balfour, ECORP Consulting, 2004).

The vernal pools on the proposed project site are classified as the old-terrace type and are located on soils associated with Laguna geologic formation. Old-terrace is a rapidly disappearing habitat type in Sacramento County that consists of ancient river channel deposits that were laid down from 600,000 to more than one million years ago by the American River. By comparison, young-terrace formation dates from 100,000 to 200,000 years ago. Old-terrace formation generally has a higher density of vernal pools, deeper pools, and a greater number of special status plants and crustaceans than young-terrace formations. Some special status species found in old-terrace pools may have evolved from species inhabiting shores of ancient lakes in the Central Valley. Old-terrace pools may have served as refugia for these species as the lakes disappeared (Ref: Fuller, pers. comm. 2004). Sacramento County contains an estimated 764 wetted acres of vernal pools on low terrace, 1,390 wetted acres of vernal pools on high terrace, and 189 wetted acres of vernal pools on volcanic mudflow vernal pools.

There are two predominant soil types found within south Sacramento County. The Valley Springs soil type typifies Gill Ranch, located in Sacramento County, approximately 12 miles southeast of the proposed project site. Vernal pools found within the Valley Springs soil type are the young-terrace formation. Young-terrace formations, because they have a higher slope gradient, tend to have fewer vernal pools that are typically smaller and shallower. These vernal pools also are inundated for shorter durations. These factors typically result in lower species diversity. Generally, the larger the vernal pool on this soil type, the higher its biotic diversity. Vernal pool fairy shrimp, vernal pool tadpole shrimp, and Sacramento Orcutt grass are less likely to occur in young-terrace formation vernal pools found on Valley Springs soils. (Ref: Holland, pers. comm. 2004).

The Laguna geologic formation and its associated soils entirely characterize the SDCPA. Vernal pools found within this soil type are old-terrace types. Old-terrace types, because they have a lower slope gradient, tend to have pools that are larger, deeper, and clearer. These pools are inundated for longer periods, but dry and refill less often than the Valley Springs soil type. Generally, the smaller the vernal pool on this soil type, the higher its invertebrate diversity. Although vernal pool fairy shrimp occur in pools on both soil types, but more frequently in pools on Laguna soils. Vernal pool tadpole shrimp are found almost exclusively in old-terrace formation vernal pools found on Laguna soils.

Several areas containing old-terrace formation have been protected for their high quality vernal pool habitat and high concentration of special status species populations by the Sacramento

Valley Conservancy (SVC). This potential preserve area, the SVC's Vernal Pool Prairie Preserve, would cover 2,000 to 3,000 acres and supports a variety of special status plants and animals on relatively undisturbed grasslands containing young and old terrace formations and northern hardpan vernal pools. Within the proposed Prairie Preserve, areas already protected include the Arroyo Seco Mitigation Bank, the Excelsior 184 parcel, and the Sacramento County-owned Multi Cultural Park; outside of the proposed Prairie Preserve, the Sunrise Douglas Preservation Bank, and a portion of Howard Ranch are protected. All of these preserves are within proposed critical habitat for the two listed vernal pool crustaceans addressed in this biological opinion.

There are 342 records of vernal pool fairy shrimp and 173 records of vernal pool tadpole shrimp recorded in the CNDDDB for the entire state of California (CNDDDB 2004). Of these records, 58 vernal pool fairy shrimp records and 58 vernal pool tadpole shrimp records are from Sacramento County (CNDDDB 2004). Vernal pool fairy shrimp and vernal pool tadpole shrimp have both been observed in wetlands throughout the Sunrise Douglas area. Surveys were conducted on the proposed Anatolia IV project area for federally threatened slender Orcutt grass or the federally endangered Sacramento Orcutt grass. No Orcutt grass was found in the proposed project site.

Vernal pool fairy shrimp located within the Sunridge Specific Plan: There is one record within the Sunridge Specific Plan boundaries, and another 17 records located within five miles of the Sunridge Specific Plan area boundaries. The nearest occurrence (# 43) of this species, observed in March 1996, is a half of a mile southwest of the proposed project site.

Vernal pool tadpole shrimp within the Sunridge Specific Plan: There are two records within the Sunridge Specific Plan boundaries, and another 23 records within five miles of these boundaries. The nearest two occurrences (# 54 and # 23) of this species are within 1.5 miles of the proposed project site. One of these recorded occurrences (# 54), located to the west of the site, was observed in February of 1993; and the other recorded occurrence (# 23), located to the east of the site, was observed in 1996.

#### EFFECTS OF THE PROPOSED ACTION

Although vernal pool fairy shrimp and vernal pool tadpole shrimp exhibit slightly differing habitat requirements and life cycles, they often inhabit the same vernal pool complexes and have been known to co-occur in individual vernal pools. These species are supported by similar habitat types, including vernal pools, seasonally ponded areas within vernal swales, rock outcrop ephemeral pools, playas, alkali flats, and other depressions that hold water of similar volume, depth, area, and duration. Therefore, both species are subject to a common set of threats and considerations.

Both vernal pool fairy shrimp and vernal pool tadpole shrimp have been documented to occur within the SSPA. Although no surveys have been done on the proposed project site, these species are known from other parcels within the SSPA. The project site is located in Unit 13 of the proposed critical habitat for vernal pool fairy shrimp and in Unit 8 of the proposed critical habitat for vernal pool tadpole shrimp. All of the vernal pools and seasonal wetlands on the proposed project site, however, provide appropriate habitat for both vernal pool fairy shrimp and



vernal pool tadpole shrimp. Because these species are known from other parcels within the SDCPA and vicinity, and it is likely the vernal pool crustaceans would disperse within the watershed between the project sites, the applicant assumes presence of vernal pool fairy shrimp and vernal pool tadpole shrimp in all suitable habitat on the proposed project site. Therefore, construction of the proposed project in any portion of the proposed project site that supports suitable habitat is likely to adversely affect populations of vernal pool fairy shrimp and vernal pool tadpole shrimp.

### **Direct Effects**

Direct effects are the immediate effects of the proposed project on the species or its habitat and include the effects of interrelated action and interdependent actions. Interrelated actions are those actions that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those actions that have not independent utility apart from the proposed action (50 CFR §402.02). Our analysis is based on the assumption that the proposed project will be implemented within two (2) calendar years of the date of the issuance of this biological opinion.

The proposed project would result in fill of 1.36 acres of suitable habitat that may be potentially occupied by vernal pool fairy shrimp and vernal pool tadpole shrimp. The Service considers an entire vernal pool or seasonal wetland to be directly affected when even a portion of it is filled or subject to similar direct effects.

### **Interrelated and Interdependent Actions**

Additional effects from interrelated and interdependent actions are expected from the proposed project. Approximately 115 acres of vernal pools are present in the entire Sunridge Specific Plan area (Foothill Associates 2004). The Corps issued a permit for the largest project in this area, the approximately 1,225-acre Sares-Regis property that included approximately 71 acres of vernal pools (Corps file number 190110021). This Corps permit authorized fill of approximately 27 acres of vernal pool crustacean habitat, and required the preservation of 44 acres of vernal pools within a 482-acre on-site preserve. With the exception of this preserve and a designated open space area along Laguna Creek near Grant Line Road, the Sunridge Specific Plan land use designations and zoning provide for urban land use throughout the plan's areas. Therefore, the majority of the remaining 44 acres of vernal pools outside the Sares-Regis property are expected to be filled for future urban development (Foothill Associates 2004).

Development of the SDCPA will require the extension of certain utilities and the enlargement of certain roads in areas outside of the SDCPA boundary. Utility improvements include the development of a well field, water supply lines, and water treatment facilities and sewer lines. Well locations have all been sited to avoid affects to aquatic habitats. The water treatment facility will be located on land permitted for take in the Anatolia project (Service file number 1-1-96-F-0062) within the SDCPA boundary. All offsite road improvements and the sewer and water lines will be constructed in existing rights-of-way with affects to aquatic resources totaling less than one-half of an acre (Foothill Associates 2004).

All infrastructure improvements are required to serve the already permitted Anatolia project. Affects resulting from offsite infrastructure development and road widening to Sunrise Boulevard from White Rock Road, to Pyramid Road, to Douglas Road from Sunrise Boulevard, and to Americanos Road, are covered under separate Nationwide14 Permits (Corps file number 200300697), which are currently in review by the Service. Two additional road improvement projects will be permitted under Phase I and will provide service to Anatolia and the remaining projects within the SDCPA. Jaeger Road, an existing two-lane, partially paved road, will be paved from Douglas Road south to Pyramid Road. Pyramid Road, an existing dirt road, will be improved from Sunrise Boulevard to Jaeger Road. The two road improvements will affect less than one-tenth an acre (Foothill Associates 2004).

Continuing development in southern Sacramento County requires the installation of supporting infrastructure, such as sewer interceptors. The proposed Laguna Creek Interceptor would carry waste from developments that are scheduled for the Laguna area. The exact route of the proposed Laguna Creek Interceptor is not known at this time; however the proposed project could have both direct and indirect effects on listed vernal pool crustaceans, and other listed species. The proposed Laguna Creek Interceptor, approximately 87,000 feet in length, would extend eastward from the Sacramento Regional Water Treatment Plant (SRWTP) to east of Sunrise Boulevard (SRCSD 2000). The proposed Laguna Creek Interceptor would service an area which extends northwest from the intersection of Bradshaw and Calvin Roads nearly to the intersection of White Rock and Scott Roads, including the entire proposed Sunrise-Douglas development. This proposed interceptor would also provide tie-ins for the future Deer Creek Interceptor, approximately 90,000 feet in length, which is proposed for construction between 2021 and 2032, and the Aerojet Interceptor, approximately 55,000 feet in length, which is proposed for construction between 2014 through 2033 (SRCSD 2000). These two interceptors would eventually service areas east of Grant Line Road and northeast of Sunrise Road, respectively. Construction for the proposed Laguna Creek Interceptor is proposed for 2010 through 2024.

These future projects may adversely affect several federally-listed species, including the vernal pool crustaceans, the giant garter snake (*Thamnophis gigas*), the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), the California tiger salamander, the California red-legged frog (*Rana aurora draytonii*), the delta smelt (*Hypomesus transpacificus*) and its designated critical habitat, and the slender and Sacramento Orcutt grasses.

Currently, a South Sacramento Habitat Conservation Plan (SSHCP) is being developed. So therefore, while development activities in south Sacramento County may negatively affect vernal pool crustaceans and other listed species and their habitats, if completed, the SSHCP may eventually ensure that development activities would avoid, minimize, and compensate for take of listed species to the greatest extent possible. The SSHCP would address the indirect affects of facilitated planned development that results from the interrelated and interdependent actions that result from the proposed project. At minimum, the SSHCP will address the Federal and State listed species known at this time that may be affected by actions that are reasonably foreseeable as a result of the proposed action. Additional HCP-covered species may be added as the HCP is being developed. The SSHCP will be coordinated with CDFG and will include any appropriate State listed species. The SSHCP will address actions that are within the land use authority of

Sacramento County and are reasonably foreseeable as a result of the proposed action, including land use approvals that are related to entitlements. Additional activities may be added as the SSHCP is developed. The SSHCP will cover a cumulative effects boundary area that is reasonably foreseeable as a result of the proposed project and the future projects.

### **Indirect Effects**

Vernal pool habitat indirectly affected includes all habitat supported by future destroyed upland areas and swales, and all habitat otherwise damaged by loss of watershed, human intrusion, introduced species, and pollution that will be caused by the project. The project will not result in any indirect effects. Vernal pool crustacean habitat within 250 feet of the proposed project boundaries to the north, west, and south could be indirectly impacted by the project. Habitat to the east is divided from the Project Site by a major roadway and therefore indirect impacts are not anticipated. Because lands to the north, west, and south are within the approved SDCP/SSPA, habitat in these areas would be directly removed and offset by adjacent proposed development. Therefore, separate Section 7 consultation will be initiated on lands adjacent to the project site and indirect impacts to these areas are expected to be offset through this process.

**Erosion** - The ground disturbing activities in the watershed of vernal pools associated with the proposed project action area are expected to result in siltation when pools fill during the wet season following construction. Siltation in pools supporting listed crustaceans may result in decreased cyst viability, decreased hatching success, and decreased survivorship among early life history stages, thereby reducing the number of mature adults in future wet seasons. The proposed project construction activities could result in increased sedimentation transport into vernal pool crustacean habitats during periods of heavy rains.

**Changes in hydrology** - The biota of vernal pools and swales can change when the hydrologic regime is altered (Bauder 1986, 1987). Survival of aquatic organisms like the vernal pool fairy shrimp and vernal pool tadpole shrimp are directly linked to the water regime of their habitat (Zelder 1987). Therefore, construction near vernal pool areas will, at times, result in the decline of local sub-populations of vernal pool organisms, including fairy shrimp and tadpole shrimp.

**Introduction of non-natives** - There is an increased risk of introducing weedy, non-native plants into the vernal pools both during and after project construction due to the soil disturbance from clearing and grubbing operations, and general vegetation disturbance associated with the use of heavy equipment.

**Chemical contamination** - The runoff from chemical contamination can kill listed species by poisoning. Oils and other hazardous materials associated with construction equipment could be conveyed into the vernal pool crustacean habitats by overland runoff during the rainy season, thereby adversely affected water quality. Many of these chemical compounds are thought to have adverse affects on all of the listed vernal pool crustaceans and/or their cysts. Individuals may be killed directly or suffer reduced fitness through physiological stress or a reduction in their food base due to the presence of these chemicals.

In addition to the adverse effects detailed above, the proposed project will contribute to a local and range-wide trend of habitat loss and degradation, the principal reasons that the vernal pool fairy shrimp and vernal pool tadpole shrimp have declined. The proposed project will contribute to the fragmentation and reduction of the acreage of the remaining listed vernal pool crustacean habitat located in south Sacramento County and throughout the range of these two listed vernal pool crustaceans.

### **Cumulative Effects**

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

A number of on-going and proposed projects could contribute to adverse affects to vernal pool crustaceans within Sacramento County, particularly in the vicinity of the proposed project. In most cases, however, these actions would be subject to Federal review and would, therefore, not be considered cumulative to the proposed project. For instance, several large highway and light rail construction, road improvement, water transfer, and utility and interceptor installation projects are currently planned or underway in south Sacramento County. These projects will contribute to the loss and degradation of habitats of listed species across their range, particularly in south Sacramento County. These activities may alter vernal pool crustacean habitats and can potentially harass, harm, injure, or kill these species. Because these activities have a Federal nexus, the Service will analyze these projects to determine if they will result in the jeopardy of federally-listed species and/or adverse modification and destruction of critical habitat for these species. An undetermined number of future projects that alter the habitat of vernal pool crustaceans, however, could go forward without the need for a Corps 404 permit. Activities that would potentially affect listed vernal pool crustaceans include development associated with urban, water, flood control, highway/roadway and utility projects, application of herbicides/pesticides, conversion to agricultural use, and indirect effects of adjacent development such as urban run-off altering the hydrologic regime.

The Service is aware of other projects currently under review by the State, County, and local authorities where biological surveys have documented the occurrence of federally-listed species. These projects include such actions as urban expansion, water transfer projects that may not have a Federal nexus, and continued agricultural development. The cumulative effects of these known actions pose a significant threat to the eventual recovery of these species. Because the vernal pool tadpole shrimp and vernal pool fairy shrimp are endemic to vernal pools in the Central Valley, coastal ranges, and a limited number of sites in the transverse range and Santa Rosa plateau of California, the Service anticipates that a wide range of activities will affect these species. Such activities include, but are not limited to: (1) urban development, (2) water projects, (3) flood control projects, (4) highway projects, (5) utility projects, (6) chemical contaminants, and (7) conversion of vernal pools to agricultural use. Many of these activities will be reviewed under section 7 of the Act as a result of the Federal nexus provided by section 404 of the Federal Water Pollution Control Act, as amended (Clean Water Act).

The proposed project is located in a region where future destruction and modification of vernal pool crustacean habitat is anticipated. Sacramento County will continue to develop within the County's sphere of influence. This development will result in increased direct loss of habitats for these listed species. Continued loss of these habitats throughout the region could conceivably affect the genetic diversity of the local population(s) of listed vernal pool crustaceans. Any loss of genetic diversity can have significant effects on a population's ability to respond to environmental change over time (Frankel and Soule 1981). Within the proposed action area, the predominant types of non-federal actions that might affect the listed vernal pool crustaceans consist of residential and commercial development.

## Conclusion

After reviewing the current status of the vernal pool tadpole shrimp and vernal pool fairy shrimp, the environmental baseline for the area covered by this biological opinion, the effects of the proposed project, and the cumulative effects, it is the Service's biological opinion that the Anatolia IV project, as proposed, is not likely to jeopardize the continued existence of the vernal pool tadpole shrimp and vernal pool fairy shrimp. The proposed project is not located within designated critical habitat for the vernal pool fairy shrimp and vernal pool tadpole shrimp, and therefore, no destruction or adverse modification of critical habitat is anticipated.

## INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.



The Service anticipates incidental take of the vernal pool fairy shrimp and vernal pool tadpole shrimp will be difficult to detect or quantify. The cryptic nature of these species and their relatively small body size make the finding of a dead specimen unlikely. The species occur in habitats that make them difficult to detect. Due to the difficulty in quantifying the number of individuals that will be taken as a result of the proposed action, the Service is quantifying take incidental to the project as the number of acres of vernal pools/ponded depressions (vernal pool crustacean habitat) that will become unsuitable for vernal pool crustaceans due to direct or indirect effects as a result of the action. Therefore, the Service estimates that all vernal pool fairy shrimp and vernal pool tadpole shrimp inhabiting 1.36 acres of vernal pool habitat will become harassed, harmed, injured, or killed, as a result of the proposed action.

The Service has determined that this level of anticipated take is not likely to result in jeopardy to the vernal pool fairy shrimp or the vernal pool tadpole shrimp. This action will not result in destruction or adverse modification of critical habitat.

### Reasonable and Prudent Measures

1. Minimize the direct and indirect impacts to federally listed vernal pool crustaceans resulting from habitat modification and habitat loss in the Sunrise Douglas Community Plan Area.

In order to be exempt from the prohibitions of section 9 of the Act, the Corps must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

1. The Corps shall fully implement the March 2004 map titled, "Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection" and the principles and standards outlined in the document titled, "June 2004 Conceptual

Strategy for Avoiding Minimizing and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area”, for this project.

2. The Corps shall assure all conservation measures as proposed by the project proponent in the September 8, 2004, *Anatolia IV Section 7 Biological Assessment*, and the October 13, 2004, and December 7, 2004, electronic mails from Foothill Associates to the Service, and identified by the Service in the project description of our biological opinion are fully implemented.
3. The Corps shall assure the following “Best Management Practices” are implemented during project construction:
  - a. The project proponent shall include a copy of this biological opinion within its solicitations for construction of the proposed project, making the prime contractor responsible for implementing all requirements and obligations included within the biological opinion, and to educate and inform all other contractors involved in the project as to the requirements of the biological opinion. The project proponents shall make the terms and conditions in this biological opinion a required item in all contracts for the project that are issued by the County to all contractors. The project proponents shall provide the Division Chief of Endangered Species (Central Valley) at the Sacramento Fish and Wildlife Office with a hardcopy of the contract(s) for this project at least ten (10) working days before it is accepted or awarded.
  - b. At least 30 calendar days prior to initiating construction activities, the project proponents shall submit the names and curriculum vitae of the biological monitor(s) for the project.
  - c. A Service-approved biologist must be on-site during all construction-related activities that occur within 250 feet of vernal pool crustacean habitat, and that could result in the take of these federally-listed species. The biologist will have the authority to halt any action that might result in take of listed species. If the biologist exercises this authority, the Service and the CDFG shall be notified by telephone and letter within one (1) working day.
  - d. A Worker Environmental Awareness Training Program for construction personnel shall be conducted before the commencement of construction. The program shall provide workers with information on their responsibilities with regard to the listed vernal pool crustaceans, an overview of the life-history of the species, information on take prohibitions, and an explanation of the relevant terms and conditions of this biological opinion. Written documentation of the training must be submitted to the Sacramento Fish and Wildlife Office within three (3) working days of the completion of instruction.
  - e. Prior to groundbreaking, high-visibility fencing that is at least 4 feet tall shall be placed along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto adjacent off-site habitat.

The fencing shall be established at a minimum distance of 250 feet from the edge of the vernal pools. Such fencing will be inspected by the on-site biologist at the beginning of each work day and maintained in good condition. The fencing may be removed only when the construction of the project is completed.

- f. During construction operations, the number of access routes, number and size of staging areas, and the total area of the proposed project activity will be limited to the minimum necessary. Routes and boundaries will be clearly demarcated. Movement of heavy equipment to and from the project site will be restricted to established roadways to minimize habitat disturbance, and all vehicle traffic on access road will observe a speed limit of 20 miles per hour. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the wetland avoidance areas. All fueling, cleaning, and maintenance of vehicles and other equipment will occur only within designated areas and at least 250 feet away from any wetland habitats. The applicant will ensure contamination of habitat does not occur during such operations. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately. Such spills will be reported in the post-construction compliance reports.
- g. To control erosion during and after implementation of the project, the applicant will implement best management practices (BMPs), as identified by the Central Valley Regional Water Quality Control Board. Erosion control measures and BMPs, which retain soil or sediment, runoff from dust control, and hazardous materials on the construction site and prevent these from entering the vernal pool complexes, will be placed, monitored, and maintained throughout the construction operations. These measures and BMPs may include, but are not limited to, silt fencing, sterile hay bales, vegetative strips, hydroseeding, and temporary sediment disposal. The Stormwater Pollution Prevention Plan (SWPPP) described in the Description of the Proposed Action section of this Biological Opinion shall include these and any other measures necessary to prevent the discharge of contaminated runoff onto adjacent offsite wetland habitats.
- h. All heavy equipment, vehicles, and supplies will be stored at the designated staging area at the end of each work period. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the open space/wetland preserve and offsite wetland avoidance areas. Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. All fueling, cleaning, maintenance, and staging of vehicles and other equipment will occur only within designated areas and at least 250 feet away from the open space/wetland preserve and any off-site vernal pool crustacean habitats. All machinery will be properly maintained and cleaned to prevent spills and leaks. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill

occur. Any spills or hazardous materials will be cleaned up immediately in accordance with applicable local, state and/or federal regulations. Such spills will be reported in the post-construction compliance reports.

- i. No clearing of vegetation and scraping, or digging, of soil in the avoided/preserve area.

5. The Corps shall ensure the applicant complies with the *Reporting Requirements* of this biological opinion.

6. The applicant has proposed to offset direct and/or indirect effects of vernal pool crustacean habitat loss through habitat preservation offsite. Prior to any fill of wetlands on the proposed project site, credits commensurate with acreage commitment shall be dedicated within a Service-approved habitat preservation bank and documentation provided to the Service. If the applicant chooses not to use an approved preservation bank, then at least 120 days prior to construction, the applicant shall submit documentation of the preservation habitat including conservation easement, management plan, funding instrument, easement holder etc. for our approval.

7. The applicant has proposed to offset direct and/or indirect effects of vernal pool crustacean habitat through habitat restoration or creation. Prior to any fill of wetlands on the proposed project site, credits commensurate with acreage commitment shall be dedicated within a Service-approved habitat restoration/creation bank. If the applicant chooses not to use an approved creation/restoration bank, then at least 120 days prior to construction, the applicant shall submit documentation of the creation/restoration habitat including: construction plan, conservation easement, management plan, funding instrument, easement holder etc. for our approval. The following criteria will be used by the Service when approving a restoration/creation site:

- a. The restoration site's soils will be appropriate vernal pool soil types (e.g., San Joaquin, Redding, Corning);
- b. The restoration site's soil would have been disturbed at some point in the past, either through land leveling, ditching and draining, berming, or other disturbance that has removed or modified edaphic and hydrologic features necessary to support vernal pool habitat; and
- c. The restoration site will have a Service-approved conservation easement, a preserve management plan, and a long-term funding mechanism in place upon Service approval.

### Reporting Requirements

A post-construction compliance report prepared by the monitoring biologists must be submitted to the Chief of the Endangered Species Division (Central Valley) at the Sacramento Fish and Wildlife Office within thirty (30) calendar days of the completion of construction activity or within thirty (30) calendar days of any break in construction activity lasting more than thirty (30) calendar days. This report shall detail (i) dates that groundbreaking at the project started and the project was completed; (ii) pertinent information concerning the success of the project in meeting

compensation and other conservation measures; (iii) an explanation of failure to meet such measures, if any; (iv) known project effects on the giant garter snake and the valley elderberry longhorn beetle, if any; (v) occurrences of incidental take of any these species; and (vi) other pertinent information.

The project applicant must report to the Service immediately any information about take or suspected take of federally-listed species not authorized in this biological opinion. The project applicant must notify the Service within 24 hours of receiving such information. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal. The Service contact is the Resident Agent-in-charge of the Service's Law Enforcement Division at (916) 414-6660.

Any contractor or employee, who during routine operations and maintenance activities, inadvertently kills or injures a federally-listed species must immediately report the incident to their representative. This representative must contact the California Department of Fish and Game immediately in the case of a dead or injured listed species. The California Department of Fish and Game contact for immediate assistance is State Dispatch at (916) 445-0045.

#### CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases. The Service recommends the following conservation measures:

1. The Corps should work with the Service to address significant, unavoidable environmental effects resulting from projects proposed by non-Federal parties.
2. As recovery plans for listed vernal pool crustacean species are developed, the Corps should assist the Service in their implementation.
3. The Corps should work with the Service to ensure that its wetland delineation techniques fully assess the affects of proposed projects on listed vernal pool crustacean species.
4. The Corps, in partnership with the Service, should develop maintenance guidelines for the Corps projects that will reduce adverse effects of routine maintenance on vernal pool crustaceans and their habitats. Such action may contribute to the delisting and recovery of the species by preventing degradation of existing habitat and increasing the amount and stability of suitable habitat.
5. The Corps should conduct a study of cumulative loss of wetlands habitat, including habitat of listed crustaceans, in Sacramento County.


In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

#### REINITIATION—CLOSING STATEMENT

This concludes formal consultation on the proposed Anatolia IV project. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or, (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding the proposed Anatolia IV project, please contact me at (916) 414-6700

Sincerely,

  
for Wayne S. White  
Field Supervisor

cc:

ARD (ES), Portland, OR

Ms. Terry Roscoe, California Dept. of Fish and Game, Rancho Cordova, CA

Ms. Elizabeth Goldman, Environmental Protection Agency, San Francisco, CA

Enclosures:



## LITERATURE CITED

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## Addresses:

ARD (ES), Portland, Oregon

Ms. Terry Roscoe  
California Dept. of Fish and Game, Region 2  
1701 Nimbus Road  
Rancho Cordova, California 95670

Ms. Elizabeth Goldman  
U.S. Environmental Protection Agency- Region IX  
75 Hawthorne Street  
San Francisco, California 94105

# A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area

June 2004

In March through May 2004, representatives of the US Fish and Wildlife Service, US Environmental Protection Agency, and the US Army Corps Engineers (Agencies) met to formulate a conceptual-level strategy for avoiding, minimizing, and preserving aquatic resource habitat in the Sunrise-Douglas Community Plan Area (SDCPA). The intended result of this effort was to achieve reasonable protection and conservation of federally threatened and endangered species under the Endangered Species Act, while taking a regional approach to avoidance and minimization of impacts to waters of the US, including wetlands, in accordance with Section 404 (b)(1) guidelines under the Clean Water Act. The strategy also endeavors to ensure a viable South Sacramento County Habitat Conservation Plan (HCP) can be developed, given that a large proportion of vernal pool habitat under consideration by the HCP planners is at risk in the SDCPA.

The conceptual-level strategy is represented by preserve areas shown on the map titled Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection dated March 2004 (see attached). To meet the goals of ESA and the Clean Water Act, the Agencies arrived at the boundaries of the "Preserve Areas" based on best professional judgment and a limited amount of information regarding regional and site-specific biology and hydro-geomorphology (such as wetland delineations, species accounts, and environmental impact reports), while recognizing that development is planned in the area. Of particular focus is the preservation of vernal pool complexes and corridors for Morrison Creek and Laguna Creek. The mapped boundaries are the smallest that would be acceptable to the Agencies and are predicated on ten principles and standards that would be followed by developers and planners as each element of the overall development proceeds.

The conceptual level strategy should be used by developers and planners to design and plan projects in the SDCPA. The Agencies will use the strategy to aid in the review of proposed development and evaluate the probable individual and cumulative effects on aquatic resources and sensitive species.

The Agencies anticipate that permit decisions and biological opinions will be completed on a case-by-case basis, using site-specific project and aquatic resource habitat information. Each proposed project would be evaluated on its own merits within the larger context of the SDCPA. Depending on the particular hydrology, habitat features, and development plans for a particular parcel, the conceptual preserve boundaries may need to be adjusted to minimize direct and indirect impacts to aquatic resources. Appropriate compensatory mitigation will be developed following demonstrated avoidance and minimization of project impacts.

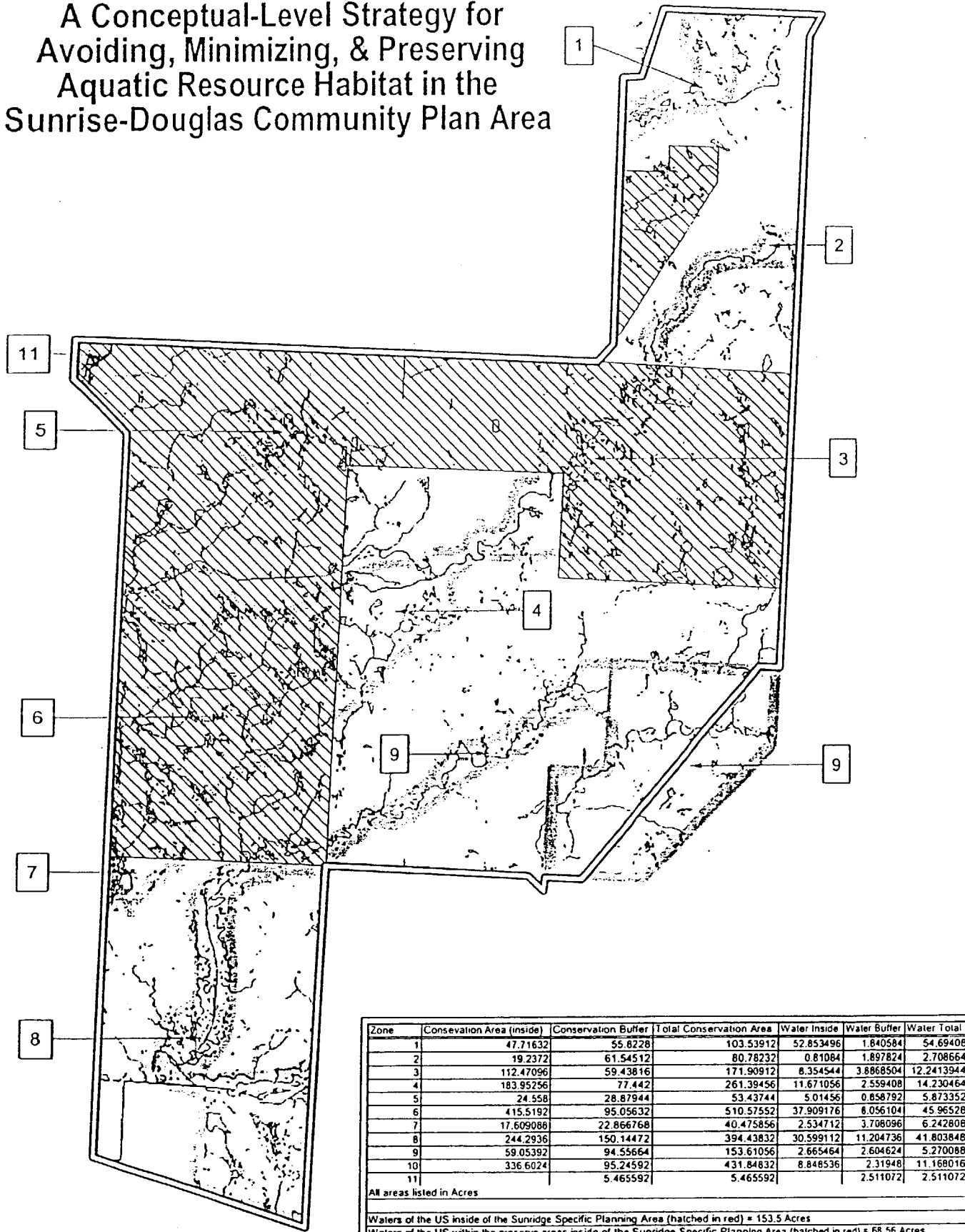
## Strategy Principles and Standards:

1. Maintain natural (existing) watershed integrity and flows to downstream reaches (distribution, frequency and duration), including restricting summer nuisance flows.
2. Maintain corridors and large areas for wildlife and the propagation of flora. Preserve vernal pool hydrology and integrity to benefit listed plants and invertebrates. Establish interconnected conservation areas that are managed in perpetuity and tie into existing local and regional planning efforts. Provide for meaningful conservation of sensitive plant habitats for species integrity and long-term survival.

3. Manage stormwater to retain the natural flow regime and water quality including not altering baseline flows in the receiving waters, not allowing untreated discharges to occur into existing aquatic resources, and not using existing aquatic resources for detention or transport of flows above current hydrology, duration, and frequency. All stormwater flows generated on-site and entering preserve boundaries would be pre-treated to reduce oil, sediment, and other contaminants.
4. Use elevated roads, arched crossings and other practices for transportation corridors that must traverse Preserve Areas to minimize direct and indirect impacts to aquatic resources and maintain the integrity of Preserve Areas. Hydrologic and biologic functions and values of the Preserve Areas would not be significantly impacted by road crossings.
5. Use conservation design elements. These elements include construction techniques such as using single-loaded roads where housing abuts Preserve Areas, designing roadside landscaping to drain (surface and subsurface) toward urban features and not toward the preserve boundary, and orienting houses such that the front living area faces the Preserve Area. Fences would be low and not restrict visibility into the Preserve Area. Impervious surfaces would be minimized. Stormwater/water runoff plans would be designed to maintain watershed integrity by employing such means as vegetated swales, infiltration trenches, and constructed wetland filter strips to treat stormwater and water runoff from the large increases in impervious surfaces.
6. Locate compatible land uses next to preserves. Acceptable land uses include parks, hiking trails, athletic fields, and other forms of open space. Developed trails would be outside the preserve boundary. Any irrigated fields or landscaping must not drain toward preserves. Cut and fill activities adjacent to the preserve boundaries would be minimized.
7. Mow-only firebreaks may be located at the outer edges of Preserve Areas. Mowing within the Preserve Areas should be conducted consistent with achieving the goals of the preserve management plan, including promoting native/discouraging non-native species. Firebreaks that necessitate herbicide application or tilling, plowing or other soil disturbance would be located outside of the Preserve Areas.
8. Ensure Preservation Areas are protected in perpetuity. This includes establishing buffers and not locating lot lines within the preserve boundary. Areas would be protected in perpetuity through conservation easement that is adequately funded for maintenance and managed by a conservation-oriented third-party. Preserve Areas would be fenced and signed.
9. Implement mitigation measures (avoidance, minimization, and compensation) that adequately offset direct and indirect impacts to aquatic resources and listed species. In general, establishing the Preserve Areas is considered a regional measure to achieve impact avoidance and minimization. Vernal pools that are directly impacted by projects should be mitigated at ratios equal to or greater than 2:1 for preservation and 1:1 for creation/restoration. Vernal pools indirectly affected should be mitigated at ratios equal to or greater than 1:1 for preservation and 1:1 for creation/restoration. Preservation and creation/restoration will generally be completed in the same watershed but not within, or in a way that would affect, existing wetland complexes. On a case-by-case basis, preservation credit may be given for vernal pools in the Preserve Areas (except for the 250-foot wide indirect impact zone). Excellent opportunities exist in or near the SDCPA for the establishment of a vernal pool conservation bank(s) and a wetland compensatory (i.e., restoration/creation) mitigation bank(s).
10. Recognize the realities and constraints placed on construction design due to infrastructure and market-driven forces.



# A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area

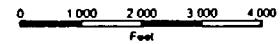


Zone	Conservation Area (inside)	Conservation Buffer	Total Conservation Area	Water Inside	Water Buffer	Water Total
1	47.71632	55.8228	103.53912	52.853496	1.840584	54.69408
2	19.2372	61.54512	80.78232	0.81084	1.897824	2.708664
3	112.47096	59.43816	171.90912	8.354544	3.8868504	12.2413944
4	183.95256	77.442	261.39456	11.671056	2.559408	14.230464
5	24.558	28.87944	53.43744	5.01456	0.858792	5.873352
6	415.5192	95.05632	510.57552	37.909176	8.056104	45.96528
7	17.609088	22.866768	40.475856	2.534712	3.708096	6.242808
8	244.2936	150.14472	394.43832	30.599112	11.204736	41.803848
9	59.05392	94.55664	153.61056	2.665464	2.604624	5.270088
10	336.6024	95.24592	431.84832	8.848536	2.31948	11.168016
11		5.465592	5.465592		2.511072	2.511072

All areas listed in Acres

Waters of the US inside of the Sunrise Specific Planning Area (hatched in red) = 153.5 Acres  
Waters of the US within the preserve areas inside of the Sunrise Specific Planning Area (hatched in red) = 58.56 Acres

Sources: Foothill Associates,  
Ecorp Consulting and USGS  
Projection: Region 9 Albers



DEPARTMENT OF THE ARMY PERMIT

Permittee: Tom Wong  
Cresleigh Homes  
5417 Madison Avenue, Suite 2  
Sacramento, California 95841

Permit Number: 200100230

Issuing Office: U.S. Army Engineer District, Sacramento  
Corps of Engineers  
1325 "J" Street  
Sacramento, California 95814-2922

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below. A notice of appeal options is enclosed.

Project Description: To create a residential subdivision development, which will include 369 single-family homes, three (3) neighborhood parks, and road construction/improvements. The construction of the project will result in the permanent loss of 2.99 acres of waters of the U.S., including wetlands (1.88 acres of vernal pools, 0.22 acre of riverine seasonal wetland, and a 0.89-acre pond). Changes to on-site hydrology are also anticipated to indirectly impact 0.39 acres of waters of the U.S., including wetlands (0.36 acre of vernal pools, 0.01 acre of riverine seasonal wetland, and 0.02 acre of depressional seasonal wetland).

All work is to be completed in accordance with the attached plan(s).

Project Location: The project site is located in southeastern Sacramento County, approximately five (5) miles south of Highway 50, south and adjacent to Douglas Road, west of Grant Line Road, east and adjacent to Jaeger Road. The site is in portions of Section 9 and 16, Township 8 North, Range 7 East on the U.S.G.S. "Buffalo Creek" quadrangle.

**Permit Conditions:**

**General Conditions:**

1. The time limit for completing the work authorized ends on December 31, 2011. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

**Special Conditions:**

1. No action shall be taken pursuant to this permit that impacts the vernal pool habitat covered by this permit pending the outcome of the temporary restraining order proceedings in California Native Plant Society v. U.S. Environmental Protection Agency, C06-0304-MJJ. See Attached Civil Minutes, October 18, 2006.
2. The Project shall comply with the provisions of the Conceptual-Level Strategy for Avoiding, Minimizing and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area dated June, 2004.
3. This Corps permit does not authorize you to take any threatened or endangered species, in particular the vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardii*), or designated critical habitat. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (e.g., and Endangered Species Act Section 10 permit, or a Biological Opinion under Endangered Species Act Section 7, with incidental take provisions with which you must comply). The enclosed Fish and Wildlife Service Biological Opinion (Number 1-1-02-F-0357, dated December 22, 2004) and Amendment (1-1-06-F-0232, dated August 30, 2006), contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with incidental take that is also specified in the Biological Opinion. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached Biological Opinion, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the Biological Opinion, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The Fish and Wildlife Service is the appropriate authority to determine compliance with the terms and conditions of its Biological Opinion, and with the Endangered Species Act. The permittee must comply with all conditions of this Biological Opinion, including those ascribed to the Corps.
4. As compensatory mitigation for the direct loss of 2.99 acres of waters of the United States and indirect impacts to 0.39 acres (3.38 acres total), you shall construct at least 3.38 acres of vernal pool habitat at the Gill Ranch Mitigation Area (off-site mitigation area). Also, to fulfill wetland preservation requirements you shall purchase 9.18 acres of vernal pool crustacean habitat at the Bryte Ranch Conservation Bank.
5. You shall develop a final comprehensive compensatory mitigation and monitoring plan, which must be approved by the Army Corps of Engineers prior to initiation of any construction activities. The plan shall

include mitigation location and design drawings, vegetation plans, including target species to be planted, and final success criteria, presented in the format of the Sacramento District's Habitat Mitigation and Monitoring Proposal Guidelines, dated December 30, 2004. The purpose of this requirement is to insure replacement of functions and values of the aquatic environment that would be lost through project implementation.

6. You shall construct the required compensatory mitigation concurrently with, or in advance of, the start of construction of the permitted activity.
7. You shall complete construction of the compensatory mitigation no later than November 15th of the year the mitigation construction is initiated.
8. To insure that the compensatory mitigation is completed as required, you shall notify the District Engineer of the date you start construction of the authorized work and the start date and completion date of the mitigation construction, in writing and no later than ten (10) calendar days after each date.
9. To provide a permanent record of the completed compensatory mitigation work, you shall provide two (2) complete sets of as-builts of the completed work within the off-site mitigation area to the Corps of Engineers. The as-builts shall indicate changes made from the original plans in indelible red ink. These as-builts shall be provided to this office no later than 60 days after the completion of construction of the mitigation area wetlands.
10. You shall establish and maintain, in perpetuity, a preserve (compensatory mitigation area) containing the 3.38 acres of created/restored aquatic habitat required by "Special Condition 4".
11. To minimize external disturbance to created/restored waters of the United States, you shall establish an adequate buffer, consisting of native upland vegetation surrounding the entire perimeter of all created/restored waters of the United States, including wetlands within the proposed off-site preserve. This buffer shall be proposed within the compensatory mitigation and monitoring plan and the preserve management plans. These buffer widths shall be explicitly approved in writing by the Corps prior to any work in waters.
12. To insure that the preserve (compensatory mitigation area) is properly managed, you shall develop a specific and detailed preserve management plan for the off-site compensatory mitigation area. This plan shall be submitted to and specifically approved, in writing, by the Corps of Engineers prior to engaging in any work authorized by this permit. This plan shall describe in detail any activities that are proposed within the preserve area and the long term funding and maintenance of each of the preserve area.
13. To protect the integrity of the compensatory mitigation area and avoid unanticipated future impacts, no roads, utility lines, trails, benches, equipment or fuel storage, grading, firebreaks, mowing, grazing, planting, discing, pesticide use, burning, or other structures or activities shall be constructed or occur within the off-site mitigation, preservation, and avoidance areas without specific, advance written approval from the Corps of Engineers.
14. To prevent unauthorized access and disturbance, you shall, within one (1) year of starting the compensatory mitigation construction, install fencing and appropriate signage around the entire perimeter of the compensatory mitigation area and the approved buffer. All fencing shall allow unrestricted visibility of these areas to discourage vandalism or disposing of trash or other debris in these areas. Examples of this type of fencing include chain link and wrought iron.
15. Prior to initiating any activity authorized by this permit, you shall, to insure long-term viability of the compensatory mitigation area:

- a. Establish a fully-funded endowment to provide for maintenance and monitoring of the off-site compensatory mitigation area.
  - b. Designate a Corps approved conservation-oriented third part entity to function as preserve manager and to hold the required conservation easements.
  - c. Record permanent conservation easements and deed restrictions maintaining all mitigation areas as wetland preserve and wildlife habitat in perpetuity. Copies of the proposed deed restriction and conservation easement language shall be approved by the Corps of Engineers prior to recordation.
  - d. Provide copies of the recorded documents to the Corps of Engineers no later than 30 days prior to the start of construction of any of the activities authorized by this permit.
16. To assure success of the created waters of the United States, you shall monitor the compensatory mitigation area for five (5) years or until the success criteria described in the approved mitigation plan are met, whichever is greater. This period shall commence upon completion of the construction of the mitigation wetlands. Additionally, continued success of the mitigation wetlands, without human intervention, must be demonstrated for three (3) consecutive years, once the success criteria have been met. The mitigation plan will not be deemed successful until this criterion has been met.
17. You shall submit compensatory mitigation area monitoring reports to this office for each year of the five-year monitoring period, and for each additional year, if remediation is required, by October 1st of each year. You shall submit an additional monitoring report at the end of the three-year period demonstrating continued success of the mitigation program without human intervention.
18. You must allow representatives from the Corps of Engineers to inspect the authorized activity and any mitigation areas at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.
19. All terms and conditions of the December 28, 2004 Section 401 Water Quality Certification are expressly incorporated as conditions of this permit.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
  - ( ) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
  - (X) Section 404 of the Clean Water Act (33 U.S.C. 1344).
  - ( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).
2. Limits of this authorization.
  - a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

- b. This permit does not grant any property rights or exclusive privileges.
- c. This permit does not authorize any injury to the property or rights of others.
- d. This permit does not authorize interference with any existing or proposed Federal projects.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
- b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
- d. Design or construction deficiencies associated with the permitted work.
- e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data. The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant.

Circumstances that could require a reevaluation include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of this permit.
- b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.


Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

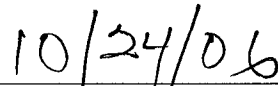
6. Extensions. General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for



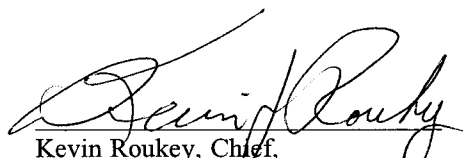
an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

  
\_\_\_\_\_  
Permittee  
for Tom Wong

  
\_\_\_\_\_  
Date

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

  
Kevin Roukey, Chief,  
Central California/Nevada Section  
(For the District Engineer)

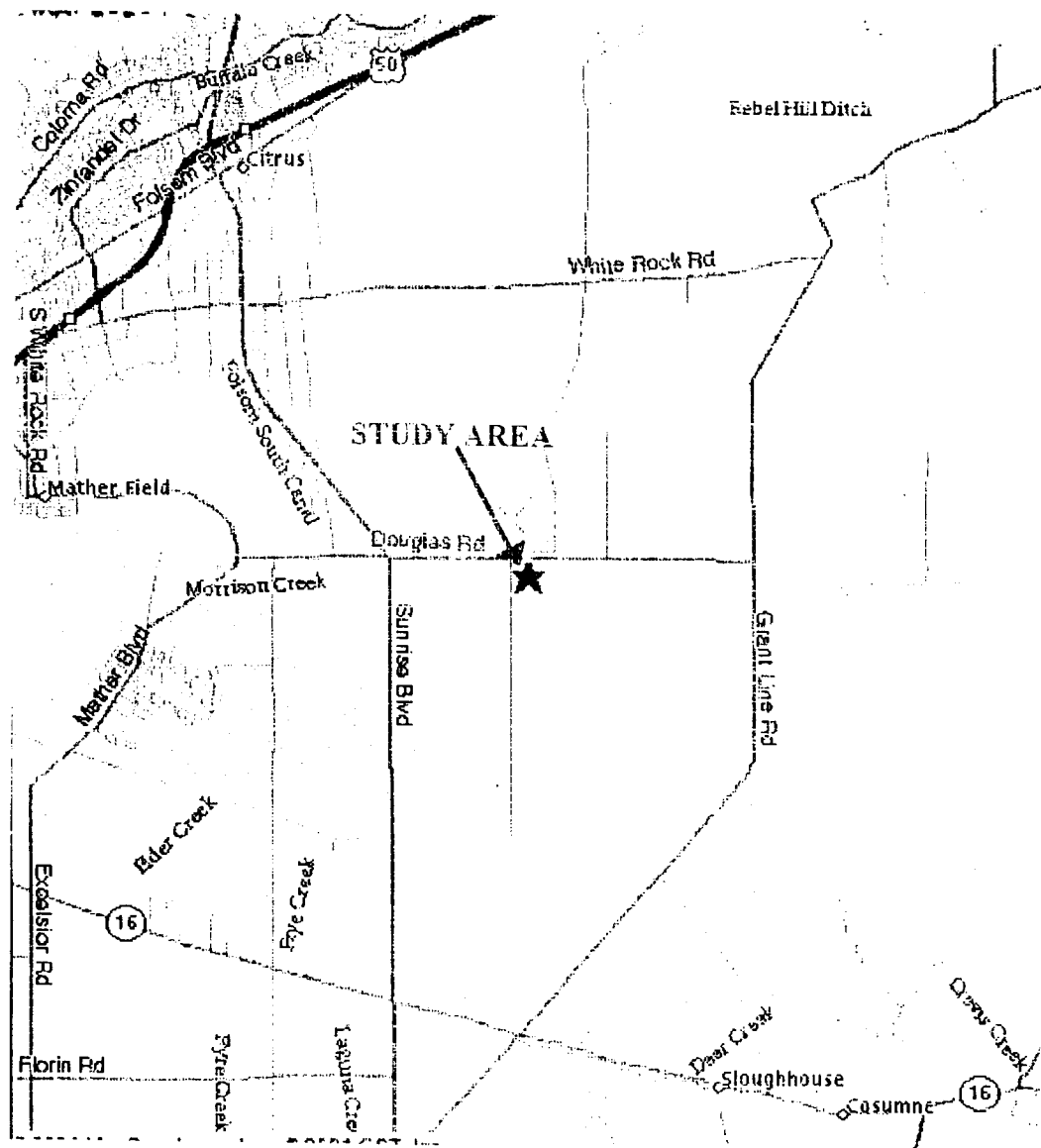
  
\_\_\_\_\_  
Date

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

\_\_\_\_\_  
Transferee

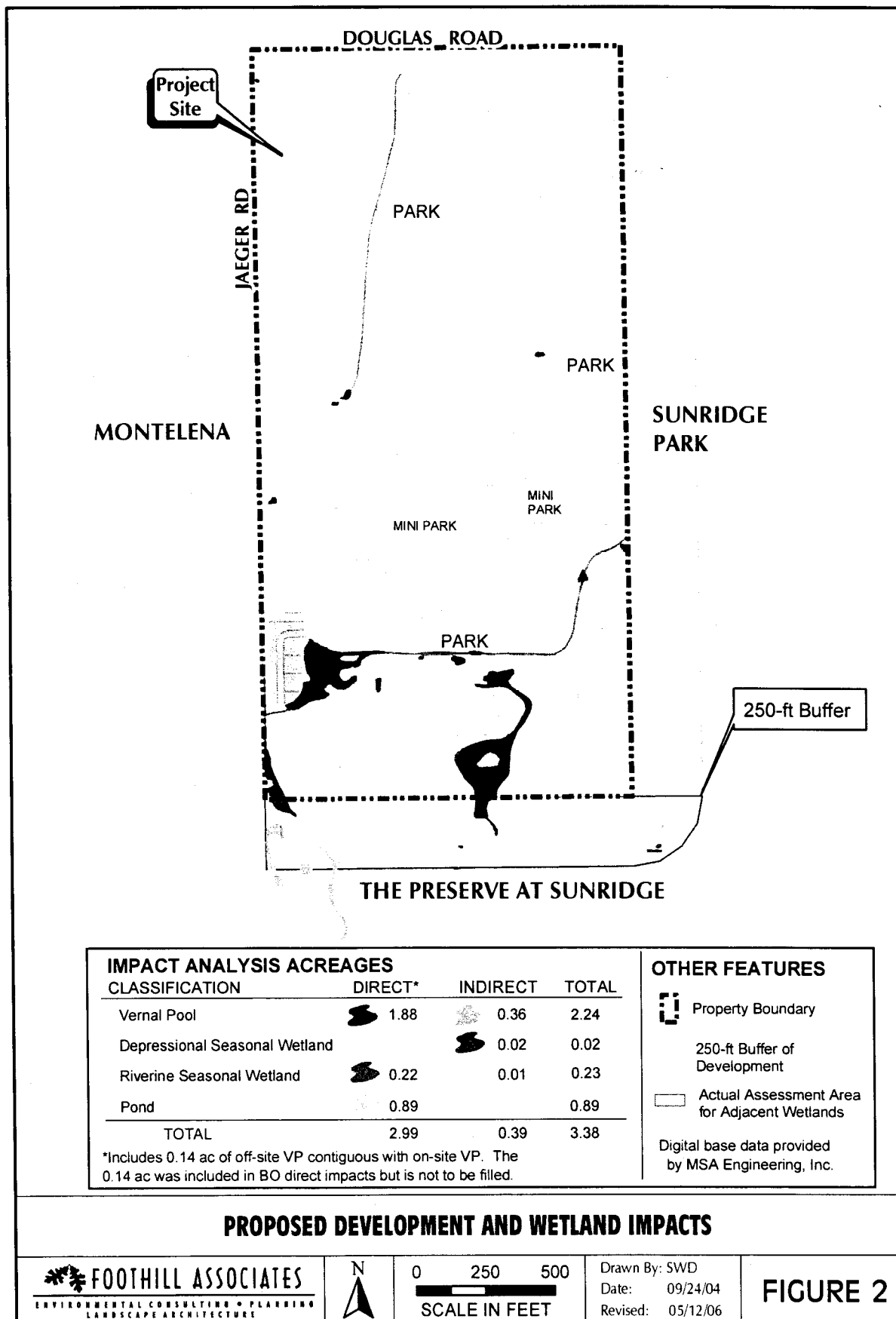
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Date

**FIGURE 1**  
**VICINITY MAP**



#200100230  
Fig. 1 of 2

#200100230  
Fig. 2 of 2



## DEPARTMENT OF THE ARMY PERMIT

**Permittee:** Grantline Investors, LLC  
Brian Vail  
111 Woodmere Drive, Suite 190  
Folsom, California 95630

**Permit Number:** 199400365

**Issuing Office:** Sacramento District

Note: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

**Project Description:** To discharge fill in approximately 5.70 acres of jurisdictional waters of the United States comprised of 5.22 acres of vernal pool habitat, 0.36 acres of riverine seasonal wetland habitat, and 0.04 acres of depressional seasonal wetland habitat, and 0.08 acres of ephemeral drainage on approximately 210.7 acres known as the Grantline 208 project site for residential development, a community park, a school site, and a detention basin; major road improvements, including construction of Americanos Boulevard and the expansion of Grantline Road; construction of a drainage basin along Grantline Road, and establishment of an on-site wetland preserve of approximately 68.1 acres, as shown on the attached drawings.

**Project Location:** The Grantline 208 project is located within the SunRidge Specific Plan Area within the larger Sunrise Douglas Community Plan Area, in Section 15, Township 8 North, Range 7 East, on the USGS Buffalo Creek 7.5' quadrangle near the City of Rancho Cordova in southeastern Sacramento County, California. The description of the proposed work and maps of the site are in the attached Public Notice and further described below.

### Permit Conditions:

#### General Conditions:

1. The time limit for completing the authorized activity ends on October 25, 2011. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification from this permit from this office,

which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have discovered. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished with the terms and conditions of your permit.

**Special Conditions:**

1. The permittee shall utilize siltation and turbidity control measures (e.g., silt fences, hay bales) in all areas where disturbed soils may potentially wash into nearby watercourses or adjacent wetlands via rainfall or runoff. Such measures shall remain in place until the project is complete and exposed soils are stabilized.
2. The permittee shall ensure no debris, soil, silt, sand, rubbish, cement or washings thereof, or petroleum products or washings thereof, are allowed to enter into or placed where it may be washed by rainfall or runoff into nearby watercourses or adjacent wetlands. When project operations are completed, all excess construction materials, debris, or other excess associated project materials shall be removed to an appropriate off-site location outside of any areas subject to Corps jurisdiction.
3. The permittee shall ensure staging and storage of equipment and project materials, and fueling and maintenance of equipment, are located in areas outside of the Corps' jurisdiction.
4. The permittee shall ensure the limits of the project's impact area are delimited by the placement of temporary construction fencing, staking or signage prior to initiation of construction.
5. The permittee shall ensure the project is in full compliance with the provisions of the *Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area* dated June, 2004.
6. This Corps permit does not authorize you to take any threatened or endangered species, in particular the vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool

tadpole shrimp (*Lepidurus packardii*), or designated critical habitat. In order to legally take a listed species, you must have a separate authorization under the Endangered Species Act Section 10 permit, or a Biological Opinion under Endangered Species Act Section 7, with incidental take provisions with which you must comply. The enclosed Fish and Wildlife Service Biological Opinion (Number 1-1-05-F-0015, dated May 18, 2006), contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with incidental take that is also specified in the Biological Opinion. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached Biological Opinion, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the Biological Opinion, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The Fish and Wildlife Service is the appropriate authority to determine compliance with the terms and conditions of its Biological Opinion, and with the Endangered Species Act. The permittee must comply with all conditions of this Biological Opinion, including those ascribed to the Corps.

7. To ensure appropriate replacement of functions and values of the aquatic environment that would be lost through project implementation, the permittee shall develop a final comprehensive mitigation and monitoring plan for his proposed compensatory mitigation at a Corps-approved site. This plan must be approved by the Army Corps of Engineers prior to initiation of construction activities. The plan shall include mitigation location and design drawings, vegetation plans, including target species to be planted, and final success criteria, presented in the format of the Sacramento District's Habitat Mitigation and Monitoring Proposal Guidelines, dated December 30, 2004.
8. To mitigate for the direct loss of 5.70 acres of waters of the United States and indirect impacts to an additional 0.45 acres of waters of the United States that constitute vernal pool branchiopod habitat, the permittee shall construct at least 6.15 acres of vernal pool habitat at a Corps-approved location. The permittee shall complete construction of the compensatory mitigation no later than October 31, 2007.
9. To ensure compensatory mitigation is completed as required, the permittee shall notify the District Engineer or his representative of the date you start construction of the authorized work and the start date and completion date of the compensatory mitigation construction, in writing and no later than ten (10) calendar days after each date.
10. To provide a permanent record of the completed compensatory mitigation work, the permittee shall provide two complete sets of as-built plan drawings of the completed work within the off-site mitigation area(s) to the Corps of Engineers. The as-built plan drawings shall indicate any changes made from the original plans in indelible red ink. These as-built plan drawings shall be provided to this office no later than 60 days after the completion of construction of the mitigation area wetlands.
11. The permittee shall establish and maintain, or cause to be maintained, in perpetuity, compensatory preserves containing not less than 6.15 acres of created and/or restored vernal pool habitat as required by Special Condition 8 at a Corps-approved location,



and 6.9 acres of preserved vernal pool branchiopod habitat at a Corps- and USFWS-approved location.

12. To minimize external disturbance to avoided waters of the United States, the permittee shall incorporate buffers consisting of native upland vegetation of suitable width from the outer limit of jurisdiction of the entire perimeter of all created, preserved, and avoided waters of the United States, including wetlands within the proposed preserves, when practicable.
13. To ensure the preserves are properly managed, the permittee shall comply with the preserve management plan for the off-site mitigation, preservation, and avoidance areas at a Corps- and USFWS-approved location. This plan shall be drafted in accordance with the Sacramento District's Open Space Preserve Operations & Maintenance Template, dated May 19, 2003, and shall describe in detail the activities that are proposed within the preserve area and the long term funding and maintenance of the preserve area. To prevent unauthorized access and disturbance, the applicant shall install fencing and appropriate signage around the perimeter of the preserves.
14. To protect the integrity of the preserves and avoid unanticipated future impacts, no roads, utility lines, trails, benches, equipment or fuel storage, grading, firebreaks, mowing, grazing, planting, discing, pesticide use, burning, or other structures or activities shall be constructed or be allowed to occur within the off-site mitigation, preservation, and avoidance areas without specific, advance written approval from the Corps of Engineers and USFWS.
15. To ensure long-term viability of the mitigation, preservation, and avoidance areas, the permittee shall, prior to initiating any activity authorized by this permit:
  - a. Establish a fully-funded endowment to provide for maintenance and monitoring of the off-site mitigation, preservation, and avoidance areas;
  - b. Designate an appropriate conservation-oriented third party entity to function as reserve manager and to hold the required conservation easements;
  - c. Record permanent conservation easements and deed restrictions maintaining all mitigation, preservation, and avoidance areas as wetland preserve and wildlife habitat in perpetuity. Copies of the proposed deed restriction and conservation easement language shall be provided to the Corps of Engineers for approval prior to recordation; and
  - d. Provide copies of the recorded documents to the Corps of Engineers no later than 30 days prior to the start of construction of any of the activities authorized by this permit.
16. The permittee shall engage a biologist familiar with regional vernal pools and seasonal wetlands to monitor all construction activities within 250 feet of the on-site preserve boundary. The monitor shall ensure no unauthorized activities occur within the preserve boundary during project implementation.
17. To ensure success of the preserved and created waters of the United States, the permittee shall monitor compensatory mitigation, avoidance, and preservation areas for five years or until the success criteria described in the approved mitigation plan are met, whichever is greater. This period shall commence upon completion of the

construction of the mitigation wetlands. Additionally, continued success of the mitigation wetlands, without human intervention, must be demonstrated for three consecutive years, once the success criteria have been met. The mitigation will not be deemed successful until this criterion has been met.

18. The permittee shall submit monitoring reports to this office for each year of the five-year monitoring period, and for each additional year, if remediation is required, by July 31 of each year. The permittee shall submit an additional monitoring report at the end of the final three-year period demonstrating continued success of the mitigation program without human intervention.
19. The permittee shall allow representatives from the Corps of Engineers to inspect the authorized activity and any mitigation, preservation, or avoidance areas at any time deemed necessary to ensure it is being or has been accomplished in accordance with the terms and conditions of your permit.
20. No action shall be taken pursuant to this permit that impacts the vernal pool habitat covered by this permit pending the outcome of the temporary restraining order proceedings in California Native Plant Society v. U.S. Environmental Protection Agency, C06-0304-MJJ. See Attached Civil Minutes, October 18, 2006.
21. A copy of this permit shall be accessible on the job site at all times during construction. The permittee shall provide a copy of this permit to all contractors and forepersons, and require they read this authorization in its entirety and acknowledge they understand its contents and their responsibility to ensure compliance with all general and special conditions contained herein.

**Further Information:**

1. Congressional Authorities. You have been authorized to undertake the activity described above pursuant to:
  - ☐ Section 10 of the River and Harbor Act of 1899 (33 U.S.C. 403)
  - ☒ Section 404 of the Clean Water Act (33 U.S.C. 1344)
  - ☐ Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413)
2. Limits of this authorization.
  - a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
  - b. This permit does not grant any property rights or exclusive privileges.
  - c. This permit does not authorize any injury to the property or rights of others.
  - d. This permit does not authorize interference with any existing or proposed Federal project.
3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:
  - a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
  - b. Damages to the permitted project or uses thereof as a result of current or future

activities undertaken by or on behalf of the United States in the public interest.

- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
- d. Design or construction deficiencies associated with the permitted work.
- e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data. The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

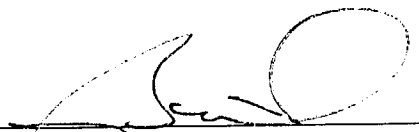
5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of this permit.
- b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measure ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

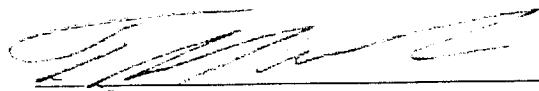
6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give you favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

  
\_\_\_\_\_  
PERMITTEE

10/25/2006  
DATE

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

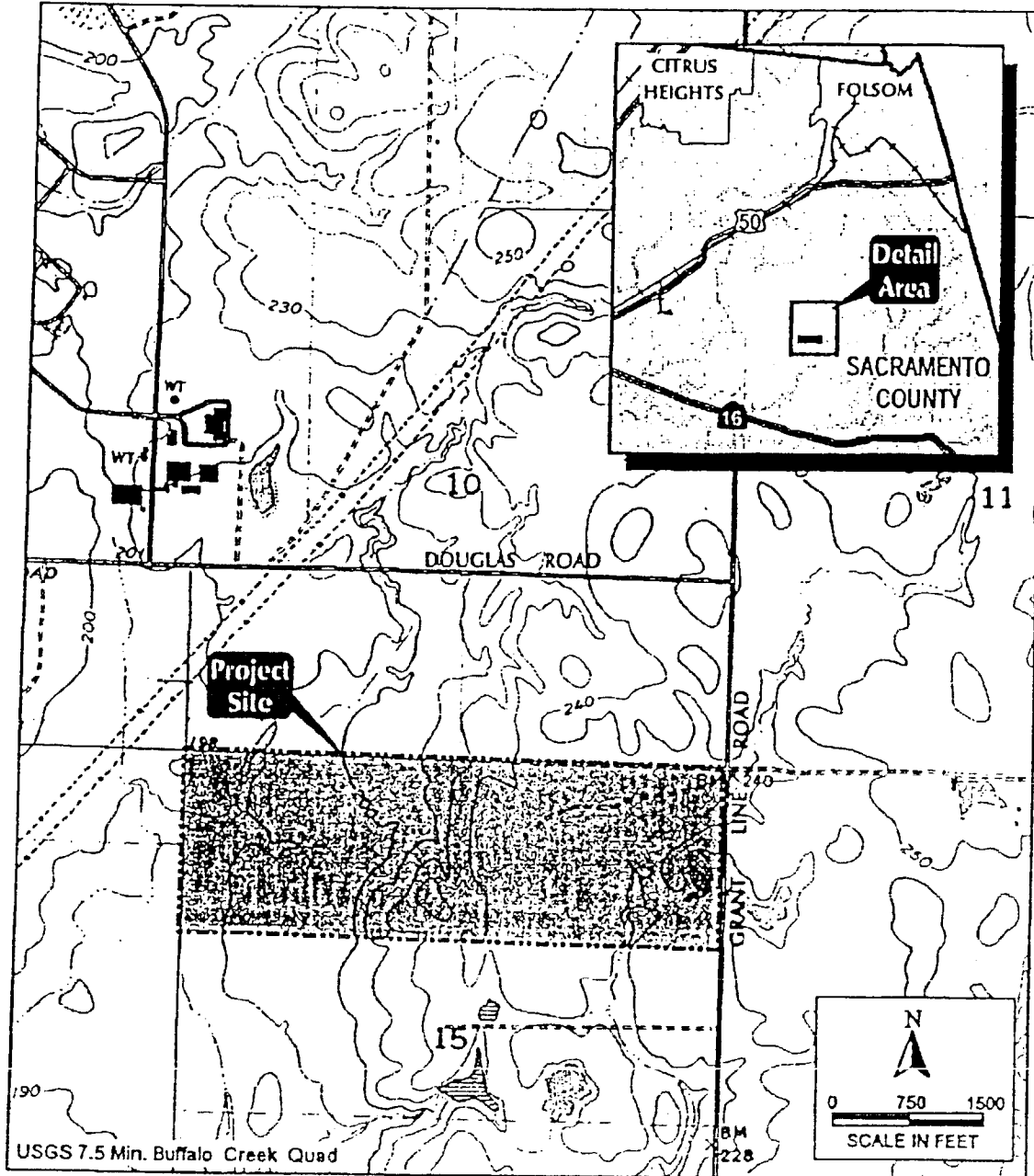
  
\_\_\_\_\_  
for Kevin J. Roukey  
Section Chief, Regulatory Branch  
Sacramento District

25 Oct 06  
DATE

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

\_\_\_\_\_  
TRANSFEREE

\_\_\_\_\_  
DATE



DRAWING TITLE: SITE & VICINITY

PROJECT: GRANTLINE 208

LOCATION: SACRAMENTO COUNTY

DATE: 03/18/05



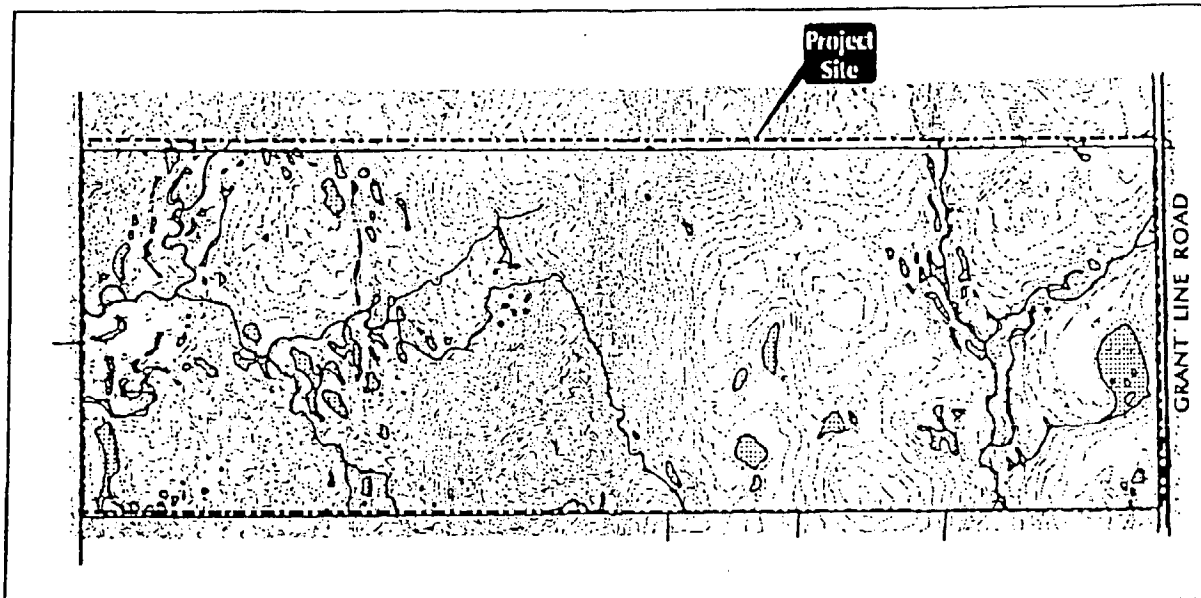
**FOOTHILL ASSOCIATES**







ENVIRONMENTAL CONSULTING • PLANNING  
LANDSCAPE ARCHITECTURE

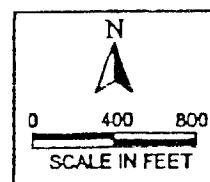
© 2005

Public Notice 199400365  
Figure 1

CNS08718



WATERS OF THE U.S.		OTHER FEATURES
CLASSIFICATION	ACREAGE	
DEPRESSIONAL WETLANDS		 Project Boundary
 Seasonal Wetland	0.05	
 Seasonal Marsh	0.08	
 Vernal Pool	10.07	
RIVERINE WETLANDS		
 Seasonal Wetlands	0.66	
OTHER WATERS OF THE U.S.		
 Ephemeral Drainage	0.24	
TOTAL:	11.10	



Digital base data provided by Wood Rodgers, Inc.

DRAWING TITLE: WETLAND DELINEATION

PROJECT: GRANTLINE 208

LOCATION: SACRAMENTO COUNTY

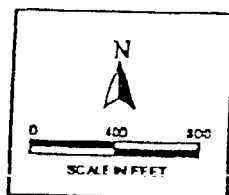
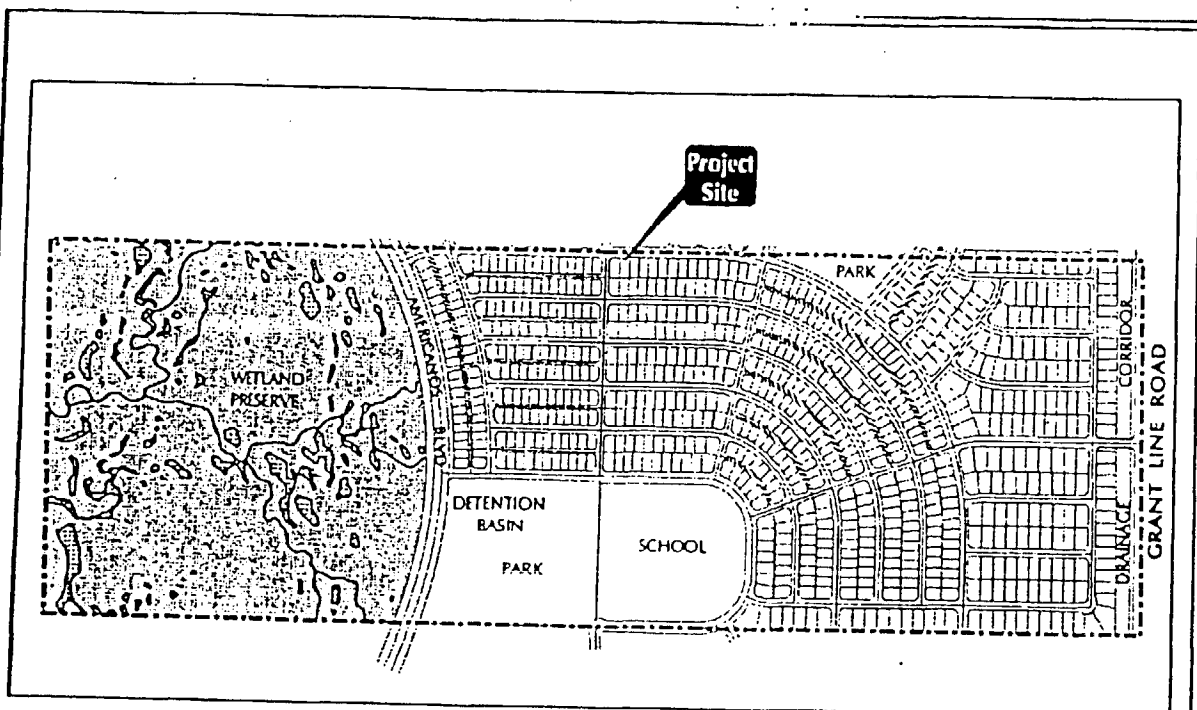
DATE: 03/18/05

**FOOTHILL ASSOCIATES**  
 ENVIRONMENTAL CONSULTING • PLANNING  
 LANDSCAPE ARCHITECTURE  
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Public Notice 199400365  
 Figure 2

CNS08719





WATERS OF THE U.S.			
CLASSIFICATION	PRESERVED	IMPACTED	TOTAL ACREAGE
DEPRESSIONAL WETLANDS			
Seasonal Wetland	0.01	0.04	0.05
Seasonal Marsh	0.08		0.08
Vernal Pool	4.85	5.22	10.07
RIVERINE WETLANDS			
Seasonal Wetland	0.30	0.36	0.66
OTHER WATERS OF THE U.S.			
Ephemeral Drainage	0.18	0.08	0.24
TOTALS	5.40	5.70	11.10
OTHER FEATURES			
<div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; border: 1px solid black; margin-right: 5px;"></div> Open Space/Wetland Preserve (~68.0 ac) </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; border: 2px dashed black; margin-right: 5px;"></div> Property Boundary </div>			

Digital base data provided by Wood Rodgers, Inc.

**DRAWING TITLE: PROPOSED DEVELOPMENT AND WETLAND PRESERVATION**

**PROJECT: GRANTLINE 208**

**LOCATION: SACRAMENTO COUNTY**

**DATE: 03/18/05**

**FOOTHILL ASSOCIATES**  
 ENVIRONMENTAL CONSULTING • PLANNING  
 LANDSCAPE ARCHITECTURE  
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Public Notice 199400365

Figure 3

CNS08720

# A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area

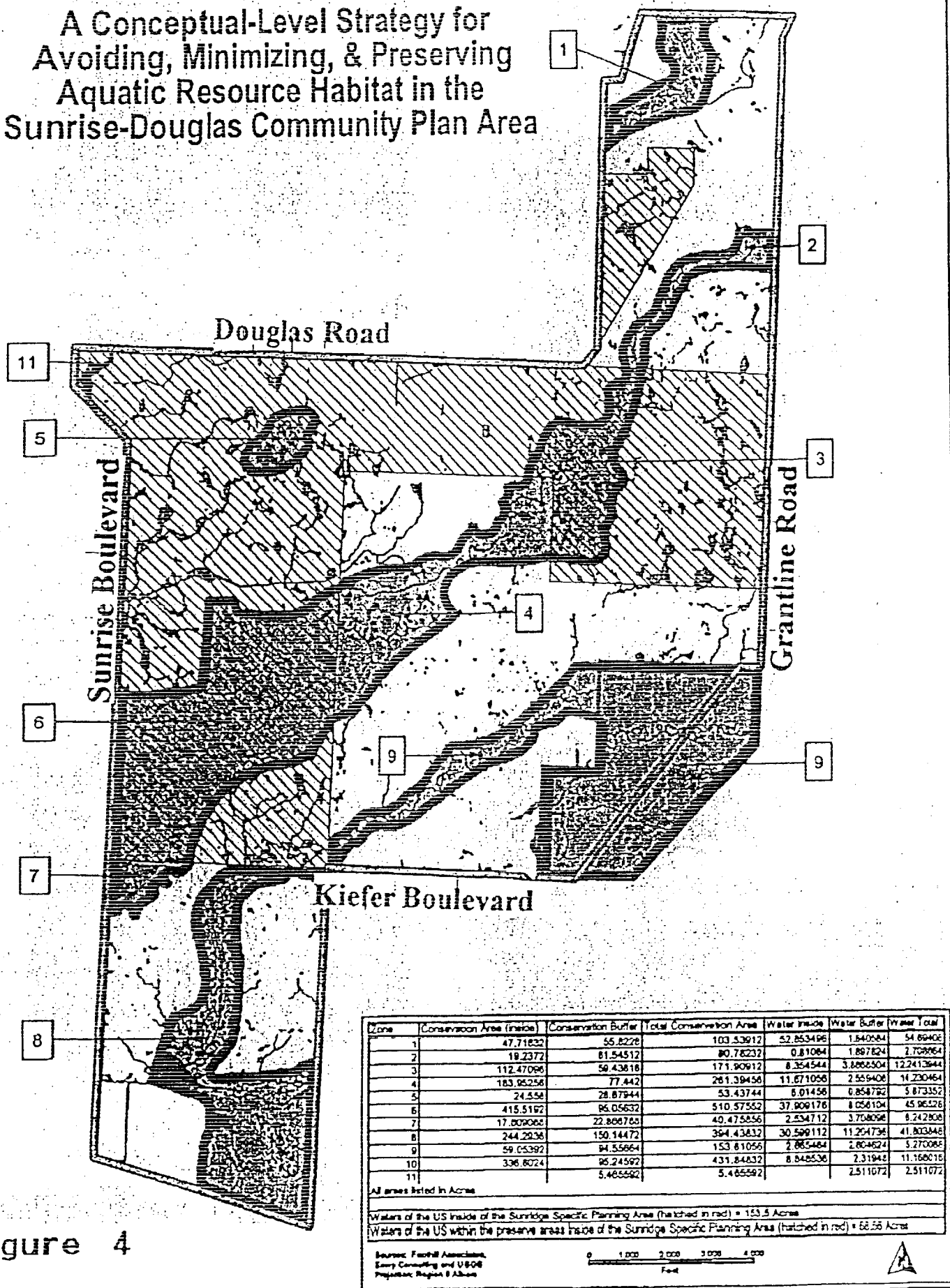


Figure 4

IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF CALIFORNIA

CIVIL MINUTES

HONORABLE MARTIN J. JENKINS

Courtroom Clerk: Monica Tutson

DATE: October 18, 2006 [2:36 to 2:46 pm]

Court reporter: Not reported

Case Number: C06-03604MJJ

Case Name: CALIFORNIA NATIVE PLANT SOCIETY v. U.S. ENVIRONMENTAL  
PROTECTION AGENCY

COUNSEL FOR PLAINTIFF(S):  
Deborah Sivas, Craig Segall

COUNSEL FOR DEFENDANT(S):  
Carol Catherman, Jimmy Rodriguez,  
Samantha Klein

OTHER ATTYS:  
Craig Pinedo, Andrew Saybee, and Robert Gueram

TYPE OF HEARING: Telephone Conference re: TRO

MOTIONS PROCEEDINGS:  
1.

RULING:

ORDERED AFTER HEARING:

- Nothing shall happen to impact the habitats pending the outcome of the TRO hearing.
- All submissions due by Tuesday, October 24, 2006.
- 

ORDER TO BE PREPARED BY: Plntf ( ) Deft ( ) Joint ( ) Court ( )

Referred to Magistrate Judge For: Settlement in \*

(The parties are directed to contact the courtroom deputy of the undersigned judge if they are not advised of the assigned magistrate judge with thirty (30) days.)

CASE CONTINUED TO: October 27, 2006 at 10:00 a.m. for TRO

Pre-Trial Conference Date : at 3:30 p.m.

Trial Date: at 8:30 a.m. Set for days  
Type of Trial: ( )Jury ( )Court

Notes:

**CERTIFICATION OF COMPLIANCE WITH  
DEPARTMENT OF THE ARMY PERMIT**

**Permit Number:** 199400365

**Name of Permittee:** Grantline Investors, LLC

**Date of Issuance:** October 25, 2006

Upon completion of the activity authorized by this permit, sign this certification and return it to the following address:

Regulatory Branch – Sacramento District Office  
ATTN: CESP-K-CO-R-199400365  
1325 J Street, Room 1480  
Sacramento, CA 95814-2922

Please note that your permitted activity is subject to a compliance inspection by an Army Corps of Engineers representative. If you fail to comply with this permit you may be subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of said permit.

\_\_\_\_\_  
Signature of Permittee

\_\_\_\_\_  
Date



# California Regional Water Quality Control Board

## Central Valley Region

Robert Schneider, Chair



Alan C. Lloyd, Ph.D.  
Agency Secretary

Sacramento Main Office  
11020 Sun Center Drive #200 Rancho Cordova, CA 95670-6114  
Phone (916) 464-3291 Fax (916) 464-4645  
<http://www.waterboards.ca.gov/centralvalley>

Arnold  
Schwarzenegger  
Governor

16 September 2005

SEP 21 2005

Mr. David Downs  
River West Investments, LLC  
7700 College Town Drive, Suite 215  
Sacramento, CA 95826

***ACTION ON REQUEST FOR CLEAN WATER ACT §401 WATER QUALITY CERTIFICATION  
FOR DISCHARGE OF DREDGED AND/OR FILL MATERIALS FOR THE GRANTLINE 208  
PROJECT, (WDID#5A34CR00222) SACRAMENTO COUNTY***

**ACTION:**

1. ☐ Order for Standard Certification
2. ☒ Order for Technically-conditioned Certification
3. ☐ Order for Denial of Certification

**WATER QUALITY CERTIFICATION STANDARD CONDITIONS:**

1. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to §13330 of the California Water Code and §3867 of Title 23 of the California Code of Regulations (23 CCR).
2. This certification action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
3. The validity of any non-denial certification action shall be conditioned upon total payment of the full fee required under 23 CCR §3833, unless otherwise stated in writing by the certifying agency.
4. Certification is valid for the duration of the described project. The River West Investments, LLC shall notify the Regional Board in writing within 7 days of project completion.

***California Environmental Protection Agency***

Recycled Paper

CNS08724

**ADDITIONAL CONDITIONS (for Certification Action 2):**

In addition to the four standard conditions, the applicant shall satisfy the following:

1. River West Investments, LLC shall notify the Board in writing of the start of any in-water activities.
2. Except for activities permitted by the U.S. Army Corps under §404 of the Clean Water Act, soil, silt, or other organic materials shall not be placed where such materials could pass into surface water or surface water drainage courses.
3. The discharge of petroleum products or other excavated materials to surface waters is prohibited.
4. Activities shall not cause turbidity increases in surface waters to exceed:
  - (a) where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU;
  - (b) where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent;
  - (c) where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs;
  - (d) where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

Except that these limits will be eased during in-water working periods to allow a turbidity increase of 15 NTU over background turbidity as measured in surface waters 300 feet downstream from the working area. In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses will be fully protected.

5. Activities shall not cause settleable matter to exceed 0.1 ml/l in surface waters as measured in surface waters 300 feet downstream from the project.
6. Activities shall not cause visible oil, grease, or foam in the work area or downstream.
7. All areas disturbed by project activities shall be protected from washout or erosion.
8. In the event that project activities result in the deposition of soil materials or creation of a visible plume in surface waters, the following monitoring shall be conducted immediately upstream and 300 feet downstream of the work site and the results reported to this office within two weeks:

Parameter	Unit	Type of Sample	Frequency of Sample
<b>Turbidity</b>	<b>NTU</b>	<b>Grab</b>	Every 4 hours during in water work
<b>Settleable Material</b>	<b>ml/l</b>	<b>Grab</b>	Same as above.

9. River West Investments, LLC shall notify the Board immediately if the above criteria for turbidity, settleable matter, oil/grease, or foam are exceeded.
10. River West Investments, LLC shall notify the Board immediately of any spill of petroleum products or other organic or earthen materials.



11. River West Investments, LLC complies with all Department of Fish and Game 1600 requirements for the project as required.
12. River West Investments, LLC must obtain coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction Activities issued by the State Water Resources Control Board.

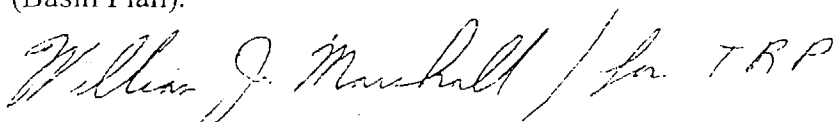
**REGIONAL WATER QUALITY CONTROL BOARD CONTACT PERSON:**

Patrick G. Gillum, Environmental Scientist  
11020 Sun Center Drive #200  
Rancho Cordova, California 95670-6114  
(916) 464-4709  
Pgillum@waterboards.ca.gov

**WATER QUALITY CERTIFICATION:**

I hereby issue an order certifying that any discharge from the River West Investments, LLC, Grantline 208 Project (WDID #5A34CR00222) will comply with the applicable provisions of §301 ("Effluent Limitations"), §302 ("Water Quality Related Effluent Limitations"), §303 ("Water Quality Standards and Implementation Plans"), §306 ("National Standards of Performance"), and §307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act. This discharge is also regulated under Regional Board Resolution No. R5-2003-0008 "*Waiver of Reports of Waste Discharge and Waste Discharge Requirements for Specific Types of Discharge: Type 12 Projects for which Water Quality Certification is issued by the Regional Board*", which requires compliance with all conditions of this Water Quality Certification.

Except insofar as may be modified by any preceding conditions, all certification actions are contingent on (a) the discharge being limited and all proposed mitigation being completed in strict compliance with the applicant's project description and the attached Project Information Sheet, and (b) compliance with all applicable requirements of the Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).



THOMAS R. PINKOS  
Executive Officer

Enclosure: Project Information

cc: U.S. Army Corps of Engineers, Sacramento  
Timothy Vendlinski, Wetlands Section Chief (WTR-8), U.S. Environmental Protection Agency, Region 9, San Francisco  
U.S. Fish & Wildlife Service, Sacramento  
Oscar Balaguer, Certification Unit, State Water Resources Control Board, Sacramento  
Robin Mahoney, Foothill Associates, Rocklin

## PROJECT INFORMATION

**Application Date:** 13 May 2005

**Applicant:** Mr. David Downs  
River West Investments, LLC  
7700 College Town Drive, Suite 215  
Sacramento, CA 95826

**Applicant Representatives:** Robin Mahoney  
Foothill Associates  
655 Menlo Drive, Suite 100  
Rocklin, CA 95765-3718

**Project Name:** Grantline 208 Project

**Application Number:** WDID#5A34CR00222

**US. Corps Application Number:**

**Type of Project:** Construction

**Project Location:** Section 15, Township 8N, Range 7E, MDB&M, Latitude: 38°33'04" and Longitude: 121°11'44"

**County:** Sacramento County

**Receiving Water(s) (hydrologic unit):** Morrison Creek, Sacramento Hydrologic Basin. Valley-American Hydrologic Unit #519.12, Florin HSA

**Water Body Type:** Wetlands

**Designated Beneficial Uses:** The Basin Plan for the Central Valley Regional Board has designated beneficial uses for surface and ground waters within the region. Beneficial uses that could be impacted by the project include: Municipal and Domestic Water Supply (MUN); Agricultural Supply (AGR); Industrial Supply (IND); Hydropower Generation (POW); Groundwater Recharge, Water Contact Recreation (REC-1); Non-contact Water Recreation (REC-2); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); and Wildlife Habitat (WILD).

**Project Description (purpose/goal):** The project site is located within the Sunridge specific plan area, which is part of the 6,042 acres Sunrise Douglas Community Plan Area. Activities proposed for the +/- 211 acre project site include grading of +/- 111 acres for the purpose of constructing single family dwellings.

**Preliminary Water Quality Concerns:** The construction activities may impact surface waters with increased turbidity and settleable matter.

**Proposed Mitigation to Address Concerns:** River West Investments, LLC will implement Best Management Practices (BMPs) to control sedimentation and erosion. All temporary affected areas will be restored to pre-construction contours and conditions upon completion of construction activities. River West Investments, LLC will conduct turbidity and settleable matter testing during in water work, stopping work if Basin Plan criteria are exceeded or are observed.

**Fill/Excavation Area:** 9,250 cubic yards of clean soil to fill 5.70 acres of jurisdictional wetland.

**Dredge Volume:** <0.0 cubic yards

**U.S. Army Corps of Engineers Permit Number:** Individual Permit

**Federal Public Notice:** Corps# 190110021, 200000336 200100252

**Department of Fish & Game Streambed Alteration Agreement:** River West Investments, LLC applied for a Streambed Alteration Agreement on 13 May 2005. (1600-2005-0146-R2)

**Possible Listed Species:** Vernal pool tadpole shrimp, and Vernal pool fairy shrimp

**Status of CEQA Compliance:** An EIR for the Douglas Sunrise project was approved on 19 July 2002 (SCH# 1997022055)

**Compensatory Mitigation:** There will be 5.70 acres of jurisdictional wetland created credits used at the Silva Ranch mitigation bank and 7.35 acres of vernal pool crustacean habitat preservation credit purchased at the Bryte Ranch mitigation bank. 67.9-acres of the 211-acres site will be set aside for open space and wetland preserve.

**Application Fee Provided:** A fee of \$12,815.00 was submitted on 13 May 2005 as required by 23 CCR §3833b(2)(A) and by 23 CCR § 2200(e)

Mr. David Downs  
River West Investments, LLC

- 6 -

16 September 2005

DISTRIBUTION LISTS

U.S. Army Corp of Engineers  
Sacramento District Office  
1325 J Street  
Sacramento, CA 95814-2922

Mr. Timothy Vendlinski  
Wetlands Section Chief (W-3)  
United States Environmental Protection Agency  
75 Hawthorne Street  
San Francisco, CA 94105

United States Fish & Wildlife Service  
Sacramento Fish & Wildlife Office  
2800 Cottage Way  
Sacramento, CA 95825

Mr. Oscar Balaguer  
State Water Resources Control Board, Certification Unit  
P.O. Box 944213  
Sacramento, CA 94244-2130

Robin Mahoney  
Foothill Associates  
655 Menlo Drive, Suite 100  
Rocklin, CA 95765-3718

CNS08729



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825-1846



In reply refer to:  
1-1-05-F-0305

MAY 18 2006

Mr. Will Ness  
Chief, Sacramento Office  
U.S. Army Corps of Engineers District, Sacramento  
1325 J Street  
Sacramento, California 95814-29223

MAY 22 2006

Subject: Section 7 Consultation for the Proposed Grantline 208 Project [Corps file number 199400365], Sacramento County, California

Dear Mr. Ness:

This is in response to the U.S. Army Corps of Engineers' (Corps) request for formal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Grantline 208 project (proposed project) in Sacramento County, California. Your September 27, 2005, request was received in our office on September 28, 2005. This document represents the Service's biological opinion on the effects of the action on the federally endangered vernal pool tadpole shrimp (*Lepidurus packardii*) and the federally threatened vernal pool fairy shrimp (*Branchinecta lynchei*) (vernal pool crustaceans), in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act).

In your letter to the Service, you requested formal consultation on the federally-listed California tiger salamander (*Ambystoma californiense*), slender Orcutt grass (*Orcuttia tenuis*) and the Sacramento Orcutt grass (*Orcuttia viscida*) (listed plant species). The proposed Grantline 208 project site and the entire Sunridge Specific Plan are outside of the range of the California tiger salamander. Surveys conducted of the proposed project site in October 2003, and August 2004, did not indicate the presence of slender Orcutt grass or Sacramento Orcutt grass. Therefore, the proposed project will not affect the California tiger salamander or these listed plant species.

The findings and recommendations in this consultation are based on: (1) letters from Foothill Associates to the Service, dated January 25, 2005, and March 10 and 24, 2006; (2) the April 11, 2005, *Grantline 208 Section 7 Biological Assessment* (Biological Assessment), prepared by Foothill Associates; (3) a September 27, 2005, letter from Corps to the Service requesting initiation of formal consultation on proposed project; (4) site visits; (5) meetings.

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CNS08730

electronic mail (email) correspondence, and telephone conversations between representatives of the Service, Corps, Riverwest Investments (RWI), and Foothill Associates (consultant); and (6) other information available to the Service.

### **Consultation History**

Beginning on May 10, 2002, the Planning Department of the County of Sacramento initiated and facilitated a series of meetings to discuss and develop potential wetlands and endangered species permitting strategies for the Sunrise Douglas Community Planning Area (SDCPA). These meetings were attended by landowners, developers, and their representatives, staff from Congressman Doug Ose's office, California Department of Fish and Game (CDFG), the Service, the Corps, and the Environmental Protection Agency (EPA). The entire group met at least twelve times between May 10th and November 22, 2002, in an attempt to develop a strategy to address issues relating to endangered species and wetland protection within the SDCPA. By November of 2002, a resolution was not reached and discussions ceased at that time.

On July 17, 2002, during this initial phase of meetings, the Sacramento County Board of Supervisors approved both the larger SDCPA and the SunRidge Specific Plan. On July 1, 2003, with the incorporation of the City of Rancho Cordova ("City"), the SDCPA came under the City's land use jurisdiction.

A smaller group of project proponents representing the property owners in the Sunridge Specific plan area initiated several meetings with the Fish and Wildlife Service during mid-2003. Discussions focused on avoidance of endangered species habitats in the SDCPA and specific plan areas. Again, no resolution with the Service was reached.

In March 2004, Congressman Doug Ose initiated meetings with the Federal Agencies, local agencies, and the landowners/developer representatives to facilitate resolution of the issues that had emerged during the previous meetings. Congressman Ose urged the Federal Agencies to develop a conceptual strategy that would meet the requirements of the Federal Agencies' respective statutes. Congressman Ose urged the regulated parties to work cooperatively with the Federal Agencies to explore mechanisms to accommodate the agencies' obligations to comply fully with pertinent Federal laws and regulations, which place a premium on the avoidance of on-site wetlands resources to the extent practicable and the need to avoid jeopardizing the continued existence of threatened and endangered species. In short, the Congressman encouraged the parties to work cooperatively with one another to develop a conceptual onsite avoidance and offsite compensation strategy that reached a proper and workable balance between and amongst the following: the mandates of Federal law; the need to preserve ecosystem integrity and the habitat of endangered and threatened species; the need to acknowledge the planning policies and objectives of the City of Rancho Cordova; and the need to account for the economic realities facing private sector developers. These meetings continued through September 2004.

In June of 2004, the Federal Agencies developed two documents ("A Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area"; and the accompanying planning map) that outline our strategies for conserving threatened and endangered species and wetland habitats and to provide a framework



for development proposals. In addition, our strategy would provide some conceptual guidelines for permitting.

#### Service Correspondence

April 2, 1996, To: A. Champ-Corps of Engineers, Re: Formal Section 7 Consultation on Issuance of 404 Permit for the Sunrise Douglas Project (AKA Anatolia I, II, III), Service File #1-1-96-F-0062, Corps PN 190110021

November 22, 2002, To: M. Finan-Corps of Engineers, Re: Request for additional information on the Sunridge Specific Plan/Sunrise Douglas Community Plan, Service file #1-1-03-I-0411

July 18, 2002, To: D. Nottoli-Sacramento County Board of Supervisors, Re: Sunrise Douglas Community Plan and SunRidge Specific Plan-Service File #1-1-02-CP-2579

April 26, 2004, To: Col. Conrad-Corps of Engineers, Re: SunRidge Specific Plan, Service file #/Corps PN 200000336

#### Consultation History Specific to the Proposed Project

January 25, 2005. Foothill Associates submitted a letter to the Service, providing information about the proposed project. Enclosed was a January 25, 2005, *Draft Grantline 208 Section 7 Biological Assessment*, prepared by Foothill Associates. The Service received this letter and enclosure on January 26, 2005.

September 27, 2005. The Corps submitted a letter to the Service, requesting the initiation of formal consultation on the proposed project. Enclosed was an April 11, 2005, *Grantline 208 Section 7 Biological Assessment*, prepared by Foothill Associates. The Service received this letter and enclosure on September 28, 2005.

February 13, 2006. The Service issued a letter to the Corps, requesting additional information about surveys conducted for federally-listed plant species on the proposed project site (Service file #1-1-05-I-2111).

March 1, 2006. Kelly Fitzgerald and Ken Fuller of the Service met with Ken Whitney and Kyrsten Shields of Foothill Associates during a site visit for another proposed project. During this site visit, Ms. Fitzgerald and Mr. Fuller discussed with Mr. Whitney outstanding informational needs for the consultation on the proposed Grantline 208 project. Mr. Whitney indicated that he would submit the additional information to the Service.

March 11, 2006. Foothill Associates submitted a letter to the Service, providing the results of a focused plant survey on the proposed project site that was conducted in August 2004. Enclosed with this letter were also a copy of the October 2003 focused plant survey report for the proposed project site and the resumes of the botanists who conducted these surveys. The Service received this letter and enclosures on March 13, 2006.

March 24, 2006. Foothill Associates submitted a letter to the Service, providing additional information about the focused plant surveys conducted on the proposed project in 2003 and 2004. The Service received this letter on March 27, 2006.

April 11, 2006. Ellen Berryman of Berryman Ecological emailed additional information about the proposed project's conservation measures to Ms. Fitzgerald.

## BIOLOGICAL OPINION

### Description of the Proposed Action

The following is taken from the June 2004, document titled *A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area*, prepared by the Service, the Corps, and the EPA. This document and the accompanying planning map (Agency map) developed by the three Federal Agencies are hereby incorporated by reference into the project description. Thus, our biological opinion on this proposed action, the Grantline 208 project, is based on application and full implementation of the Federal Agencies' conservation strategy outlined in this document and map, on all future projects in the SDCPA.

"In March through May 2004, representatives of the US Fish and Wildlife Service, US Environmental Protection Agency, and the US Army Corps Engineers (Agencies) met to formulate a conceptual-level strategy for avoiding, minimizing, and preserving aquatic resource habitat in the Sunrise-Douglas Community Plan Area (SDCPA). The intended result of this effort was to achieve reasonable protection and conservation of federally threatened and endangered species under the Endangered Species Act (ESA), while taking a regional approach to avoidance and minimization of impacts to waters of the US, including wetlands, in accordance with Section 404 (b)(1) guidelines under the Clean Water Act. The strategy also endeavors to ensure a viable South Sacramento County Habitat Conservation Plan (HCP) can be developed, given that a large proportion of vernal pool habitat under consideration by the HCP planners is at risk in the SDCPA.

The conceptual-level strategy is represented by preserve areas shown on the map titled Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection dated March 2004. To meet the goals of ESA and the Clean Water Act, the Agencies arrived at the boundaries of the "Preserve Areas" based on best professional judgment and a limited amount of information regarding regional and site-specific biology and hydro-geomorphology (such as wetland delineations, species accounts, and environmental impact reports), while recognizing that development is planned in the area. Of particular focus is the preservation of vernal pool complexes and corridors for Morrison Creek and Laguna Creek. The mapped boundaries are the smallest that would be acceptable to the Agencies and are predicated on ten principles and standards that would be

followed by developers and planners as each element of the overall development proceeds.

The conceptual level strategy should be used by developers and planners to design and plan projects in the SDCPA. The Agencies will use the strategy to aid in the review of proposed development and evaluate the probable individual and cumulative effects on aquatic resources and sensitive species.

The Agencies anticipate that permit decisions and biological opinions will be completed on a case-by-case basis, using site-specific project and aquatic resource habitat information. Each proposed project would be evaluated on its own merits within the larger context of the SDCPA. Depending on the particular hydrology, habitat features, and development plans for a particular parcel, the conceptual preserve boundaries may need to be adjusted to minimize direct and indirect impacts to aquatic resources. Appropriate compensatory mitigation will be developed following demonstrated avoidance and minimization of project impacts.”

The approximately 208-acre proposed Grantline 208 development site is located in southeastern Sacramento County, approximately five miles south of Highway 50, east of Sunrise Boulevard and the Folsom South Canal, and north of Jackson Road (Highway 16), in the City of Rancho Cordova. The proposed project site is situated west of and adjacent to Grantline Road, south of Douglas Road, and north of the proposed Pyramid Boulevard. The proposed Americanos Boulevard bisects the site north to south. The site is located in Section 15 of Township 8 North, Range 7 East, on the U.S. Geological Survey's (USGS) Buffalo Creek 7.5-minute quadrangle.

The proposed project site is within the 6,042-acre SDCPA located within the Sacramento County General Plan Urban Service Boundary and Policy Area. As shown on the September 2004, Developers Map, the proposed project site is also located within the Sunridge Specific Plan area, which provides a more detailed land use plan for development of approximately 2,632 acres within the SDCPA. The SDCPA is located within the headwaters of both the Morrison Creek and Laguna Creek watersheds. Land uses anticipated in the SDCPA and the Sunridge Specific Plan area, including the proposed project site, include low-, medium-, and high-density residential development, commercial mixed uses (e.g., retail, office, and retail professional) and neighborhood parks. Other planned land uses in the vicinity include elementary, junior and senior high schools.

Historically, the SDCPA, including the proposed project site, has been used for dry land farming and grazing. The surrounding land use is predominantly grassland utilized for cattle grazing and related agricultural activities. A few homesteads, including rural residences, barns, and pens, are scattered around this area. The proposed project site is currently utilized as rangeland for the grazing of cattle.

The proposed Grantline 208 project involves the construction of approximately 111 acres of residential development, an 11.4-acre school site, 0.2 acre of commercial development, and an approximately 68-acre open space wetland preserve, which would be protected in perpetuity. An

additional 9.4 acres of land would be dedicated to roads, easements, and landscaped areas. Required infrastructure (e.g., sewer mains and laterals, water mains, and utility lines) will be developed in association with surrounding projects within the Sunridge Specific Plan area. The proposed land uses for the proposed project site are consistent with the planned land uses set forth in the Sunrise Douglas Community Plan and Sunridge Specific Plan.

The proposed 68-acre wetland preserve would be located in the western third of the proposed project site. Approximately 4.85 acres of vernal pools and 0.26 acre of riverine seasonal wetland would be located within this wetland preserve. While the shape of the proposed wetland preserve is slightly different from the design shown on the Agency map, it appears to be consistent with Service principles.

The proposed project will directly affect approximately 5.55 acres of habitat for vernal pool crustaceans, including 5.22 acres of vernal pools, 0.30 acre of seasonal wetlands, and 0.03 acre of ephemeral drainage. A total of 0.45 acre of vernal pool crustacean habitat, including features located within the proposed 68-acre wetland preserve that are within 250 of the proposed development, would be indirectly affected by the proposed project.

### **Proposed Conservation Measures**

The applicant has proposed conservation measures to avoid, minimize, and compensate for effects to vernal pool fairy shrimp and vernal pool tadpole shrimp that result from the implementation of the proposed project.

#### **1. Habitat Preservation and Restoration**

- a. A total of 6.0 acres of vernal pool crustacean habitat would be directly (5.55 acres) and indirectly (0.45 acre) affected by the proposed project. These direct and indirect effects will be offset through habitat preservation (refer to Tables 1 and 2). Habitat preservation to compensate for direct affects will be achieved partially through the on-site preservation of 4.65 acres of vernal pool crustacean habitat in the proposed 68-acre wetland preserve. The on-site preservation of 4.65 acres would compensate for direct effects to 2.325 acres of vernal pool crustacean habitat (at a ratio of two (2) acres preserved for every one (1) acre directly affected). Additional habitat preservation to compensate for the remaining vernal pool crustacean habitat that would be directly (3.225 acres) and indirectly (0.45 acre) affected will be achieved through either:
  - i. The preservation of an additional 6.90 acres of vernal pool crustacean habitat either at a 158.59-acre parcel known as the "Town Center" property located at the southeast corner of Grantline Road and Jackson Highway, or at the Anatolia Conservation Bank. This would effectively preserve two (2) acres of vernal pool crustacean habitat for every one (1) acre of vernal pool habitat that is directly affected and one (1) acre of habitat for every one (1) acre of habitat that is indirectly affected; or

- ii. The preservation of an additional 13.80 acres of vernal pool crustacean habitat at the Bryte Ranch Conservation Bank or other Service-approved location. This would effectively preserve four (4) acres of vernal pool habitat for every one (1) acre of vernal pool habitat that is directly affected and two (2) acres of habitat for every one (1) acre that is indirectly affected.
- b. At least 90 days prior to any fill of wetlands on the proposed project site, the Service must receive the following for review and approval:
  - i. A Service-approved Perpetual Conservation Easement for the on-site wetland preservation area;
  - ii. A description of the mechanism for funding the monitoring, maintenance, and management of the on-site wetland preservation area; and
  - iii. A Monitoring, Maintenance, and Management Plan for the on-site wetland preservation area.
  - iv. The funding instrument shall be in place and Perpetual Conservation Easement shall be recorded within 90 days following the commencement of filling wetlands on the proposed project site.
- c. Direct and indirect effects to vernal pool crustacean habitat will be further offset through habitat restoration/creation at a 1:1 ratio (refer to Tables 1 and 2). The restoration/creation goal will be to create and enhance wetlands with habitat functions and values equal to, or greater than, the wetland features affected by the implementation of the proposed project. Habitat creation/restoration will be achieved through the restoration of 6.0 acres of vernal pool crustacean habitat at a Service-approved site within Sacramento County that meets the following criteria:
  - i. The restoration site's soils will be appropriate vernal pool soil types (e.g., San Joaquin, Redding, Corning);
  - ii. The restoration site's soil would have been disturbed at some point in the past, either through land leveling, ditching and draining, berming, or other disturbance that has removed or modified edaphic and hydrologic features necessary to support vernal pool habitat; and
  - iii. The restoration site will have a conservation easement, a preserve management plan, and a long-term funding mechanism in place upon Service approval.

**Table 1 – Vernal Pool Crustacean Habitat Effects and Compensation Acreages if Habitat Preservation Occurs at the Town Center Property or at the Anatolia Conservation Bank**

	Acres of Effects	Preservation Compensation (in acres) [2:1 Direct/1:1 Indirect]	Creation Compensation (in acres) [1:1 Direct & Indirect]
Direct Effects	5.55	11.10	5.55
Indirect Effects	0.45	0.45	0.45
<b>TOTAL</b>	<b>6.00</b>	<b>11.55</b>	<b>6.00</b>
On-site Preserve		4.65	
Town Center Property/ Anatolia Conservation Bank		6.90	

**Table 2 – Vernal Pool Crustacean Habitat Effects and Compensation Acreages if Habitat Preservation Credits Purchased at the Bryte Ranch Conservation Bank**

	Acres of Effects	On-site Preservation [2:1 portion of direct]	Off-site Preservation Compensation (in acres) [4:1 Direct/2:1 Indirect]	Creation Compensation (in acres) [1:1 Direct & Indirect]
Direct Effects	5.55	4.65	12.90	5.55
Indirect Effects	0.45	0	0.90	0.45
<b>TOTAL</b>	<b>6.00</b>	<b>4.65</b>	<b>13.80</b>	<b>6.00</b>

*\*Note: These tables do not include portions of directly and indirectly affected vernal pools/wetlands that extend onto adjacent properties north (Douglas 98 and Douglas 103), south (Arista del Sol) of the proposed project site. Those that extend to east are excluded from consideration due to the presence of Grant Line Road.*

## 2. Construction Storm Water Pollution Prevention Plan

- a. Minimize off-site storm water runoff that might otherwise affect surrounding vernal pool crustacean habitat. Measures, which will be implemented during project construction to avoid adverse affects to the open space/wetland preserve and adjacent properties, include the following:
- b. Incorporate standard construction Best Management Practices (BMPs) into construction designs, plans and specifications. Contractors will be required to implement them during construction.
- c. Prepare a Storm Water Pollution Prevention Plan (SWPPP) for the proposed project with the following objectives:



- i. Identify pollutant sources, including sources of sediment, that may affect the quality of storm water discharges from the construction of the proposed project;
  - ii. Identify BMPs to reduce or eliminate pollutants in storm water discharges and authorized non-storm water discharges from the proposed project site during construction;
  - iii. Outline and provide guidance for BMP monitoring;
  - iv. Identify project discharge points and receiving waters;
  - v. Address post-construction BMP implementation and monitoring; and
  - vi. Address sediment / siltation / turbidity and non-visually detectable pollutant monitoring, and outline a sampling and analysis strategy.
- d. The construction BMPS for the proposed project will include the following specific measures for avoiding adverse impacts to the open space preserve and adjacent properties:
  - i. Hydroseeding: All constructed slopes adjacent to the preserve will be hydroseeded with a native grassland mix. The hydroseed mix will be applied with a tackifying agent at a rate of at least two tons/acre and based on manufacturer's recommendations. The tackifying agent will be a hydraulic matrix that when applied, and upon drying, adheres to the soil to form a 100% cover that is biodegradable, promotes vegetation, and prevents soil erosion. The hydroseed mix will not be applied before, during, or immediately after rainfall so that the matrix will have an opportunity to dry for a minimum of 24 hours after installation.
  - ii. Sediment and Erosion Control: Certified weed-free straw wattles will be installed at the base of all slopes adjacent to the open space/wetland preserve and along the property lines of the proposed project site. Prior to installation of the straw wattles, a concave key trench approximately two to four inches deep will be contoured along the proposed installation route. Soil excavated for the trenching will be placed on the uphill or flow side of the straw wattles to prevent water from undercutting the straw wattles. Stakes will be driven in on alternating sides of the straw wattles, to hold them in place. The straw wattles will be maintained for a period of time at least until the native grassland vegetation is fully established and the soil is stabilized.
  - iii. Excavated Material: During construction activities associated with the implementation of the proposed project, all excavated materials will be deposited or stored such that this material cannot be washed into any

watercourse, and excess supplies of certified weed-free straw bales and/or sedimentation fencing will be available at the construction site for periodic site-specific use as needed.

- iv. **Staging Areas:** Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. No refueling, storage, servicing, or maintenance of equipment will take place within 100 feet of the open space preserve or adjacent off-site habitat. All machinery will be properly maintained and cleaned to prevent spills and leaks. Any spills or hazardous materials will be reported and cleaned up immediately in accordance with applicable local, state and/or Federal regulations.
- v. **Construction Fencing:** Temporary fencing will be installed prior to construction along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto the open space wetland preserve and adjacent off-site habitat.
- vi. **Construction Monitoring:** A Service-approved environmental monitor will be employed to ensure compliance with construction-related avoidance measures. The monitor will report directly to the City of Rancho Cordova Public Works project manager, and based on reports of non-compliance with environmental requirements, will be authorized to stop work orders and to take actions necessary to prevent damage to the open space wetland preserve and off-site habitat. Monitoring reports will be provided to the City of Rancho Cordova Department of Public Works project manager on a daily basis during initial ground breaking, and on a weekly basis (or more frequently as needed when problems arise) thereafter, until the open space wetland preserve construction is finished.

### **Status of the Species**

The vernal pool tadpole shrimp and vernal pool fairy shrimp were listed as endangered and threatened, respectively, on September 19, 1994 (59 **FR** 48136). The final rule to designate critical habitat for 15 vernal pool species, including these two crustaceans, was published on August 6, 2003 (68 **FR** 46684), with further clarifications on critical habitat designations for listed vernal pool species published in an August 11, 2005, final rule (70 **FR** 46923). Further information on the life history and ecology of the vernal pool fairy shrimp and vernal pool tadpole shrimp may be found in the final listing rule, the final rule to designate critical habitat, Eng *et al.* (1990), Helm (1998), and Simovich *et al.* (1992). The Service's reevaluation of Critical Habitat in 2005 designated several critical habitat units in Sacramento County within Unit 11, but the proposed project is not located in any critical habitat units.

*Life History.* The vernal pool tadpole shrimp has dorsal compound eyes, an approximately one-inch long large shield-like carapace that covers most of its body, and a pair of long cercopods at the end of its last abdominal segment (Linder 1952; Longhurst 1955; Pennak 1989). It is primarily a benthic animal that swims with its legs down. Vernal pool tadpole shrimp climb or scramble over objects, and plow along bottom sediments as they forage for food. Its diet consists of organic detritus and living organisms, such as fairy shrimp and other invertebrates (Pennak 1989; Fryer 1987). The females deposit their eggs on vegetation and other objects on the pool bottom. Tadpole shrimp eggs are known as cysts, and during the dry months of the year, they lie dormant in the dry pool sediments (Lanaway 1974; Ahl 1991).

The life history of the vernal pool tadpole shrimp is linked to the environmental characteristics of its vernal pool habitat. After winter rains fill the pools, its dormant cysts may hatch in as little as four days (Ahl 1991; Rogers 2001), and the animals may become sexually mature within three to four weeks after hatching (Ahl 1991; Helm 1998; King 1996). A portion of the cysts hatch immediately and the rest remain dormant in the soil to hatch during later rainy seasons (Ahl 1991). The vernal pool tadpole shrimp is a relatively long-lived species (Ahl 1991), and will generally survive for as long as its habitat remains inundated, sometimes for six months or more (Ahl 1991; Gallagher 1996; Helm 1998). Adults are often present and reproductive until the pools dry up in the spring (Ahl 1991; Gallagher 1996; Simovich *et al.* 1992).

Vernal pool fairy shrimp have delicate elongate bodies, large stalked compound eyes, no carapace, and 11 pairs of phyllopods, or gill-like structures that also serve as legs. Typically less than one-inch long, they swim or glide gracefully upside-down by means of complex, wavelike beating movements. Fairy shrimp feed on algae, bacteria, protozoa, rotifers, and detritus. The second pair of antennae in adult male fairy shrimp are greatly enlarged and specialized for clasping the females during copulation. The females carry eggs in an oval or elongate ventral brood sac. The eggs are either dropped to the pool bottom or remain in the brood sac until the female dies and sinks. The dormant cysts are capable of withstanding heat, cold, and prolonged desiccation, and they can remain viable in the soil for decades after deposition. When the pools refill in the same or subsequent seasons, some, but not all, of the cysts may hatch. The cyst bank in the soil may therefore be comprised of cysts from several years of breeding (Donald 1983). The early stages of the fairy shrimp develop rapidly into adults and may become sexually mature within two weeks after hatching (Gallagher 1996; Helm 1998). Such quick maturation permits populations to persist in short-lived shallow bodies of water (Simovich *et al.* 1992). In pools that persist for several weeks to a few months, fairy shrimp may have multiple hatches during a single season (Helm 1998; Gallagher 1996).

*Distribution.* Vernal pool tadpole shrimp are found only in ephemeral freshwater habitats, including alkaline pools, clay flats, vernal lakes, vernal pools, vernal swales, and other seasonal wetlands in California (Helm 1998). The vernal pool tadpole shrimp is known from 219 occurrences in the Central Valley (CNDDDB 2005), ranging from east of Redding in Shasta County south to Fresno County, and from a single vernal pool complex located in the San Francisco Bay National Wildlife Refuge in Alameda County. It inhabits vernal pools containing clear to highly turbid water, ranging in size from 54 square feet in the Mather Air Force Base area of Sacramento County, to the 89-acre Olcott Lake at Jepson Prairie in Solano County; the potential ponding depth of occupied habitat ranges from 1.5 inches to 59 inches. Although

vernal pool tadpole shrimp are found on a variety of geologic formations and soil types, Helm (1998) found that over 50 percent of vernal pool tadpole shrimp occurrences were on High Terrace landforms and Redding and Corning soils. Vernal pool tadpole shrimp are uncommon even where vernal pool habitat occurs (Service 2005b). The largest concentration of vernal pool tadpole shrimp occurrences are found in the Southeastern Sacramento Valley Vernal Pool Region, as defined in the Service's *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (2005b). In this vernal pool region, this species occurs on a number of public and private lands in Sacramento County, and from a few locations in Yuba and Placer Counties, including Beale Air Force Base.

Vernal pool fairy shrimp are found only in ephemeral freshwater habitats, including alkaline pools, ephemeral drainages, rock outcrop pools, vernal pools, and vernal swales in California and Southern Oregon (Eriksen and Belk 1999). Occupied habitats range in size from rock outcrop pools as small as 11 square feet to large vernal pools up to 12 acres; the potential ponding depth of occupied habitat ranges from 1.2 inches to 48 inches. The vernal pool fairy shrimp is known from 363 occurrences extending from the Stillwater Plain in Shasta County through most of the length of the Central Valley to Pinnacles in San Benito County (Eng *et al.* 1990; Fugate 1992; Sugnet and Associates 1993; CNDDDB 2005). Five additional, disjunct populations exist: one near Soda Lake in San Luis Obispo County; one in the mountain grasslands of northern Santa Barbara County; one on the Santa Rosa Plateau in Riverside County; one near Rancho California in Riverside County; and one on the Agate Desert near Medford, Oregon (CNDDDB 2005; Helm 1998; Eriksen and Belk 1999; Service 2003). Three of these isolated populations each contain only a single pool known to be occupied by the vernal pool fairy shrimp. Although the vernal pool fairy shrimp is distributed more widely than most other fairy shrimp species, it is generally uncommon throughout its range, and rarely abundant where it does occur (Eng *et al.* 1990; Eriksen and Belk 1999). The greatest number of known occurrences of the vernal pool fairy shrimp are found in the Southeastern Sacramento Vernal Pool Region (see Service 2005b), where it is found in scattered vernal pool habitats in Placer, Sacramento, and San Joaquin Counties, in the vicinity of Beale Air Force Base in Yuba County, and at a single location in El Dorado County.

Although the vernal pool crustaceans addressed in this biological opinion are not often found in the same vernal pool at the same time, when coexistence does occur, it is generally in deeper, longer lived pools (Eng *et al.* 1990; Thiery 1991; Gallagher 1996). In larger pools, vernal pool crustacean species may be able to coexist by utilizing different physical portions of the vernal pool or by eating different food sources (Daborn 1978; Mura 1991; Thiery 1991), or by hatching at different temperatures or developing at different rates (Thiery 1991; Hathaway and Simovich 1996).

*Dispersal.* The primary historic large-scale dispersal method for the vernal pool tadpole shrimp and vernal pool fairy shrimp likely was large scale flooding resulting from winter and spring rains which allowed colonization of different individual vernal pools and other vernal pool complexes (King 1996). This dispersal is currently non-functional due to the construction of dams, levees, and other flood control measures, and widespread urbanization within significant portions of the range of this species. Waterfowl and shorebirds may now be the primary dispersal agents for vernal pool tadpole shrimp and vernal pool fairy shrimp (King 1996).

Simovich *et al.* 1992). The eggs of these branchiopods are either ingested (Krapu 1974; Swanson *et al.* 1974; Driver 1981; Ahl 1991) and/or adhere to the legs and feathers where they are transported to new habitats. Cysts may also be dispersed by a number of other species, such as cattle and humans (Eriksen and Belk 1999).

At the local level, vernal pool crustaceans are often dispersed from one pool to another through surface swales that connect one vernal pool to another. These dispersal events allow for genetic exchange between pools and create a population of animals that extends beyond the boundaries of a single pool. These dispersal events also allow vernal pool crustaceans to move into pools with a range of sizes and depths. In dry years, animals may only hatch in the largest and deepest pools. In wet years, animals may be present in all pools. The movement of vernal pool crustaceans into vernal pools of different sizes and depths allows these species to survive the environmental variability that is characteristic of their habitats.

The genetic characteristics of these species, as well as ecological conditions, such as watershed continuity, indicate that populations of vernal pool crustaceans are defined by pool complexes rather than by individual vernal pools (Fugate 1992). Therefore, the most accurate indication of the distribution and abundance of these species is the number of inhabited vernal pool complexes. The pools and, in some cases, pool complexes supporting these species may be small. Human-caused and unforeseen natural catastrophic events such as long-term drought, non-native predators, off-road vehicles, pollution, berming, and urban development, threaten their extirpation at some sites. Vernal pool fairy shrimp and vernal pool tadpole shrimp continue to be threatened by all of the factors which led to the original listing of this species, primarily habitat loss through agricultural conversion and urbanization (CNDDDB 2005).

*Reasons for Decline and Threats to Survival.* The vernal pool tadpole shrimp and vernal pool fairy shrimp are imperiled by a variety of human-caused activities. Their habitats have been lost through direct destruction and modification due to filling, grading, disking, leveling, and other activities. In addition, vernal pools have been imperiled by a variety of anthropogenic modifications to upland habitats and watersheds. These activities, primarily urban development, water supply/flood control projects, land conversion for agriculture, off-road vehicle use, certain mosquito abatement measures, and pesticide/herbicide use can lead to disturbance of natural flood regimes, changes in water table depth, alterations of the timing and duration of vernal pool inundation, introduction of non-native plants and animals, and water pollution. These can result in adverse effects to vernal pool species.

In addition to direct loss, the habitats of the vernal pool tadpole shrimp and the vernal pool fairy shrimp have been and continue to be highly fragmented throughout their ranges due to conversion of natural habitat for urban and agricultural uses. Fragmentation results in smaller isolated shrimp populations. Ecological theory predicts that such populations will be highly susceptible to extirpation due to chance events, inbreeding depression, or additional environmental disturbance (Gilpin and Soulé 1988; Goodman 1987a, 1987b). If an extirpation event occurs in a population that has been fragmented, the opportunities for re-colonization would be greatly reduced due to geographic isolation from other source populations. Historically, vernal pools and vernal pool complexes occurred extensively throughout the Sacramento Valley of California. Conversion of vernal pools and vernal pool complexes.

however, has resulted in a 91 percent loss of vernal pool resources in California (State of California 2003d). By 1973, between 60 and 85 percent of the area within the Central Valley that once supported vernal pools had been destroyed (Holland 1978). In subsequent years, threats to this habitat type have continued and resulted in a substantial amount of vernal pool habitat being converted for human uses in spite of Federal regulations implemented to protect wetlands. The Corps' Sacramento District has several thousand vernal pools under its jurisdiction (Coe 1988), which includes most of the known populations of these listed species. Between 1987 and 1992, 467 acres of wetlands within the Sacramento area were filled pursuant to the Corps' Nationwide Permit 26 (Service 1992). A majority of those wetlands losses involved vernal pools, the endemic habitat of the vernal pool tadpole shrimp and the vernal pool fairy shrimp. King (1996) has estimated that approximately 15 to 33 percent of the original biodiversity of Central Valley vernal pool crustaceans has been lost since the 1800s. On-going and increasing amounts of human activities are expected to contribute to the extensive loss—upwards of 60 to 70 percent—of remaining vernal pools (Coe 1988).

### **Environmental Baseline**

*Status of the Species in the Action Area.* Sacramento County represents important, high quality habitat for the two shrimp populations by providing large, nearly contiguous areas of relatively undisturbed vernal pool habitat. Sacramento County contains the greatest number of occurrences of vernal pool tadpole shrimp within the range of the species, and also is one of the two counties with the greatest number of occurrences of vernal pool fairy shrimp within the range of the species. Sacramento County contains 58 (17 percent) out of the total of 375 reported occurrences of vernal pool fairy shrimp, and 59 (33 percent) out of the total of 175 reported occurrences of vernal pool tadpole shrimp (CNDDDB 2005). Further, Sugnet and Associates (1993) reported that of 3,092 “discrete populations” checked, only 345 locations, or about 11 percent of all locations checked, were found to support the vernal pool tadpole shrimp. Of these 345 locations supporting the vernal pool tadpole shrimp, 219 (63 percent) were in Sacramento County. Further, of the 3,092 locations checked, 178 locations (6 percent) were found to support the vernal pool fairy shrimp. Of this total, 63 locations (35 percent) were within Sacramento County.

Throughout the Central Valley, approximately 13,000 acres of vernal pool habitats, including mitigation banks, have been set aside for the vernal pool fairy shrimp specifically as terms and conditions of section 7 consultations (Service 2005b). In the Southeastern Sacramento Valley Vernal Pool Region, vernal pool fairy shrimp occurrences are protected from development at a number of private mitigation areas, compensation banks, private ranches with conservation easements, and the Beale Air Force Base in Yuba County. Very few actions have been taken specifically to benefit the vernal pool tadpole shrimp, although several Habitat Conservation Plans are developing vernal pool conservation plans in the region, including Sacramento and Placer Counties (Service 2005b).

The vernal pools on the proposed project site are classified as the old-terrace type and are located on soils associated with Laguna geologic formation. Old-terrace is a rapidly disappearing habitat type in Sacramento County that consists of ancient river channel deposits that were laid down from 600,000 to more than one million years ago by the American River. By comparison, young



terrace formation dates from 100,000 to 200,000 years ago. Old-terrace formation generally has a higher density of vernal pools, deeper pools, and a greater number of special status plants and crustaceans than young-terrace formations. Some special status species found in old-terrace pools may have evolved from species inhabiting shores of ancient lakes in the Central Valley. Old-terrace pools may have served as refugia for these species as the lakes disappeared (pers. comm., K. Fuller, Service, 2004). Sacramento County contains an estimated 764 wetted acres of vernal pools on low terrace, 1,390 wetted acres of vernal pools on high terrace, and 189 wetted acres of vernal pools on volcanic mudflow.

There are two predominant soil types found within south Sacramento County. The Valley Springs soil type typifies Gill Ranch, located in Sacramento County, approximately 12 miles southeast of the proposed project site. Vernal pools found within the Valley Springs soil type are the young-terrace formation. Young-terrace formations, because they have a higher slope gradient, tend to have fewer vernal pools that are typically smaller and shallower. These vernal pools also are inundated for shorter durations. These factors typically result in lower species diversity. Generally, the larger the vernal pool on this soil type, the higher its biotic diversity. Vernal pool fairy shrimp, vernal pool tadpole shrimp, and Sacramento Orcutt grass are less likely to occur in young-terrace formation vernal pools found on Valley Springs soils. (pers. comm., R. Holland, 2004).

The Laguna geologic formation and its associated soils entirely characterize the SDCPA. Vernal pools found within this soil type are old-terrace types. Old-terrace types, because they have a lower slope gradient, tend to have pools that are larger, deeper, and clearer. These pools are inundated for longer periods, but dry and refill less often than the Valley Springs soil type. Generally, the smaller the vernal pool on this soil type, the higher its invertebrate diversity. Although vernal pool fairy shrimp occur in pools on both soil types, they are more frequently found in pools on Laguna soils. Vernal pool tadpole shrimp are found almost exclusively in old-terrace formation vernal pools found on Laguna soils.

Several areas containing old-terrace formation have been protected for their high quality vernal pool habitat and high concentration of special status species populations by the Sacramento Valley Conservancy (SVC). The proposed contiguous preserve area, the SVC's Vernal Pool Prairie Preserve, would cover 2,000 to 3,000 acres and supports a variety of special status plants and animals on relatively undisturbed grasslands containing young and old terrace formations and northern hardpan vernal pools. Within the proposed Prairie Preserve, areas already protected include the Arroyo Seco Mitigation Bank, the Excelsior 184 parcel, and the Sacramento County owned Multi-Cultural Park; outside of the proposed Prairie Preserve, the Sunrise Douglas Preservation Bank, and a portion of Howard Ranch are protected. All of these preserves are within proposed critical habitat for the two listed vernal pool crustaceans addressed in this biological opinion.

*Factors Affecting the Species within the Action Area.* A number of State, local, private, and unrelated Federal actions have occurred within the project area and adjacent region affecting the environmental baseline of these species. Some of these projects have been subject to prior section 7 consultation. Based on an informal review, the Service has issued, to date, approximately 195 biological opinions to Federal agencies on proposed projects in Sacramento

County that have adversely affected the shrimp species since the two species were proposed to be listed in 1994. This total does not reflect the formal consultations that were withdrawn, those that are suspended, those that have insufficient information to conclude an effects analysis, those that were amended, or conference opinions. No State of California actions that have taken place within Sacramento County have adversely affected the species in the action area. Although these proposed projects in Sacramento County have eliminated vernal pools and vernal pool complexes, the offsetting compensating measures are designed to minimize the effects of take of these species resulting in both negative and positive effects to the species. The trend for the two vernal pool species within the county, however, is most likely downward as the current rate of habitat preservation is less than the rate of historical and current habitat loss.

On-going residential and commercial developments within Sacramento County also affect the listed vernal pool crustaceans and their habitats. Human population growth in Sacramento County has steadily increased. For the period between 1990 and 2000, population growth in Sacramento County increased 17.5 percent, with an average annual growth rate of 17.5 percent (State of California 2002). The annual growth appears to be increasing, as demonstrated by the 2.63 percent and 2.2 percent increases in population growth in 2001 and 2002, respectively (State of California 2003a, 2003b). Increased housing demand and urban development accompany the population growth in Sacramento County. Between 1990 and 2000, housing units in Sacramento County increased by 1.37 percent annually (State of California 2000, 2003c). Population growth and concomitant housing demand and subsequent loss of vernal pool habitat are projected to continue. Population projections for Sacramento County are expected to increase above 2000 levels by 19.7 percent in 2010, by 28 percent in 2015, and by 37.5 percent in 2020 (State of California 2001).

In south Sacramento County, the Urban Services Boundary (USB) is a planning boundary that coincides with the areas north of the Cosumnes River/Deer Creek drainage system. Between 1993 and 2000, an estimated 14,950 acres were converted to urban development within the USB (pers. comm. D. Gifford, CDFG, 2004), based on an analysis of California Department of Water Resources mapping data. An independent analysis of urban growth in Sacramento County estimated that 22,000 acres were converted between 1990 and 2000, averaging 2,200 acres per year (pers. comm. R. Radmacher, Sacramento County, 2004). As of 1998 (the most recent year for which vernal pool mapping from aerial photographs is available), there remained an estimated 23,533 acres of vernal pool grasslands within the USB, supporting approximately 946 acres of wetland vernal pool acreage (pers. comm. L. Konde, CDFG, 2003).

The actions listed above have resulted in both direct and indirect impacts to vernal pools within the region, and have contributed to the loss of vernal pool tadpole shrimp and vernal pool fairy shrimp populations. Although a reduction of the two shrimp populations has not been quantified, the acreage of lost habitat continues to grow.

*Vernal Pool Crustacean Presence in the Proposed Action Area.* Vernal pool complexes, occurring north of the Cosumnes River/Deer Creek drainage and within the USB, contain a high density of occupied pools of both vernal pool tadpole shrimp and vernal pool fairy shrimp. There are 31 known occurrences of vernal pool tadpole shrimp inside the USB, compared to 17 occurrences outside the USB (CNDDDB 2005). There are 25 known occurrences of vernal

pool fairy shrimp inside the USB, compared to 18 occurrences outside the USB (CNDDDB 2005). The data from the CNDDDB do not reflect additional reported records in the Sunrise-Douglas area, where 137 occurrences of vernal pool tadpole shrimp and 46 occurrences of vernal pool fairy shrimp have been recorded.

Both vernal pool fairy shrimp and vernal pool tadpole shrimp have been documented to occur within the Sunridge Specific Plan area, including the proposed project site. Focused surveys for vernal pool crustaceans were conducted on the parcels within the Sunridge Specific Plan area using the Service's current Dip Net protocol between February and March of 1993 by Sugnet and Associates (1993). The results of these surveys indicated the presence of California linderiella (*Linderiella occidentalis*) from four discrete locations and vernal pool fairy shrimp from one location; vernal pool crustaceans were identified on the proposed Grantline 208 project site. All of the vernal pools and seasonal wetlands on the proposed project site provide appropriate habitat for both vernal pool fairy shrimp and vernal pool tadpole shrimp. Because these species are known from other parcels within the SDCPA and vicinity, and it is likely the vernal pool crustaceans would disperse within the watershed between the project sites, the applicant assumes presence of vernal pool fairy shrimp and vernal pool tadpole shrimp in all suitable habitat on the proposed project site (Foothill Associates 2005). Therefore, construction of the proposed project in any portion of the proposed project site that supports suitable habitat is likely to adversely affect populations of vernal pool fairy shrimp and vernal pool tadpole shrimp.

### **Effects of the Proposed Action**

Although vernal pool fairy shrimp and vernal pool tadpole shrimp exhibit slightly differing habitat requirements and life cycles, they often inhabit the same vernal pool complexes and have been known to co-occur in individual vernal pools. These species are supported by similar habitat types, including vernal pools, seasonally ponded areas within vernal swales, rock outcrop ephemeral pools, playas, alkali flats, and other depressions that hold water of similar volume, depth, area, and duration. Therefore, both species are subject to a common set of threats and considerations.

### **Direct Effects**

Direct effects are the immediate effects of the proposed project on the species or its habitat and include the effects of interrelated action and interdependent actions. Interrelated actions are those actions that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those actions that have not independent utility apart from the proposed action (50 CFR §402.02).

The proposed project would result in fill of 5.55 acres of vernal pool crustacean habitat, including 5.22 acres of vernal pools, 0.30 acre of riverine seasonal wetlands, and 0.03 acre of ephemeral drainage. The Service considers an entire vernal pool or seasonal wetland to be directly affected when even a portion of it is filled or subject to similar direct affects.

### Interrelated and Interdependent Actions

Additional effects from interrelated and interdependent actions are expected from the proposed project. Approximately 115 acres of vernal pools are present in the entire Sunridge Specific Plan area (Foothill Associates 2005). The Corps issued a permit for the largest project in this area, the approximately 1,225-acre Anatolia I, II, III property that included approximately 71 acres of vernal pools (Corps file number 190110021). This Corps permit authorized fill of approximately 27 acres of vernal pool crustacean habitat, and required the preservation of 44 acres of vernal pools within a 482-acre on-site preserve. With the exception of this preserve and a designated open space area along Laguna Creek near Grant Line Road, the Sunridge Specific Plan land use designations and zoning provide for urban land use throughout the plan's areas.

In 2004, the Federal Agencies developed two documents ("A Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area"; and the accompanying planning map [Agency map]) that outline our strategies for conserving threatened and endangered species and wetland habitats and to provide a framework for development proposals. The conceptual design consists of two preserve areas, one entirely within the Sunridge Ranch project site (i.e., the Western Preserve) and one that incorporates portions of Sunridge Park, Douglas 103, Pappas/Arista del Sol, and the proposed project site (i.e., the Eastern Preserve). The approximately 50-acre Western Preserve was designed to protect populations of slender Orcutt grass, vernal pool fairy shrimp, and vernal pool tadpole shrimp. The approximately 161-acre Eastern Preserve would be designed to protect the headwaters of one of the forks of Morrison Creek as well as habitat for listed vernal pool crustaceans. The combined total of approximately 211 acres of wetland preserves would protect 17.32 acres of vernal pool crustacean habitat (Foothill Associates 2005). These preserves would be protected through conservation easements aimed at protecting preserve functions and values; the easements would be held and managed by a habitat management-focused non-profit entity, chosen by the land owners and approved by the Federal Agencies. These preserves would be managed and funded in perpetuity according to a preserve management plan prepared by landowners and approved by the Federal Agencies.

Development of the SDCPA will require the extension of certain utilities and the enlargement of certain roads in areas outside of the SDCPA boundary. Utility improvements include the development of a well field, water supply lines, and water treatment facilities and sewer lines. Well locations have all been sited to avoid affects to aquatic habitats. The water treatment facility will be located on land permitted for take in the Anatolia project (Service file number 1-1-F-96-0062) within the SDCPA boundary. All offsite road improvements and the sewer and water lines will be constructed in existing rights-of-way with affects to aquatic resources totaling less than one-half of an acre (Foothill Associates 2005).

All infrastructure improvements are required to serve the already permitted Anatolia project. Road improvement projects will be planned to provide service to Anatolia and the remaining projects within the SDCPA. Jaeger Road, an existing two-lane, partially paved road, will be paved from Douglas Road, south to Pyramid Road. Pyramid Road, an existing dirt road, will be improved from Sunrise Boulevard to Jaeger Road. The two road improvements are not expected to result in an appreciable loss of vernal pool crustacean habitat (Foothill Associates 2005). The

development of the Sunridge Specific Plan area for residential and commercial purposes would be facilitated by the proposed road widening project.

Continuing development in southern Sacramento County requires the installation of supporting infrastructure, such as sewer interceptors. The proposed Laguna Creek Interceptor would carry waste from developments that are scheduled for the Laguna area. The exact route of the proposed Laguna Creek Interceptor is not known at this time; however the proposed project could have both direct and indirect effects on listed vernal pool crustaceans, and other listed species. The proposed Laguna Creek Interceptor, approximately 87,000 feet in length, would extend eastward from the Sacramento Regional Water Treatment Plant (SRWTP) to east of Sunrise Boulevard (SRCSO 2000). The proposed Laguna Creek Interceptor would service an area which extends northwest from the intersection of Bradshaw and Calvin Roads nearly to the intersection of White Rock and Scott Roads, including the entire proposed Sunrise-Douglas development. This proposed interceptor would also provide tie-ins for the future Deer Creek Interceptor, approximately 90,000 feet in length, which is proposed for construction between 2021 and 2032, and the Aerojet Interceptor, approximately 55,000 feet in length, which is proposed for construction between 2014 through 2033 (SRCSO 2000). These two interceptors would eventually service areas east of Grant Line Road and northeast of Sunrise Road, respectively. Construction for the proposed Laguna Creek Interceptor is proposed for 2010 through 2024.

These future projects may adversely affect several federally-listed species, including the vernal pool crustaceans, the giant garter snake (*Thamnophis gigas*), the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), the California tiger salamander, the California red-legged frog (*Rana aurora draytonii*), the Delta smelt (*Hypomesus transpacificus*) and its designated critical habitat, and the slender and Sacramento Orcutt grasses.

Currently, a South Sacramento Habitat Conservation Plan (SSHCP) is being developed. So therefore, while development activities in south Sacramento County may negatively affect vernal pool crustaceans and other listed species and their habitats, the SSHCP, if completed, will eventually ensure that development activities would avoid, minimize, and compensate for take of listed species to the greatest extent possible. The SSHCP would address the indirect effects of facilitated planned development that results from the interrelated and interdependent actions that result from the proposed project. At minimum, the SSHCP will address the Federal and state listed species known at this time that may be affected by actions that are reasonably foreseeable as a result of the proposed action. Additional HCP-covered species may be added as the HCP is being developed. The SSHCP will be coordinated with CDFG and will include any appropriate State listed species. The SSHCP will address actions that are within the land use authority of Sacramento County and are reasonably foreseeable as a result of the proposed action, including land use approvals that are related to entitlements. Additional activities may be added as the SSHCP is developed. The SSHCP will cover a cumulative effects boundary area that is reasonably foreseeable as a result of the proposed project and the future projects.

Indirect Effects

Indirect effects are caused by or result from the proposed action, are later in time, and are reasonably certain to occur. Indirect effects may occur outside of the area directly affected by the action (50 CFR §402.02).

Indirect effects to vernal pools in the project vicinity that could result from the implementation of the proposed project include hydrologic alteration, habitat fragmentation, disturbances from construction equipment, non-point source pollution, and impacts from human encroachment. The Service considers all vernal pool crustacean habitat not considered to be directly affected but within 250 feet of proposed construction activities to be indirectly affected by project implementation. Indirectly affected habitat includes all habitat supported by future destroyed areas and swales, and all habitat otherwise damaged by loss of watershed, human intrusion, introduced species, and pollution that will be caused by the proposed project.

The proposed project could result in indirect effects to a total of 0.45 acre of suitable vernal pool crustacean habitat. Although these features exist on land that is proposed for the on-site wetland preserve, these features will be indirectly affected by construction activities occurring within 250 feet of them. Indirect effects to vernal pools in the project vicinity that could result from the proposed project include hydrologic alteration, disturbance from construction equipment, non-point source pollution, and impacts from human encroachment. Individual crustaceans and their cysts, which may inhabit these vernal pools and seasonal wetlands, may be injured or killed by any of the following indirect effects:

*Erosion* - The ground disturbing activities in the watershed of vernal pools associated with the proposed project action area are expected to result in siltation when pools fill during the wet season following construction. Siltation in pools supporting listed crustaceans may result in decreased cyst viability, decreased hatching success, and decreased survivorship among early life history stages, thereby reducing the number of mature adults in future wet seasons. The proposed project construction activities could result in increased sedimentation transport into vernal pool crustacean habitats during periods of heavy rains.

*Changes in hydrology* - The biota of vernal pools and swales can change when the hydrologic regime is altered (Bauder 1986, 1987). Survival of aquatic organisms like the vernal pool fairy shrimp and vernal pool tadpole shrimp are directly linked to the water regime of their habitat (Zelder 1987). Therefore, construction near vernal pool areas will, at times, result in the decline of local sub-populations of vernal pool organisms, including fairy shrimp and tadpole shrimp.

*Introduction of non-natives* - There is an increased risk of introducing weedy, non-native plants into the vernal pools both during and after project construction due to the soil disturbance from clearing and grubbing operations, and general vegetation disturbance associated with the use of heavy equipment.

*Chemical contamination* - The runoff from chemical contamination can kill listed species by poisoning. Oils and other hazardous materials associated with construction equipment could be conveyed into the vernal pool crustacean habitats by overland runoff during the rainy season.



thereby adversely affected water quality. Many of these chemical compounds are thought to have adverse affects on all of the listed vernal pool crustaceans and/or their cysts. Individuals may be killed directly or suffer reduced fitness through physiological stress or a reduction in their food base due to the presence of these chemicals.

*Insecticide Contamination* – Recent research suggests that pyrethroid insecticide use in residential developments will cause toxicity, and even mortality, to aquatic species (Weston *et al.*, in press). The application of these insecticides, and subsequent runoff into aquatic features surrounding residential developments, was demonstrated to be a limiting factor for aquatic invertebrates; in fact, the abundance of resident macroinvertebrates was inversely correlated with concentrations of pyrethroid insecticides (Weston *et al.*, in press).

The proposed project will contribute to a local and range-wide trend of habitat loss, fragmentation, and degradation—the principle reasons that the vernal pool tadpole shrimp and vernal pool fairy shrimp have declined and were given protection under the Act. The proposed project, in combination with ongoing loss of habitat, will contribute to the fragmentation and reduction of the acreage of the remaining listed vernal pool crustacean habitat located in south Sacramento County and is expected to lead to the reduction in the range of both of these listed vernal pool crustaceans.

### Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Large areas within south Sacramento County, including the SDCPA, have been designated for development in the next 20 years under the Sacramento General Plan. The timeline for development in these areas began in the early 1990s and is expected to continue for the next 5 to 10 years. This growth and conversion would contribute to several potentially significant affects to listed species, including loss, alteration, or degradation of habitat, particularly of wetlands, degradation of water quality, and increases in the frequency and intensity of flooding.

A number of on-going and proposed projects could contribute to adverse affects to vernal pool crustaceans within Sacramento County, particularly in the vicinity of the proposed project. In most cases, however, these actions would be subject to Federal review and would, therefore, not be considered cumulative to the proposed project. For instance, several large highway and light rail construction, road improvement, water transfer, and utility and interceptor installation projects are currently planned or underway in south Sacramento County. These projects will contribute to the loss and degradation of habitats of listed species across their range, particularly in south Sacramento County. These activities may alter vernal pool crustacean habitats and can potentially harass, harm, injure, or kill these species. Because these activities have a Federal nexus, the Service will analyze these projects to determine if they will result in the jeopardy of federally-listed species and/or adverse modification and destruction of critical habitat for these species. An undetermined number of future projects that alter the habitat of vernal pool

crustaceans, however, could go forward without the need for a Corps 404 permit. Activities that would potentially affect listed vernal pool crustaceans include development associated with urban, water, flood control, highway/roadway and utility projects, application of herbicides/pesticides, conversion to agricultural use, and indirect effects of adjacent development such as urban run-off altering the hydrologic regime.

The Service is aware of other projects currently under review by the State, County, and local authorities where biological surveys have documented the occurrence of federally-listed species. These projects include such actions as urban expansion, water transfer projects that may not have a Federal nexus, and continued agricultural development. The cumulative effects of these known actions pose a significant threat to the eventual recovery of these species. Because the vernal pool tadpole shrimp and vernal pool fairy shrimp are endemic to vernal pools in the Central Valley, coastal ranges, and a limited number of sites in the transverse range and Santa Rosa plateau of California, the Service anticipates that a wide range of activities will affect these species. Such activities include, but are not limited to: (1) urban development, (2) water projects, (3) flood control projects, (4) highway projects, (5) utility projects, (6) chemical contaminants, and (7) conversion of vernal pools to agricultural use. Many of these activities will be reviewed under section 7 of the Act as a result of the Federal nexus provided by section 404 of the Federal Water Pollution Control Act, as amended (Clean Water Act).

The proposed project is located in a region where future destruction and modification of vernal pool crustacean habitat is anticipated. Sacramento County will continue to develop within the County's sphere of influence. This development will result in increased direct loss of habitats for these listed species. Continued loss of these habitats throughout the region could conceivably affect the genetic diversity of the local population(s) of listed vernal pool crustaceans. Any loss of genetic diversity can have significant effects on a population's ability to respond to environmental change over time (Frankel and Soule 1981). Within the proposed action area, the predominant types of non-federal actions that might affect the listed vernal pool crustaceans consist of residential and commercial development, with effects the same as, or similar to, those described above.

## **Conclusion**

After reviewing the current status of the vernal pool fairy shrimp and vernal pool tadpole shrimp, the environmental baselines for the area covered by this biological opinion, the effects of the proposed project, and the cumulative effects, it is the Service's biological opinion that the Grantline 208 project, as proposed, is not likely to jeopardize the continued existence of these species. Critical habitat has been designated in Sacramento County for the vernal pool fairy shrimp or the vernal pool tadpole shrimp, although the proposed project is not located within critical habitat designated for these listed species. Therefore, the proposed project is not likely to destroy or adversely modify designated critical habitat for both the vernal pool fairy shrimp and the vernal pool tadpole shrimp, or any other listed species.

## INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by the Corps so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to require any entity participating in the project to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

### Amount or Extent of Take

The implementation of the proposed project will directly affect 5.55 acres and indirectly affect 0.45 acre of vernal pool crustacean habitat. The Service anticipates incidental take of vernal pool tadpole shrimp and vernal pool fairy shrimp will be difficult to detect or quantify for the following reasons: the aquatic nature of the organisms and their relatively small body size make the finding of a dead specimen unlikely; losses may be masked by seasonal fluctuations in numbers and other causes; and the species occurs in habitat that makes them difficult to detect. Due to the difficulty in quantifying the number of vernal pool fairy shrimp and vernal pool tadpole shrimp that will be killed as a result of the proposed action, the Service is quantifying take incidental to the project as the number of acres of vernal pool crustacean habitat that will become unsuitable for the listed species due to direct or indirect affects as a result of the proposed project. Therefore, the Service estimates that all vernal pool fairy shrimp and vernal pool tadpole shrimp inhabiting 6.0 acres of vernal pool crustacean habitat will harassed, harmed, injured, or killed, as a result of the proposed project.

Upon implementation of the following reasonable and prudent measures, all vernal pool fairy shrimp and vernal pool tadpole shrimp inhabiting 6.0 acres of vernal pool crustacean habitat will become exempt from the prohibitions described under section 9 of the Act for direct and indirect effects associated with the proposed Grantline 208 project. The listed vernal pool crustaceans

may be harmed, harassed or killed in association with the acres exempted under Section 9 of the Act. No other forms of take are authorized under this opinion.

### **Effect of the Take**

In the accompanying biological opinion, the Service has determined that this level of anticipated take is not likely to result in jeopardy to the vernal pool tadpole shrimp and vernal pool fairy shrimp. The proposed project is not likely to result in destruction or adverse modification of designated critical habitat for the vernal pool fairy shrimp and vernal pool tadpole shrimp because no critical habitat for these species has been designated in the proposed action area.

Upon implementation of the following reasonable and prudent measures, incidental take associated with the proposed project on the vernal pool fairy shrimp and vernal pool tadpole shrimp in the form of harm, harassment, and mortality in the form of habitat degradation will become exempt from the prohibitions described under section 9 of the Act for direct and indirect effects.

### **Reasonable and Prudent Measures**

The Service has determined that the following reasonable and prudent measure is necessary and appropriate to minimize the effects of the proposed project on the vernal pool tadpole shrimp and vernal pool fairy shrimp.

1. Minimize the direct and indirect impacts to federally listed vernal pool crustaceans resulting from habitat modification and habitat loss in the Sunrise Douglas Community Plan Area.

### **Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the Act, the Corps must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

1. The Corps shall fully implement the principles and standards outlined in the document titled, "June 2004 Conceptual Strategy for Avoiding Minimizing and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area", for this project.
2. The Corps shall fully implement the March 2004 map titled, "Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection" for this project.
3. The Corps shall assure all conservation measures as proposed by the project proponent (pages 9-12 of the *Grantline 208 Section 7 Biological Assessment* (Foothill Associates 2005) and identified by the Service on pages 6-10 in the project description of our biological opinion are fully implemented.

4. The Corps shall assure the following "Best Management Practices" are implemented during project construction:
  - a. The project proponent shall include a copy of this biological opinion within its solicitations for construction of the proposed project, making the prime contractor responsible for implementing all requirements and obligations included within the biological opinion, and to educate and inform all other contractors involved in the project as to the requirements of the biological opinion. The project proponents shall make the terms and conditions in this biological opinion a required item in all contracts for the project that are issued by the County to all contractors. The project proponents shall provide the Division Chief of Endangered Species (Central Valley) at the Sacramento Fish and Wildlife Office with a hardcopy of the contract(s) for this project at least ten (10) working days before it is accepted or awarded.
  - b. The project proponents shall submit the names and curriculum vitae of the biological monitor(s) for the project at least 30 calendar days prior to ground-breaking.
  - c. A Service-approved biologist must be on-site during all construction-related activities that occur within 250 feet of vernal pool crustacean habitat, and that could result in the take of these federally-listed species. The biologist will have the authority to halt any action that might result in take of listed species. If the biologist exercises this authority, the Service and the CDFG shall be notified by telephone and letter within one (1) working day.
  - d. A Worker Environmental Awareness Training Program for construction personnel shall be conducted before the commencement of construction. The program shall provide workers with information on their responsibilities with regard to the listed vernal pool crustaceans, an overview of the life-history of the species, information on take prohibitions, and an explanation of the relevant terms and conditions of this biological opinion. Written documentation of the training must be submitted to the Sacramento Fish and Wildlife Office within three (3) working days of the completion of instruction.
  - e. Prior to groundbreaking, high-visibility fencing that is at least 5 feet tall shall be placed along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto adjacent off-site habitat and the onsite wetland preserve. Such fencing will be inspected by the on-site biologist at the beginning of each work day and maintained in good condition. The fencing may be removed only when the construction of the project is completed.
  - f. During construction operations, the number of access routes, number and size of staging areas, and the total area of the proposed project activity will be limited to the minimum necessary. Routes and boundaries will be clearly demarcated. Movement of heavy equipment to and from the project site will be restricted to established roadways to minimize habitat disturbance, and all vehicle traffic on access roads will observe a speed limit of 20 miles per hour.

- g. To control erosion during and after implementation of the project, the applicant will implement best management practices (BMPs), as identified by the Central Valley Regional Water Quality Control Board. Erosion control measures and BMPs, which retain soil or sediment, runoff from dust control, and hazardous materials on the construction site and prevent these from entering the vernal pool complexes, will be placed, monitored, and maintained throughout the construction operations. These measures and BMPs may include, but are not limited to, silt fencing, sterile hay bales, vegetative strips, hydroseeding, and temporary sediment disposal. The Stormwater Pollution Prevention Plan (SWPPP) described in the Proposed Conservation Measures section on pages 8-10 of this biological opinion shall include these and any other measures necessary to prevent the discharge of contaminated runoff onto the onsite wetland preserve and adjacent offsite wetland habitats. This SWPPP should be submitted to the Service for review and approval at least 90 days prior to any ground-breaking activity on the proposed project site.
  - h. All heavy equipment, vehicles, and supplies will be stored at the designated staging area at the end of each work period. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the open space/wetland preserve and offsite wetland avoidance areas. Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. All fueling, cleaning, maintenance, and staging of vehicles and other equipment will occur only within designated areas and at least 250 feet away from the open space/wetland preserve and any off-site vernal pool crustacean habitats. All machinery will be properly maintained and cleaned to prevent spills and leaks. The applicant will ensure contamination of habitat does not occur during such operations. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately in accordance with applicable local, state and/or Federal regulations. Such spills will be reported in the post-construction compliance reports.
  - i. No clearing of vegetation and scraping, or digging, of soil in the avoided/preserve area
5. The Corps shall ensure that applicant avoids activities that would impact the onsite avoided area/preserve areas such as:
- a. Alteration of topography within the preserve;
  - b. Placement of any new structures (including outfalls, culverts, electrical/gas transmission lines) within the preserve unless specifically addressed in the project description;
  - c. Dumping, burning, and/or burying of rubbish, garbage, or any other wastes and fill materials in the preserve area;



- d. Fire protection activities not required to protect existing structures at the proposed project site; and
  - e. Use of pesticides or other toxic chemicals in the preserve unless addressed in the project description of subsequent management plans.
6. The Corps shall ensure the applicant complies with the *Reporting Requirements* of this biological opinion.
7. The applicant has proposed to offset direct and indirect effects of vernal pool crustacean habitat loss through a combination of on-site and offsite habitat preservation, as described in the Proposed Conservation Measures section on pages 6-8 of this biological opinion. Prior to any fill of wetlands on the proposed project site, credits commensurate with acreage commitment shall be dedicated within a Service-approved habitat preservation bank and documentation provided to the Service. If the applicant chooses not to use an approved preservation bank, then at least 120 days prior to construction, the applicant shall submit documentation of the preservation habitat including conservation easement, management plan, funding instrument, easement holder etc. for our approval.
8. The applicant has proposed to offset direct and indirect effects of vernal pool crustacean habitat through habitat restoration or creation, as described in the Proposed Conservation Measures section on pages 6-8 of this biological opinion. Prior to any fill of wetlands on the proposed project site, credits commensurate with acreage commitment shall be dedicated within a Service-approved habitat restoration/creation bank. If the applicant chooses not to use an approved creation/restoration bank, then at least 90 days prior to construction, the applicant shall submit documentation of the creation/restoration habitat including: construction plan, conservation easement, management plan, funding instrument, easement holder etc. for our approval. The following criteria will be used by the Service when approving a restoration/creation site:
- a. The restoration site's soils will be appropriate vernal pool soil types (e.g., San Joaquin, Redding, Corning), and should be located on the Laguna geologic formation;
  - b. The restoration site's soil would have been disturbed at some point in the past, either through land leveling, ditching and draining, berming, or other disturbance that has removed or modified edaphic and hydrologic features necessary to support vernal pool habitat;
  - c. The restoration site will have a Service-approved conservation easement, a preserve management plan, and a long-term funding mechanism in place upon Service approval;
  - d. Any vernal pool restoration/creation must minimize effects to any adjacent and existing vernal pools and wetlands; and

- e. Densities of restored/created vernal pools must not be greater than historical densities for the geologic formation.

### **Reporting Requirements**

The Service-approved biologist shall notify the Service immediately if any listed species are found on site, and shall submit a report including the date(s), location(s), habitat description, and any corrective measures taken to protect the species found. The Service-approved biologist shall submit locality information to the CDFG, using completed California Native Species Field Survey Forms, no more than 30 calendar days after completing the last field visit of the project site. Each form shall have an accompanying scale map of the site, such as a photocopy of a portion of the appropriate 7.5-minute U.S. Geological Survey map and shall provide at least the following information: township, range, and quarter section; name of the 7.5-minute or 15-minute quadrangle; dates (day, month, year) of field work; number of individuals and life stage (where appropriate) encountered; and a description of the habitat by community-vegetation type. The Service-approved biologist shall also provide a high quality copy of this information to the staff zoologist, California Department of Fish and Game, 1807 13<sup>th</sup> Street #202, Sacramento, California, 95814, phone (916) 445-0045.

Any contractor or employee who, during routine operations and maintenance activities, inadvertently kills or injures a listed wildlife species must immediately report the incident to their representative. The Service is to be notified within one (1) working day of the finding of any dead or injured listed wildlife species or any unanticipated take of the species addressed in this biological opinion. The Service contact persons for this are the Division Chief, Endangered Species Division (Central Valley) at (916) 414-6600 and Resident Agent-in-charge Scott Heard at (916) 414-6660.

The project proponents shall submit a post-construction compliance report prepared by the monitoring biologists to the Sacramento Fish and Wildlife Office (SFWO) within 30 calendar days of the completion of construction activity. This report shall detail the following: (1) dates that construction occurred; (2) pertinent information concerning the success of the project in meeting conservation measures; (3) an explanation of failure to meet such measures, if any; (4) occurrences of incidental take of vernal pool crustaceans, if any; and (6) other pertinent information.

### **CONSERVATION RECOMMENDATIONS**

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases.

1. The Corps should work with the Service to address significant, unavoidable environmental effects resulting from projects proposed by non-Federal parties.

2. The Corps should assist the Service in implementing the February 2006 final recovery plan for vernal pool species.
3. The Corps should work with the Service to ensure that its wetland delineation techniques fully assess the affects of proposed projects on listed vernal pool crustacean species.
4. The Corps, in partnership with the Service, should develop maintenance guidelines for the Corps projects that will reduce adverse effects of routine maintenance on vernal pool crustaceans and their habitats. Such action may contribute to the delisting and recovery of the species by preventing degradation of existing habitat and increasing the amount and stability of suitable habitat.
5. The Corps should conduct a study of cumulative loss of wetlands habitat, including habitat of listed crustaceans, in Sacramento County.

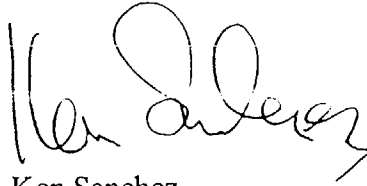
In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

#### REINITIATION--CLOSING STATEMENT

This concludes formal consultation with the Corps on the proposed Grantline 208 project. As provided in 50 CFR §402.16, re-initiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending re-initiation.

Please contact this office at (916) 414-6645 if you have any questions regarding the proposed Grantline 208 project.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ken Sanchez', with a stylized, cursive script.

Ken Sanchez  
Assistant Field Supervisor

cc:

ARD (ES), Portland, OR

Mr. Kent Smith, California Dept. of Fish and Game, Rancho Cordova, CA

Ms. Elizabeth Goldman, Environmental Protection Agency, San Francisco, CA

Ms. Ellen Berryman, Berryman Ecological, Meadow Vista, CA

Ms. Peggy Lee, Foothill Associates, Rocklin, CA

Hilary Anderson, Planning Department, City of Rancho Cordova, Rancho Cordova, CA

Brian Vail, River West Investments, Sacramento, CA

Jim Galovan, Woodside Homes, Folsom, CA

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Mr. Will Ness

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DEPARTMENT OF THE ARMY PERMIT

Permittee: Jim Galovan  
Woodside Homes  
15 Plaza Drive, Suite 102  
Folsom, California 95630-4732

Permit Number: 200200568

Issuing Office: U.S. Army Engineer District, Sacramento  
Corps of Engineers  
1325 "J" Street  
Sacramento, California 95814-2922

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below. A notice of appeal options is enclosed.

Project Description:

To fill 3.91 acres of waters of the U.S., including 3.7 acres of vernal pools, 0.13 acres of seasonal wetlands, and 0.08 acres of seasonal drainage to construct 693 homes on approximately 85.5 acres and three neighborhood park sites totalling approximately 14.4 acres. The project also involves improvements to Douglas and Grant Line Roads; however, no impacts to waters of the U.S. are expected or authorized to occur as part of these road improvements.

All work is to be completed in accordance with the attached plan.

Project Location:

The proposed project is located in the southwest corner of the intersection of Grantline and Douglas Roads, within the SunRidge Specific Plan Area, which is within the larger Sunrise Douglas Community Plan Area, in Section 10, Township 8 North, Range 7 East, on the U.S.G.S. Buffalo Creek 7.5 quadrangle in Sacramento County, California.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on March 31, 2011. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted

December 30, 2004. The purpose of this requirement is to insure replacement of functions and values of the aquatic environment that would be lost through project implementation.

4. To mitigate for the loss of 3.91 acres of waters of the United States, you shall construct at least 3.91 acres of vernal pool habitat at a Corps approved location.
5. You shall construct the required compensatory mitigation concurrently with, or in advance of, the start of construction of the permitted activity.
6. You shall complete construction of the compensatory mitigation no later than December 31, 2006.
7. To insure that compensatory mitigation is completed as required, you shall notify the District Engineer of the date you start construction of the authorized work and the start date and completion date of the compensatory mitigation construction, in writing and no later than ten (10) calendar days after each date.
8. To provide a permanent record of the completed compensatory mitigation work, you shall provide two complete sets of as-builts of the completed work within the off-site mitigation area(s) to the Corps of Engineers. The as-builts shall indicate changes made from the original plans in indelible red ink. These as-builts shall be provided to this office no later than 60 days after the completion of construction of the mitigation area wetlands.
9. You shall establish and maintain, in perpetuity, compensatory preserves containing the 3.91 acres of created/restored vernal pool habitat required by Special Condition 4 at a Corps approved location, and 7.82 acres of high quality vernal pool habitat at a Corps approved location. The purpose of the preserves is to insure that project implementation does not result in a net loss of functions and values of the aquatic environment.
10. To minimize external disturbance to preserved or created/restored waters of the United States, you shall establish an adequate buffer, consisting of native upland vegetation surrounding the entire perimeter of all created, preserved, and avoided waters of the United States, including wetlands within the required off-site preserves. The buffer widths shall be proposed within the compensatory mitigation and monitoring plan and the preserve management plans. The buffer widths shall be explicitly approved in writing by the Corps prior to any work in waters.
11. To insure that the preserves are properly managed, you shall develop specific and detailed preserve management plans for the off-site mitigation, preservation, and avoidance areas. The plans shall be submitted to and specifically approved, in writing, by the Corps of Engineers prior to engaging in any work authorized by this permit. This plan shall describe in detail any activities that are proposed within the preserve area(s) and the long term funding and maintenance of each of the preserve areas.
12. To protect the integrity of the preserves and avoid unanticipated future impacts, no roads, utility lines, trails, benches, equipment or fuel storage, grading, firebreaks, mowing, grazing, planting, discing, pesticide use, burning, or other structures or activities shall be constructed or occur within the off-site mitigation, preservation, and avoidance areas without specific, advance written approval from the Corps of Engineers.
13. To prevent unauthorized access and disturbance, you shall, prior to December 31, 2006, install fencing and appropriate signage around the entire perimeter of the preserves. All fencing surrounding mitigation, preservation, avoidance, and buffer areas shall allow unrestricted visibility of these areas to discourage vandalism or disposing of trash or other debris in these areas. Examples of this type of fencing include chain link and wrought iron.
14. Prior to initiating any activity authorized by this permit, you shall, to insure long-term viability of

by law.

- b. This permit does not grant any property rights or exclusive privileges.
- c. This permit does not authorize any injury to the property or rights of others.
- d. This permit does not authorize interference with any existing or proposed Federal projects.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
- b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
- d. Design or construction deficiencies associated with the permitted work.
- e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data. The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant.

Circumstances that could require a reevaluation include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of this permit.
- b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General Condition 1 establishes a time limit for the completion of the activity authorized by

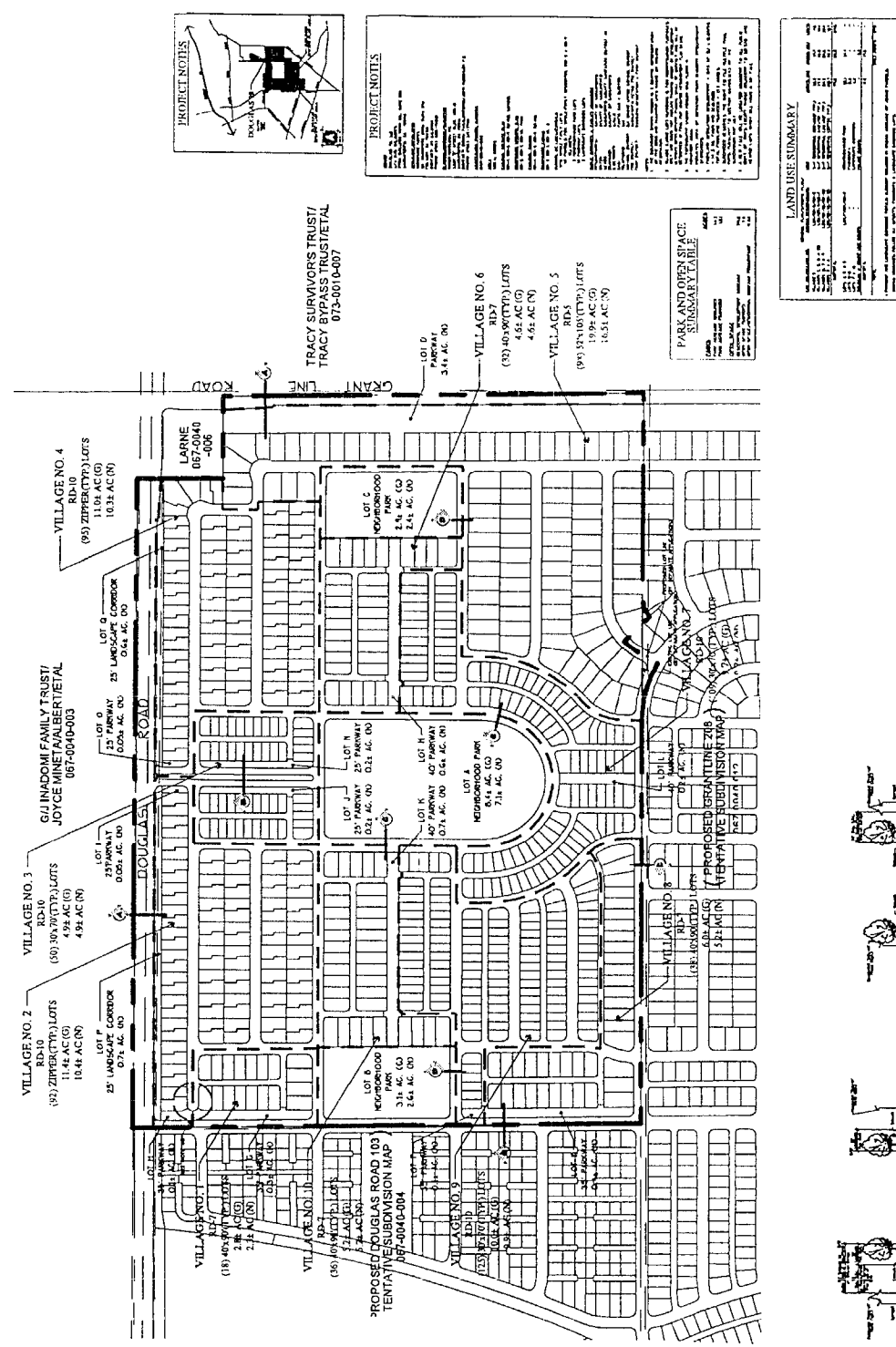


**DOUGLAS 98**  
CITY OF RANCHO CORDOVA, CALIFORNIA  
OCTOBER 3, 2005

EXHIBIT C SMALL LOT TENTATIVE SUBDIVISION MAP

DOUGLAS 98

CITY OF RANCHO CORDOVA, CALIFORNIA  
OCTOBER 3, 2005



**PROJECT NOTES**

1. THIS MAP IS A TENTATIVE SUBDIVISION MAP AND IS NOT A FINAL MAP.
2. THE CITY OF RANCHO CORDOVA HAS REVIEWED THIS MAP AND HAS DETERMINED THAT IT COMPLIES WITH THE SUBDIVISION MAP ACT.
3. THE CITY OF RANCHO CORDOVA HAS REVIEWED THIS MAP AND HAS DETERMINED THAT IT COMPLIES WITH THE SUBDIVISION MAP ACT.
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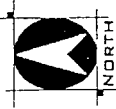
**LAND USE SUMMARY**

LAND USE	ACRES	PERCENT
RESIDENTIAL	100.00	100.00%
TOTAL	100.00	100.00%

**PARK AND OPEN SPACE SUMMARY TABLE**

ITEM	ACRES	PERCENT
PARK	10.00	10.00%
OPEN SPACE	90.00	90.00%
TOTAL	100.00	100.00%

**WOOD RODGERS**  
INNOVATIVE DESIGN SOLUTIONS  
3301 C STREET, BLDG. 100-B, SACRAMENTO, CA 95816  
PHONE: (916) 341-7760 FAX: (916) 341-7767





## United States Department of the Interior

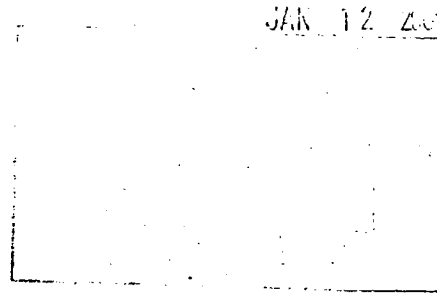
### FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825-1846



In reply refer to:  
1-1-04-F-0314

Mr. Justin Cutler  
Chief, Sacramento Valley Office  
Department of the Army  
U.S. Army Engineer District, Sacramento  
1325 J Street  
Sacramento, California 95814-2922



Subject: Formal Endangered Species Consultation on the proposed Douglas Road 98 Project (Corps File Number 200200568), Sacramento County, California

Dear Mr. Cutler:

This is in response to your September 23, 2004, letter and supporting documentation requesting Section 7 consultation for the proposed Douglas Road 98 project (proposed project) in Sacramento County, California. Your request was received by the U.S. Fish and Wildlife Service (Service) on September 27, 2004. At issue are potential adverse effects to the federally-listed vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardii*). Surveys conducted of the proposed project site have not indicated the presence of the federally-listed slender Orcutt grass (*Orcuttia tenuis*), the Sacramento Orcutt grass (*Orcuttia viscida*), and the California tiger salamander (*Ambystoma californiense*). This document represents the Service's biological opinion on the effects of the project on the threatened vernal pool fairy shrimp and endangered vernal pool tadpole shrimp, in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act).

The findings and requirements in this consultation are based on: (1) the July 30, 2004, *Douglas Road 98 Section 7 Biological Assessment, Sacramento County, California*, prepared by Foothill Associates, Inc.; (2) your September 23, 2004, letter initiating formal consultation; (3) the October 7, 2004, meeting attended by Ken Sanchez, Kelly Fitzgerald, and Stephanie Rickabaugh of the Service and Ellen Berryman of Foothill Associates; (4) an October 14, 2004, letter to the Service from Foothill Associates providing additional information based on questions raised at the October 7, 2004, meeting; (5) the October 26, 2004, letter from Foothill Associates to the Service; (6) the January 11, 2005, electronic mail correspondence from Ellen Berryman of Foothill Associates to the Service; and (7) information available to the Service.

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CNS06819

## Consultation History

Beginning on May 10, 2002, the Planning Department of the County of Sacramento initiated and facilitated a series of meetings to discuss and develop potential wetlands and endangered species permitting strategies for the Sunrise Douglas Community Planning Area (SDCPA). These meetings were attended by landowners, developers, and their representatives, staff from Congressman Doug Ose's office, California Department of Fish and Game, the Service, Department of Army-Corps of Engineers (Corps), and the Environmental Protection Agency (EPA). The entire group met at least twelve times between May 10th and November 22, 2002, in an attempt to develop a strategy to address issues relating to endangered species and wetland protection within the SDCPA. By November of 2002, a resolution was not reached and discussions ceased at that time.

On July 17, 2002, during this initial phase of meetings, the Sacramento County Board of Supervisors approved both the larger SDCPA and the SunRidge Specific Plan. On July 1, 2003, with the incorporation of the City of Rancho Cordova ("City"), the SDCPA came under the City's land use jurisdiction.

A smaller group of project proponents representing the property owners in the Sun Ridge Specific plan area initiated several meetings with the Fish and Wildlife Service during mid 2003. Discussions focused on avoidance of endangered species habitats in the SDCPA and specific plan areas. Again, no resolution with the Service was reached.

In March 2004, Congressman Doug Ose initiated meetings with the Federal Agencies, local agencies, and the landowners/developer representatives to facilitate resolution of the issues that had emerged during the previous meetings. Congressman Ose urged the Federal Agencies to develop a conceptual strategy that would meet the requirements of the Federal Agencies respective statutes. Congressman Ose urged the regulated parties to work cooperatively with the Federal agencies to explore mechanisms to accommodate the agencies' obligations to comply fully with pertinent federal laws and regulations, which place a premium on the avoidance of on-site wetlands resources to the extent practicable and the need to avoid jeopardizing the continued existence of threatened and endangered species. In short, the Congressman encouraged the parties to work cooperatively with one another to develop a conceptual onsite avoidance and offsite compensation strategy that reached a proper and workable balance between and amongst the following: the mandates of federal law; the need to preserve ecosystem integrity and the habitat of endangered and threatened species; the need to acknowledge the planning policies and objectives of the City of Rancho Cordova; and the need to account for the economic realities facing private sector developers. These meetings continued through September 2004.

In June of 2004 the Federal agencies developed two documents ("A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area"; and the accompanying planning map) that outline our strategies for conserving threatened and endangered species and wetland habitats and to provide a framework for development proposals. In addition, our strategy would provide some conceptual guidelines for permitting.

Service Correspondence

April 2, 1996, To: A. Champ-Corps of Engineers, Re: Formal Section 7 Consultation on Issuance of 404 Permit for the Sunrise Douglas Project (AKA Anatolia I, II, III), Service File #1-1-96-F-0062, Corps PN 190110021

November 22, 2002, To: M. Finan-Corps of Engineers, Re: Request for additional information on the Sunridge Specific Plan/Sunrise Douglas Community Plan, Service file #1-1-03-I-0411

July 18, 2002, To: D. Nottoli-Sacramento County Board of Supervisors, Re: Sunrise Douglas Community Plan and SunRidge Specific Plan-Service File # 1-1-02-CP-2579

April 26, 2004, To: Col. Conrad-Corps of Engineers, Re: SunRidge Specific Plan, Service file #/Corps PN 200000336

Consultation History Specific to the Proposed Project

September 21, 2004. Foothill Associates submitted a letter to the Service, providing proposed conservation measures for the vernal pool crustacean habitat that would be directly and indirectly affected by the proposed project. The Service received this letter on September 27, 2004.

September 23, 2004. The Corps requested initiation of Section 7 consultation with the Service. The Service received this request on September 27, 2004.

October 7, 2004. A meeting was attended by Ken Sanchez, Kelly Fitzgerald, and Stephanie Rickabaugh of the Service and Ellen Berryman of Foothill Associates to discuss the proposed project and other projects within the Sunrise Douglas Community Plan.

October 14, 2004. Foothill Associates submitted a letter to the Service providing additional information regarding questions raised by the Service during the meeting between the Service and Foothill Associates on October 7, 2004.

October 15, 2004. The Service provided a draft version of this biological opinion to the Corps.

October 26, 2004. Foothill Associates submitted a letter to the Service providing comments on the draft biological opinion that was provided to the Corps on October 15, 2004.

January 10, 2005. Ken Sanchez of the Service sent an electronic mail correspondence to Ellen Berryman of Foothill Associates regarding compensation measures for effects to federally-listed vernal pool crustaceans.

January 11, 2005. Ellen Berryman of Foothill Associates sent an electronic mail correspondence to Ken Sanchez of the Service clarifying the project applicant's proposed compensation measures for effects to federally-listed vernal pool crustaceans.

## BIOLOGICAL OPINION

### Description of the Proposed Action

The Douglas 98 project site is located in southeastern Sacramento County in the City of Rancho Cordova approximately five miles south of Highway 50. The project site is south and adjacent to Douglas Road, west and adjacent to Grantline Road, east of the proposed Americano Boulevard, and north of the proposed Pyramid Boulevard. The site is located in Section 10 of Township 8 North, Range 7 East on the U.S.G.S. Buffalo Creek 7.5' quadrangle.

The proposed project site is within the 6,042 acre Sunrise Douglas Community Plan area located within the Sacramento County General Plan Urban Service Boundary and Policy area. The project is also located within the Sunridge Specific Plan area, which provides a greater detailed land use plan for development of approximately 2,632 acres within the Sunrise Douglas Community Plan area.

The proposed project site consists of a  $\pm 105$ -acre parcel on which portions will be graded resulting in the loss of 3.91 acres of waters of the U.S. including 3.70 acres of vernal pools, 0.04 acres of depressional seasonal wetlands, 0.09 acres of riverine seasonal wetlands, and 0.08 acres of ephemeral drainages subject to Clean Water Act jurisdiction. The proposed general plan land use designation for the project area is Low Density Residential (LDR), Medium Density Residential (MDR), and Commercial and Office. The Proposed Project involves grading portions of the  $\pm 105$ -acre site in order to construct approximately 483 single family residences, a 2.1-acre multifamily residential site, a 3.6-acre school site, and associated infrastructure (sewer mains and laterals, water mains, and utility lines).

### Proposed Conservation Measures

The project applicant has proposed the following conservation measures in the July 30, 2004, *Douglas Road 98 Section 7 Biological Assessment*, and the October 14 and 26, 2004, letters to the Service, and the January 11, 2005, electronic mail correspondence from Foothill Associates to the Service to minimize adverse effects to the two federally-listed vernal pool crustacean species.

1. Standard construction Best Management Practices (BMPs) will be incorporated into construction designs, plans and specifications, and required of contractors during construction. The BMPs would include the following:
  - (a) All constructed slopes adjacent to the preserve will be hydroseeded with a native grassland mix. The hydroseed mix will be applied with a tackifying agent at a rate of at least 2 tons/acre and based on manufacturer's recommendations. The tackifying agent will be a hydraulic matrix which when applied, and upon drying, adheres to the soil to form a 100% cover which is biodegradable, promotes vegetation, and prevents soil erosion. The hydroseed mix will not be applied



before, during, or immediately after rainfall so that the matrix will have an opportunity to dry 24 hours after installation;

- (b) Certified weed-free straw wattles will be installed at the base of all slopes along the property lines of the Property Site. The existing Douglas Road currently provides additional erosion and sediment control to - improvement projects will be subject to a SWPPP and BMP monitoring. Prior to installation of the straw wattles, a concave key trench approximately 2 to 4 inches deep will be contoured along the proposed installation route. Soil excavated for the trenching will be placed on the uphill or flow side of the straw wattles to prevent water from undercutting the straw wattles. Stakes will be driven in on alternating sides of the straw wattles, to hold them in place. The straw wattles will be maintained for a period of time at least until the native grassland vegetation is fully established and the soil is stabilized;
  - (c) During construction all excavated materials will be deposited or stored such that this material cannot be washed into any watercourse, and excess supplies of certified weed-free straw bales and/or sedimentation fencing will be available at the construction site for periodic site-specific use as needed.;
  - (d) Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. No refueling, storage, servicing, or maintenance of equipment will take place within 100 feet of the adjacent off-site habitat. All machinery will be properly maintained and cleaned to prevent spills and leaks. Any spills or leaks from the equipment will be reported and cleaned up in accordance with applicable local, state and/or federal regulations;
  - (e) Temporary fencing will be installed prior to construction along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto adjacent off-site habitat; and
  - (f) An environmental monitor will be employed to ensure compliance with construction-related impact avoidance measures. The monitor will report directly to the City of Rancho Cordova Public Works project manager, and based on reports of non-compliance with environmental requirements, will be authorized to stop work orders and to take actions necessary to prevent damage to off-site habitat. Monitoring reports will be provided to the City of Rancho Cordova Department of Public Works project manager on a daily basis during initial ground breaking, and on a weekly basis (or more frequently as needed when problems arise) thereafter until construction is finished.
2. A Storm Water Pollution Prevention Plan (SWPPP) will be prepared for the Project, with the following objectives; (a) to identify pollutant sources, including sources of sediment, that may affect the quality of storm water discharges from the construction of the project;

(b) to identify BMPs to reduce or eliminate pollutants in storm water discharges and authorized non-storm water discharges, from the site during construction; (c) to outline and provide guidance for BMP monitoring; (d) to identify project discharge points and receiving waters; (e) to address post-construction BMP implementation and monitoring; and (f) to address sediment / siltation / turbidity and non-visually detectable pollutant monitoring, and outline a sampling and analysis strategy.

3. Habitat preservation and restoration has been proposed in the October 26, 2004, letter from Foothill Associates to the Service:

- (a) Direct effects to 3.91 acres of vernal pool crustacean habitat will be offset through habitat preservation. The project applicant proposes to provide compensatory preservation as follows:
  - 1. Two preservation acres of in kind habitat at the Anatolia preserve for each acre affected (2 acres : 1 acre); or
  - 2. Four preservation acres of in kind habitat at Borden Ranch for each acre affected (4 acres : 1 acre).
- (b) Direct effects to vernal pool crustacean habitat will be further offset through habitat restoration/creation equivalent to 3.91 acres (at a 1:1 ratio) at the Silva Consolidated Conservation Bank. The restoration/creation goal will be to create and enhance wetlands with habitat functions and values equal to, or greater than, the wetland features affected by the implementation of the proposed project. Habitat creation/restoration will be achieved through the purchase of vernal pool restoration/creation acreage

#### STATUS OF THE SPECIES

The vernal pool tadpole shrimp and vernal pool fairy shrimp were listed as endangered and threatened, respectively, on September 19, 1994. Final critical habitat was designated for these species on August 6, 2003 (68 FR 46684). Complete descriptions of these species are found in 59 FR 48136, the final rule listing these species under the Act. These crustaceans are restricted to vernal pools and swales and other seasonal aquatic habitats in California. Eng *et al.* (1990), Simovich *et al.* (1992), and (Service 1994c) provide further details about their life history and ecology. The Service did not designate any critical habitat for the vernal pool crustaceans in Sacramento County. Although the Service designated critical habitat for the vernal pool fairy shrimp in San Joaquin County, none will be affected by the proposed project.

#### Life History

*Vernal pool tadpole shrimp.* The vernal pool tadpole shrimp has dorsal compound eyes, a large shield-like carapace that covers most of its body, and a pair of long cercopods at the end of its last abdominal segment (Linder 1952, Longhurst 1955, Pennak 1989). It is primarily a benthic

animal that swims with its legs down. Its diet consists of organic detritus and living organisms, such as fairy shrimp and other invertebrates (Pennak 1989). The females deposit their eggs on vegetation and other objects on the pool bottom. Tadpole shrimp eggs are known as cysts during the summer, when they lie dormant in the dry pool sediments (Lanway 1974, Ahl 1991). The life history of the vernal pool tadpole shrimp is linked to the environmental characteristics of its vernal pool habitat. After winter rains fill the pools, the populations are re-established from dormant cysts. A portion of the cysts hatch immediately and the rest remain dormant in the soil to hatch during later rainy seasons (Ahl 1991). The vernal pool tadpole shrimp is a relatively long-lived species (Ahl 1991). Adults are often present and reproductive until the pools dry up in the spring (Ahl 1991, Simovich *et al.* 1992).

*Vernal pool fairy shrimp.* Vernal pool fairy shrimp have delicate elongate bodies, large stalked compound eyes, no carapace, and 11 pairs of swimming legs. The swim or glide gracefully upside-down by means of complex, wavelike beating movements. Fairy shrimp feed on algae, bacteria, protozoa, rotifers, and detritus. The females carry eggs in an oval or elongate ventral brood sac. The eggs are either dropped to the pool bottom or remain in the brood sac until the female dies and sinks. The dormant cysts are capable of withstanding heat, cold, and prolonged desiccation. When the pools refill in the same or subsequent seasons, some, but not all, of the cysts may hatch. The cyst bank in the soil may therefore be comprised of cysts from several years of breeding (Donald 1983). The early stages of the fairy shrimp develop rapidly into adults. The vernal pool fairy shrimp can mature quickly, allowing populations to persist in short-lived shallow pools (Simovich *et al.* 1992).

## Distribution

*Vernal pool tadpole shrimp.* The vernal pool tadpole shrimp is known from 168 occurrences in the Central Valley, ranging from east of Redding in Shasta County south to Fresno County, and from a single vernal pool complex located in the San Francisco Bay National Wildlife Refuge in Alameda County. It inhabits vernal pools containing clear to highly turbid water, ranging in size from 5 square meters (54 square feet) in the Mather Air Force Base area of Sacramento County, to the 36-hectare (89-acre) Olcott Lake at Jepson Prairie in Solano County.

*Vernal pool fairy shrimp.* The vernal pool fairy shrimp is known from 342 occurrences extending from Shasta County through most of the length of the Central Valley to Pinnacles in San Benito County (Eng *et al.* 1990, Fugate 1992, CNDDDB 2004) and Riverside County. Five disjunctive populations exist: one near Soda Lake in San Luis Obispo County; one in the mountain grasslands of northern Santa Barbara County; one on the Santa Rosa Plateau in Riverside County; one near Rancho California in Riverside County; and one on the Agate Desert near Medford, Oregon. The vernal pool fairy shrimp inhabits vernal pools with clear to tea-colored water, most commonly in grass- or mud-bottomed swales, basalt flow depression pools in unplowed grasslands, or even sandstone rock outcrops or alkaline vernal pools.

The genetic characteristics of these species, as well as ecological conditions, such as watershed continuity, indicate that populations of vernal pool crustaceans are defined by pool complexes rather than by individual vernal pools (Fugate 1992). Therefore, the most accurate indication of

the distribution and abundance of these species is the number of inhabited vernal pool complexes. The pools and, in some cases, pool complexes supporting these species are usually small. Human-caused and unforeseen natural catastrophic events such as long-term drought, non-native predators, off-road vehicles, pollution, berming, and urban development, threaten their extirpation at some sites.

### Dispersal

The primary historic dispersal method for the vernal pool tadpole shrimp and vernal pool fairy shrimp likely was large scale flooding resulting from winter and spring rains which allowed the animals to colonize different individual vernal pools and other vernal pool complexes. This dispersal is currently non-functional due to the construction of dams, levees, and other flood control measures, and widespread urbanization within significant portions of the range of this species. Waterfowl and shorebirds may now be the primary dispersal agents for vernal pool tadpole shrimp and vernal pool fairy shrimp. The eggs of these crustaceans are either ingested (Krapu 1974, Swanson *et al.* 1974, Driver 1981, Ahl 1991) and/or adhere to the legs and feathers where they are transported to new habitats.

### ENVIRONMENTAL BASELINE

Historically, vernal pools and vernal pool complexes occurred extensively throughout the Sacramento Valley of California. However, conversion of vernal pools and vernal pool complexes has resulted in a 91 percent loss of vernal pool resources in California (State of California 2003d). By 1973, between 60 and 85 percent of the area within the Central Valley that once supported vernal pools had been destroyed (Holland 1978). In the ensuing 30 years, threats to this habitat type have continued and resulted in a substantial amount of vernal pool habitat being converted for human uses in spite of Federal regulations implemented to protect wetlands. For example, between 1987 and 1992, 467 acres of wetlands within the Sacramento area were filled pursuant to Nationwide Permit 26 (Service 1992). A majority of those wetlands losses involved vernal pools, the endemic habitat of the vernal pool tadpole shrimp, the vernal pool fairy shrimp (shrimp), and slender and Sacramento Orcutt grasses. It is estimated that within 20 years human activities will destroy 60 to 70 percent of the remaining vernal pools (Coe 1988). In addition to direct habitat loss, the two shrimp populations have been and continue to be highly fragmented throughout their ranges due to conversion of natural habitat for urban and agricultural uses. Fragmentation results in small isolated shrimp populations. Ecological theory predicts that such populations will be highly susceptible to extirpation due to chance events, inbreeding depression, or additional environmental disturbance (Gilpin and Soulé 1988; Goodman 1987). If an extirpation event occurs in a population that has been fragmented, the opportunities for re-colonization would be greatly reduced due to physical (geographic) isolation from other (source) populations.

Human population growth in Sacramento County has steadily increased. On the average, Sacramento County has experienced an annual population increase of 1.38 percent for the period between 1991 and 1999 (Service 2000). For the period between 1990 and 2000, population growth in Sacramento County increased 17.5 percent, with an average annual growth rate of 17.5

percent (State of California 2002). This annual growth appears to be increasing, as demonstrated by the 2.63 percent and 2.2 percent increases in population growth in 2001 and 2002, respectively (State of California 2003a, 2003b). Increased housing demand and urban development accompany the population growth in Sacramento County. Between 1990 and 2000, housing units in Sacramento County increased by 1.37 percent annually (State of California 2000, 2003c). Population growth and concomitant housing demand and subsequent vernal pool resource development are projected to continue. Population projections for Sacramento County are expected to increase above 2000 levels by 19.7 percent in 2010, by 28 percent in 2015, and by 37.5 percent in 2020 (State of California 2001).

Sacramento County represents important, high quality habitat for the two shrimp populations by providing large, nearly contiguous areas of relatively undisturbed vernal pool habitat. Sacramento County contains the greatest number of occurrences of vernal pool tadpole shrimp within the range of the species, and also is one of the two counties with the greatest number of occurrences of vernal pool fairy shrimp within the range of the species. Sacramento County contains 58 (17 percent) out of the total of 342 reported occurrences of vernal pool fairy shrimp, and 58 (34 percent) out of the total of 173 reported occurrences of vernal pool tadpole shrimp (CNDDDB 2004). Further, Sugnet and Associates (1993) reported that of 3,092 "discrete populations" checked, only 345 locations, or about 11 percent of all locations checked, were found to support the vernal pool tadpole shrimp. Of these 345 locations supporting the vernal pool tadpole shrimp, 219 (63 percent) were in Sacramento County. Further, of the 3,092 locations checked, 178 locations (6 percent) were found to support the vernal pool fairy shrimp. Of this total, 63 locations (35 percent) were within Sacramento County.

The vernal pool tadpole shrimp and vernal pool fairy shrimp are imperiled by a variety of human-caused activities. Their habitats have been lost through direct destruction and modification due to filling, grading, diking, leveling, and other activities. In addition, vernal pools have been imperiled by a variety of anthropogenic modifications to upland habitats and watersheds. These activities, primarily urban development, water supply/flood control projects, land conversion for agriculture, off-road vehicle use, certain mosquito abatement measures, and pesticide/herbicide use can lead to disturbance of natural flood regimes, changes in water table depth, alterations of the timing and duration of vernal pool inundation, introduction of non-native plants and animals, and water pollution. These indirect effects can result in adverse effects to vernal pool species.

A number of State, local, private, and unrelated Federal actions have occurred within the project area and adjacent region affecting the environmental baseline of these species. Some of these projects have been subject to prior section 7 consultation. Based on an informal review, the Service has issued approximately 157 biological opinions to Federal agencies on proposed projects in Sacramento County that have adversely affected the shrimp species since the two species were proposed to be listed in 1994. This total does not reflect the formal consultations that were withdrawn, those that are suspended, those that have insufficient information to conclude an effects analysis, those that were amended, or ones that the Service issued a conference opinion. No State of California actions have taken place within Sacramento County that have adversely affected the species in the action area. Although these proposed projects in Sacramento County have eliminated vernal pools and vernal pool complexes, the offsetting

compensating measures are designed to minimize the effects of take of these species resulting in both negative and positive effects to the species. Thus, the trend for the two vernal pool species within the county is most likely static.

The actions listed above have resulted in both direct and indirect impacts to vernal pools within the region, and have contributed to the loss of vernal pool tadpole shrimp and vernal pool fairy shrimp populations. Although a reduction of the two shrimp populations has not been quantified, the acreage of lost habitat continues to grow.

In south Sacramento County, the Urban Services Boundary (USB) is a planning boundary that coincides with the areas north of the Cosumnes River/Deer Creek drainage system. Between 1993 and 2000, an estimated 14,950 acres were converted to urban development within the USB (pers. comm., D. Gifford, 2004), based on an analysis of the California Department of Water Resources mapping data. An independent analysis of urban growth in Sacramento County estimated that an estimated 22,000 acres were converted between 1990 and 2000, averaging 2,200 acres per year (pers. comm., Richard Radmacher, Sacramento County, 2004). As of 1998 (the most recent year for which vernal pool mapping from aerial photographs is available), there remained an estimated 23,533 acres of vernal pool grasslands within the USB, supporting approximately 946 acres of wetted vernal pool acreage (pers. comm., Lora Konde, California Department of Fish and Game, 2003).

Vernal pool complexes, occurring north of the Cosumnes River/Deer Creek drainage and within the USB, contain a high density of occupied pool of both vernal pool tadpole shrimp and vernal pool fairy shrimp. There are 31 known occurrences of vernal pool tadpole shrimp inside the USB, compared to 17 occurrences outside the USB (CNDDDB 2003). There are 25 known occurrences of vernal pool fairy shrimp inside the USB, compared to 18 occurrences outside the USB (CNDDDB 2004). The data from the CNDDDB do not reflect additional reported records in the Sunrise-Douglas area, where 137 occurrences of vernal pool tadpole shrimp and 46 occurrences of vernal pool fairy shrimp, and 2 occurrences of orcutt grasses (2 slender Orcutt grass and 4 Sacramento Orcutt grass) are reported (pers. comm., Arnold Roessler, Service, 2004). An additional occurrence of slender Orcutt grass has been reported, but not recorded in the CNDDDB (pers. comm. Pete Balfour, ECRP Consulting, 2004).

The vernal pools on the proposed project site are classified as the old-terrace type and are located on soils associated with Laguna geologic formation. Old-terrace is a rapidly disappearing habitat type in Sacramento County that consists of ancient river channel deposits that were laid down from 600,000 to more than one million years ago by the American River. By comparison, young-terrace formation dates from 100,000 to 200,000 years ago. Old-terrace formation generally has a higher density of vernal pools, deeper pools, and a greater number of special status plants and crustaceans than young-terrace formations. Some special status species found in old-terrace pools may have evolved from species inhabiting shores of ancient lakes in the Central Valley. Old-terrace pools may have served as refugia for these species as the lakes disappeared. Sacramento County contains an estimated 764 wetted acres of vernal pools on low terrace, 1,390 wetted acres of vernal pools on high terrace, and 189 wetted acres of vernal pools on volcanic mudflow vernal pools.



There are two predominant soil types found within south Sacramento County. The Valley Springs soil type typifies Gill Ranch, located in Sacramento County and approximately 12 miles southeast of the project site. Vernal pools found within the Valley Springs soil type are the young-terrace formation. Young-terrace formations, because they have a higher slope gradient, tend to have fewer vernal pools that are typically smaller and more shallow. These vernal pools also are inundated for shorter durations. These factors typically result in lower species diversity. Generally, the larger the vernal pool on this soil type, the higher its biotic diversity. Vernal pool fairy shrimp, vernal pool tadpole shrimp, and Sacramento Orcutt grass are less likely to occur in young-terrace formation vernal pools found on Valley Springs soils. (Holland, pers. comm., 2004).

The Laguna geologic formation and its associated soils entirely characterizes the Sunrise Douglas Community Plan Area. Vernal pools found within this soil type are old-terrace types. Old-terrace types, because they have a lower slope gradient, tend to have pools that are larger, deeper, and clearer. These pools are inundated for longer periods, but dry and refill less often than the Valley Springs soil type. Generally, the smaller the vernal pool on this soil type, the higher its invertebrate diversity. Although vernal pool fairy shrimp occur in pools on both soil types, but more frequently in pools on Laguna soils. Vernal pool tadpole shrimp are found almost exclusively in old-terrace formation vernal pools found on Laguna soils.

Several areas containing old-terrace formation have been protected for their high quality vernal pool habitat and high concentration of special status species populations by the Sacramento Valley Conservancy (SVC). This potential preserve area, the SVC's Vernal Pool Prairie Preserve, would cover 2,000 to 3,000 acres and supports a variety of special status plants and animals on relatively undisturbed grasslands containing young and old terrace formations and northern hardpan vernal pools. Within the proposed Prairie Preserve, areas already protected include the Arroyo Seco Mitigation Bank, the Excelsior 184 parcel, and the Sacramento County-owned Multi Cultural Park; outside of the proposed Prairie Preserve, the Sunrise Douglas Preservation Bank, and a portion of Howard Ranch are protected. All of these preserves are within proposed critical habitat for the two listed vernal pool crustaceans addressed in this biological opinion.

There are 342 records of vernal pool fairy shrimp and 173 records of vernal pool tadpole shrimp recorded in the CNDDB for the entire state of California (CNDDB 2004). Of these records, 58 vernal pool fairy shrimp records and 58 vernal pool tadpole shrimp records are from Sacramento County (CNDDB 2004). Vernal pool fairy shrimp and vernal pool tadpole shrimp have both been observed in wetlands throughout the Sunrise Douglas area.

*Vernal pool fairy shrimp located within the Sunridge Specific Plan:* There is one record within the Sunridge Specific Plan boundaries, and another 17 records located within five miles of the Sunridge Specific Plan area boundaries. The nearest occurrence (# 43) of this species, observed in March 1996, is a half of a mile southwest of the proposed project site.

*Vernal pool tadpole shrimp within the Sunridge Specific Plan:* There are two records within the Sunridge Specific Plan boundaries, and another 23 records within five miles of these boundaries.

The nearest two occurrences (# 54 and # 23) of this species are within 1.5 miles of the proposed project site. One of these recorded occurrences (# 54), located to the west of the site, was observed in February of 1993; and the other recorded occurrence (# 23), located to the east of the site, was observed in 1996.

Focused surveys on the proposed project Site for vernal pool crustaceans were conducted between February and March of 1993, by Sugnet and Associates (1993). The results of this survey indicated the presence of California linderiella (*Linderiella occidentalis*) from four discrete locations, and vernal pool fairy shrimp from one location. However, all of the vernal pools and seasonal wetlands on the proposed project site provide appropriate habitat for both vernal pool fairy shrimp and vernal pool tadpole shrimp. In addition, these species are known from other parcels within the Sunrise Douglas Community Plan area and vicinity, and it is likely the vernal pool crustaceans would disperse within the watershed between the proposed project sites.

## EFFECTS OF THE PROPOSED ACTION

### Direct Effects

Direct effects are the effects of the action that would directly affect the species, for example, those actions that would immediately remove or destroy habitat or displace animals and plants. The construction of the proposed project would result in the direct loss of 3.91 acres of vernal pool crustacean habitat and the death of an unknown number of vernal pool fairy shrimp and vernal pool tadpole shrimp and/or their cysts. Our analysis is based on the assumption that the proposed project will be implemented within two (2) calendar years of the date of the issuance of this biological opinion.

### Indirect Effects

Vernal pool habitat indirectly affected includes all habitat supported by future destroyed upland areas and swales, and all habitat otherwise damaged by loss of watershed, human intrusion, introduced species, and pollution that will be caused by the project. The proposed project will not result in any indirect effects. Habitat to the north and east is divided from the proposed project site by a major roadways and therefore indirect impacts are not anticipated. Because lands to the west and south are within the approved Sunrise Douglas Community Plan/Sunridge Specific Plan, habitat in these areas would be directly removed and offset by adjacent proposed development. Therefore, separate Section 7 consultation will be initiated on lands adjacent to the project site and indirect impacts to these areas are expected to be offset through this process.

### Interrelated and Interdependent Actions

Additional effects from interrelated and interdependent actions are expected from the proposed project. Approximately 115 acres of vernal pools are present in the entire Sunridge Specific Plan area (Foothill Associates 2004). The Corps issued a permit for the largest project in this area, the approximately 1,225-acre Sares-Regis property that included approximately 71 acres of vernal

pools (Corps file number 190110021). This Corps permit authorized fill of approximately 27 acres of vernal pool crustacean habitat, and required the preservation of 44 acres of vernal pools within a 482-acre on-site preserve. With the exception of this preserve and a designated open space area along Laguna Creek near Grant Line Road, the Sunridge Specific Plan land use designations and zoning provide for urban land use throughout the plan's areas. Therefore, the majority of the remaining 44 acres of vernal pools outside the Sares-Regis property are expected to be filled for future urban development (Foothill Associates 2004).

Development of the SDCPA will require the extension of certain utilities and the enlargement of certain roads in areas outside of the SDCPA boundary. Utility improvements include the development of a well field, water supply lines, and water treatment facilities and sewer lines. Well locations have all been sited to avoid affects to aquatic habitats. The water treatment facility will be located on land permitted for take in the Anatolia project (Service file number 1-1-96-F-0062) within the SDCPA boundary. All offsite road improvements and the sewer and water lines will be constructed in existing rights-of-way with affects to aquatic resources totaling less than one-half of an acre (Foothill Associates 2004).

All infrastructure improvements are required to serve the already permitted Anatolia project. Affects resulting from offsite infrastructure development and road widening to Sunrise Boulevard from White Rock Road, to Pyramid Road, to Douglas Road from Sunrise Boulevard, and to Americanos Road, are covered under separate Nationwide14 Permits (Corps file number 200300697), which are currently in review by the Service. Two additional road improvement projects will be permitted under Phase I and will provide service to Anatolia and the remaining projects within the SDCPA. Jaeger Road, an existing two-lane, partially paved road, will be paved from Douglas Road south to Pyramid Road. Pyramid Road, an existing dirt road, will be improved from Sunrise Boulevard to Jaeger Road. The two road improvements will affect less than one-tenth an acre (Foothill Associates 2004).

Continuing development in southern Sacramento County requires the installation of supporting infrastructure, such as sewer interceptors. The proposed Laguna Creek Interceptor would carry waste from developments that are scheduled for the Laguna area. The exact route of the proposed Laguna Creek Interceptor is not known at this time; however the proposed project could have both direct and indirect effects on listed vernal pool crustaceans, and other listed species. The proposed Laguna Creek Interceptor, approximately 87,000 feet in length, would extend eastward from the Sacramento Regional Water Treatment Plant (SRWTP) to east of Sunrise Boulevard (SRCSD 2000). The proposed Laguna Creek Interceptor would service an area which extends northwest from the intersection of Bradshaw and Calvin Roads nearly to the intersection of White Rock and Scott Roads, including the entire proposed Sunrise-Douglas development. This proposed interceptor would also provide tie-ins for the future Deer Creek Interceptor, approximately 90,000 feet in length, which is proposed for construction between 2021 and 2032, and the Aerojet Interceptor, approximately 55,000 feet in length, which is proposed for construction between 2014 through 2033 (SRCSD 2000). These two interceptors would eventually service areas east of Grant Line Road and northeast of Sunrise Road, respectively. Construction for the proposed Laguna Creek Interceptor is proposed for 2010 through 2024.

These future projects may adversely affect several federally-listed species, including the vernal pool crustaceans, the giant garter snake (*Thamnophis gigas*), the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), the California tiger salamander, the California red-legged frog (*Rana aurora draytonii*), the delta smelt (*Hypomesus transpacificus*) and its designated critical habitat, and the slender and Sacramento Orcutt grasses.

Currently, a South Sacramento Habitat Conservation Plan (SSHCP) is being developed. So therefore, while development activities in south Sacramento County may negatively affect vernal pool crustaceans and other listed species and their habitats, if completed, the SSHCP may eventually ensure that development activities would avoid, minimize, and compensate for take of listed species to the greatest extent possible. The SSHCP would address the indirect affects of facilitated planned development that results from the interrelated and interdependent actions that result from the proposed project. At minimum, the SSHCP will address the Federal and State listed species known at this time that may be affected by actions that are reasonably foreseeable as a result of the proposed action. Additional HCP-covered species may be added as the HCP is being developed. The SSHCP will be coordinated with CDFG and will include any appropriate State listed species. The SSHCP will address actions that are within the land use authority of Sacramento County and are reasonably foreseeable as a result of the proposed action, including land use approvals that are related to entitlements. Additional activities may be added as the SSHCP is developed. The SSHCP will cover a cumulative effects boundary area that is reasonably foreseeable as a result of the proposed project and the future projects.

### Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

A number of on-going and proposed projects could contribute to adverse affects to vernal pool crustaceans within Sacramento County, particularly in the vicinity of the proposed project. In most cases; however, these actions would be subject to Federal review and would, therefore, not be considered cumulative to the proposed project. For instance, several large highway and light rail construction, road improvement, water transfer, and utility and interceptor installation projects are currently planned or underway in south Sacramento County. These projects will contribute to the loss and degradation of habitats of listed species across their range, particularly in south Sacramento County. These activities may alter vernal pool crustacean habitats and can potentially harass, harm, injure, or kill these species. Because these activities have a Federal nexus, the Service will analyze these projects to determine if they will result in the jeopardy of federally-listed species and/or adverse modification and destruction of critical habitat for these species. An undetermined number of future projects that alter the habitat of vernal pool crustaceans, however, could go forward without the need for a Corps 404 permit. Activities that would potentially affect listed vernal pool crustaceans include development associated with urban, water, flood control, highway/roadway and utility projects, application of herbicides/pesticides, conversion to agricultural use, and indirect effects of adjacent development

such as urban run-off altering the hydrologic regime.

## **Conclusion**

After reviewing the current status of the vernal pool tadpole shrimp and vernal pool fairy shrimp, the environmental baseline for the area covered by this biological opinion, the effects of the proposed project, and the cumulative effects, it is the Service's biological opinion that the Douglas Road 98 project, as proposed, is not likely to jeopardize the continued existence of the vernal pool tadpole shrimp and vernal pool fairy shrimp. The proposed project is not located within designated critical habitat for the vernal pool fairy shrimp and vernal pool tadpole shrimp, and therefore, no destruction or adverse modification of critical habitat is anticipated.

## **INCIDENTAL TAKE STATEMENT**

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

## **Amount or Extent of Take**

The Service anticipates incidental take of the vernal pool fairy shrimp and vernal pool tadpole shrimp will be difficult to detect or quantify. The cryptic nature of these species and their relatively small body size make the finding of a dead specimen unlikely. The species occur in habitats that make them difficult to detect. Due to the difficulty in quantifying the number of individuals that will be taken as a result of the proposed action, the Service is quantifying take incidental to the project as the number of acres of vernal pools/ponded depressions (vernal pool

crustacean habitat) that will become unsuitable for vernal pool crustaceans due to direct or indirect effects as a result of the action. Therefore, the Service estimates that all vernal pool fairy shrimp and vernal pool tadpole shrimp inhabiting 3.91 acres of vernal pool habitat will become harassed, harmed, injured, or killed, as a result of the proposed action.

### **Effect of the Take**

The Service has determined that this level of anticipated take is not likely to result in jeopardy to the vernal pool fairy shrimp or the vernal pool tadpole shrimp. This action will not result in destruction or adverse modification of critical habitat.

Upon implementation of the following reasonable and prudent measures, incidental take associated with the proposed project on the vernal pool fairy shrimp and vernal pool tadpole shrimp in the form of harm, harassment, and mortality in the form of habitat degradation will become exempt from the prohibitions described under section 9 of the Act for direct and indirect effects.

### **Reasonable and Prudent Measures**

The Service has determined that the following reasonable and prudent measure is necessary and appropriate to minimize the effects of the proposed project on the vernal pool tadpole shrimp and vernal pool fairy shrimp.

1. Minimize the direct and indirect impacts to federally listed vernal pool crustaceans resulting from habitat modification and habitat loss in the Sunrise Douglas Community Plan Area.

### **Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the Act, the Corps must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

1. The Corps shall fully implement the principles and standards outlined in the document titled, "June 2004 Conceptual Strategy for Avoiding Minimizing and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area", for this project.
2. The Corps shall fully implement the Agencies' March 2004 map titled, "Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection" for this project.
3. The Corps shall assure all conservation measures as proposed by the project proponent in the July 30, 2004, *Douglas Road 98 Section 7 Biological Assessment*, and the October 14 and 26, 2004, letters from Foothill Associates to the Service, and the January 11, 2005, electronic mail correspondence from Foothill Associates to the Service, and identified by



the Service in the project description of our biological opinion are fully implemented.

4. The Corps shall assure the following "Best Management Practices" are implemented during project construction:
  - a. The project proponent shall include a copy of this biological opinion within its solicitations for construction of the proposed project, making the prime contractor responsible for implementing all requirements and obligations included within the biological opinion, and to educate and inform all other contractors involved in the project as to the requirements of the biological opinion. The project proponents shall make the terms and conditions in this biological opinion a required item in all contracts for the project that are issued by the County to all contractors. The project proponents shall provide the Division Chief of Endangered Species (Central Valley) at the Sacramento Fish and Wildlife Office with a hardcopy of the contract(s) for this project at least ten (10) working days before it is accepted or awarded.
  - b. At least 30 calendar days prior to initiating construction activities, the project proponents shall submit the names and curriculum vitae of the biological monitor(s) for the project.
  - c. A Service-approved biologist must be on-site during all construction-related activities that occur within 250 feet of vernal pool crustacean habitat, and that could result in the take of these federally-listed species. The biologist will have the authority to halt any action that might result in take of listed species. If the biologist exercises this authority, the Service and the CDFG shall be notified by telephone and letter within one (1) working day.
  - d. A Worker Environmental Awareness Training Program for construction personnel shall be conducted before the commencement of construction. The program shall provide workers with information on their responsibilities with regard to the listed vernal pool crustaceans, an overview of the life-history of the species, information on take prohibitions, and an explanation of the relevant terms and conditions of this biological opinion. Written documentation of the training must be submitted to the Sacramento Fish and Wildlife Office within three (3) working days of the completion of instruction.
  - e. Prior to groundbreaking, high-visibility fencing that is at least 4 feet tall shall be placed along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto adjacent off-site habitat. Such fencing will be inspected by the on-site biologist at the beginning of each work day and maintained in good condition. The fencing may be removed only when the construction of the project is completed.
  - f. During construction operations, the number of access routes, number and size of staging areas, and the total area of the proposed project activity will be limited to the

minimum necessary. Routes and boundaries will be clearly demarcated. Movement of heavy equipment to and from the project site will be restricted to established roadways to minimize habitat disturbance, and all vehicle traffic on access road will observe a speed limit of 20 miles per hour. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the wetland avoidance areas. All fueling, cleaning, and maintenance of vehicles and other equipment will occur only within designated areas and at least 250 feet away from any wetland habitats. The applicant will ensure contamination of habitat does not occur during such operations. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately. Such spills will be reported in the post-construction compliance reports.

- g. To control erosion during and after implementation of the project, the applicant will implement best management practices (BMPs), as identified by the Central Valley Regional Water Quality Control Board. Erosion control measures and BMPs, which retain soil or sediment, runoff from dust control, and hazardous materials on the construction site and prevent these from entering the vernal pool complexes, will be placed, monitored, and maintained throughout the construction operations. These measures and BMPs may include, but are not limited to, silt fencing, sterile hay bales, vegetative strips, hydroseeding, and temporary sediment disposal. The Stormwater Pollution Prevention Plan (SWPPP) described in the Description of the Proposed Action section of this Biological Opinion shall include these and any other measures necessary to prevent the discharge of contaminated runoff onto adjacent offsite wetland habitats.
- h. All heavy equipment, vehicles, and supplies will be stored at the designated staging area at the end of each work period. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the open space/wetland preserve and offsite wetland avoidance areas. Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. All fueling, cleaning, maintenance, and staging of vehicles and other equipment will occur only within designated areas and at least 250 feet away from the open space/wetland preserve and any off-site vernal pool crustacean habitats. All machinery will be properly maintained and cleaned to prevent spills and leaks. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately in accordance with applicable local, state and/or federal regulations. Such spills will be reported in the post-construction compliance reports.
- i. No clearing of vegetation and scraping, or digging, of soil in the avoided/preserve area.

5. The Corps shall ensure the applicant complies with the *Reporting Requirements* of this biological opinion.
6. The applicant has proposed to offset direct and/or indirect effects of vernal pool crustacean habitat loss through habitat preservation offsite. Prior to any fill of wetlands on the proposed project site, credits commensurate with acreage commitment shall be dedicated within a Service-approved habitat preservation bank and documentation provided to the Service. If the applicant chooses not to use an approved preservation bank, then at least 120 days prior to construction, the applicant shall submit documentation of the preservation habitat including conservation easement, management plan, funding instrument, easement holder etc. for our approval. Habitat preservation and restoration has been proposed in the October 26, 2004, letter from Foothill Associates to the Service:
  - (a) Direct effects to 3.91 acres of vernal pool crustacean habitat will be offset through habitat preservation. The project applicant proposes to provide compensatory preservation as follows:
    1. Two preservation acres of in kind habitat at the Anatolia preserve for each acre affected (2 Acre : 1 Acre); or
    2. Four preservation acres of in kind habitat at Borden Ranch for each acre affected (4 acres : 1 acre).
7. The applicant has proposed to offset direct and/or indirect effects of vernal pool crustacean habitat through habitat restoration or creation. Prior to any fill of wetlands on the proposed project site, credits commensurate with acreage commitment shall be dedicated within a Service-approved habitat restoration/creation bank. If the applicant chooses not to use an approved creation/restoration bank, then at least 90 days prior to construction, the applicant shall submit documentation of the creation/restoration habitat including: construction plan, conservation easement, management plan, funding instrument, easement holder etc. for our approval. The following criteria will be used by the Service when approving a restoration/creation site:
  - a. The restoration site's soils will be appropriate vernal pool soil types (e.g., San Joaquin, Redding, Corning);
  - b. The restoration site's soil would have been disturbed at some point in the past, either through land leveling, ditching and draining, berming, or other disturbance that has removed or modified edaphic and hydrologic features necessary to support vernal pool habitat; and
  - c. The restoration site will have a Service-approved conservation easement, a preserve management plan, and a long-term funding mechanism in place upon Service approval.

## Reporting Requirements

A post-construction compliance report prepared by the monitoring biologists must be submitted to the Chief of the Endangered Species Division (Central Valley) at the Sacramento Fish and Wildlife Office within thirty (30) calendar days of the completion of construction activity or within thirty (30) calendar days of any break in construction activity lasting more than thirty (30) calendar days. This report shall detail (i) dates that groundbreaking at the project started and the project was completed; (ii) pertinent information concerning the success of the project in meeting compensation and other conservation measures; (iii) an explanation of failure to meet such measures, if any; (iv) known project effects on federally-listed species, if any; (v) occurrences of incidental take of any these species; and (vi) other pertinent information.

The project applicant must report to the Service immediately any information about take or suspected take of federally-listed species not authorized in this biological opinion. The project applicant must notify the Service within 24 hours of receiving such information. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal. The Service contact is the Resident Agent-in-charge of the Service's Law Enforcement Division at (916) 414-6660.

Any contractor or employee, who during routine operations and maintenance activities, inadvertently kills or injures a federally-listed species must immediately report the incident to their representative. This representative must contact the California Department of Fish and Game immediately in the case of a dead or injured listed species. The California Department of Fish and Game contact for immediate assistance is State Dispatch at (916) 445-0045.

## CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases. The Service recommends the following conservation measures:

1. The Corps should work with the Service to address significant, unavoidable environmental effects resulting from projects proposed by non-Federal parties.
2. As recovery plans for listed vernal pool crustacean species are developed, the Corps should assist the Service in their implementation.
3. The Corps should work with the Service to ensure that its wetland delineation techniques fully assess the affects of proposed projects on listed vernal pool crustacean species.
4. The Corps, in partnership with the Service, should develop maintenance

guidelines for the Corps projects that will reduce adverse effects of routine maintenance on vernal pool crustaceans and their habitats. Such action may contribute to the delisting and recovery of the species by preventing degradation of existing habitat and increasing the amount and stability of suitable habitat.

5. The Corps should conduct a study of cumulative loss of wetlands habitat, including habitat of listed crustaceans, in Sacramento County.

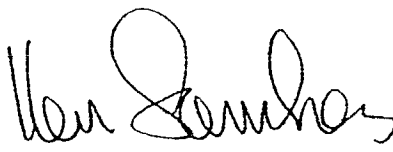
In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

#### REINITIATION—CLOSING STATEMENT

This concludes formal consultation on the proposed Douglas Road 98 project. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or, (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Please contact this office at (916) 414-6645, if you have any questions regarding the proposed Douglas Road 98 project.

Sincerely,

  
for Susan Moore  
Acting Field Supervisor

cc:

ARD (ES), Portland, Oregon

Mr. Kent Smith, California Dept. of Fish and Game, Rancho Cordova, CA

Ms. Elizabeth Goldman, Environmental Protection Agency, San Francisco, CA

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#### PERSONAL COMMUNICATIONS

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Mr. Justin Cutler

25

Pete Balfour. 2004. ECORP Consulting.

DEPARTMENT OF THE ARMY PERMIT

Permittee: Jim Galovan  
Douglas Grantline 103 Investors, LLC  
111 Woodmere Drive, Suite 190  
Folsom, California 95630

Permit Number: 199700006

Issuing Office: U.S. Army Engineer District, Sacramento  
Corps of Engineers  
1325 "J" Street  
Sacramento, California 95814-2922

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below. A notice of appeal options is enclosed.

Project Description:

To place dredged or fill material into 1.98 acres of waters of the United States to construct a mixed use development on an approximately 106.4-acre site.

All work is to be completed in accordance with the attached plan(s).

Project Location:

Within the SunRidge Specific Plan Area in Rancho Cordova, California, Section 10, Township 8 North, Range 7 East, on the U.S.G.S. Buffalo Creek 7.5" quadrangle.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on December 31, 2012. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. The project shall comply with the provisions of the Conceptual Level Strategy for Avoiding, Minimizing, and Preserving On-Site Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area dated June, 2004.
2. This Corps permit does not authorize you to take any threatened or endangered species, in particular the vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardii*), or designated critical habitat. In order to legally take a listed species, you must have a separate authorization under the Endangered Species Act Section 10 permit, or a Biological Opinion under Endangered Species Act Section 7, with incidental take provisions with which you must comply.) The USFWS Biological Opinion (Number 1-1-06-F-0041, dated March 16, 2006), contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with incidental take that is also specified in the Biological Opinion. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with the incidental take statement in the Biological Opinion, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the Biological Opinion, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its Biological Opinion, and with the Endangered Species Act. The permittee must comply with all conditions of this Biological Opinion, including those ascribed to the Corps.
3. You shall develop a final comprehensive mitigation and monitoring plan, which must be approved by the Army Corps of Engineers prior to initiation of construction activities. The plan shall address all mitigation phases and include mitigation location and design drawings, vegetation plans, including target species to be planted, and final success criteria, presented in the format of the Sacramento District's Habitat Mitigation and Monitoring Proposal Guidelines, dated December 30, 2004. The purpose of this requirement is to insure replacement of functions and values of the aquatic environment that would be lost through project implementation.
4. To mitigate for the loss of 1.98 acres of waters of the United States, and indirect impacts to an additional 5.27 acres of waters of the United States, you shall construct 7.25 acres of vernal pool habitat at a Corps approved location. In order to help ensure the success and long-term viability of the created habitats, they should be created at a density that approximates that found near the creation site in naturally-occurring

complexes of the same aquatic type.

5. You shall construct the required compensatory mitigation for each phase; as shown by the enclosed May 02, 2007, electronic mail from Ellen Berryman of Berryman Ecological; concurrently with, or in advance of, the start of construction of that phase of the permitted activity.
6. You shall complete construction of the compensatory mitigation for each development phase by October 1st of the year in which the phase was initiated.
7. To insure that compensatory mitigation is completed as required, you shall notify the District Engineer of the date you start construction of each phase of the authorized work and the start date and completion date of each phase of the compensatory mitigation construction, in writing and no later than ten (10) calendar days after each date.
8. To provide a permanent record of the completed compensatory mitigation work, you shall provide two complete sets of as-builts of the completed work within the off-site mitigation area(s) to the Corps of Engineers. The as-builts shall indicate changes made from the original plans in indelible red ink. The as-builts for each phase shall be provided to this office no later than 60 days after the completion of construction of the phase's mitigation area wetlands.
9. You shall establish and maintain, in perpetuity, wetland and wildlife preserves containing the 7.25 acres of created/restored vernal pool habitat required by Special Condition 4, the 2.99 acres of jurisdictional waters located at the on-site preserve, and 5.89 acres of naturally-occurring vernal pool habitat at a Corps approved location.
10. To minimize external disturbance to preserved or created/restored waters of the United States, you shall establish an adequate buffer, consisting of native upland or wetland vegetation surrounding the entire perimeter of all created, restored, or preserved waters of the United States, including wetlands within the off-site preserves. The buffer widths shall be proposed within the compensatory mitigation and monitoring plan and the preserve management plans and shall be explicitly approved in writing by the Corps prior to any work in waters of the U.S. The on-site preserve shall contain a buffer as shown on the enclosed site plan.
11. To insure that the preserves are properly managed, you shall develop specific and detailed preserve management plans for the on-site and off-site mitigation, preservation, and avoidance areas. The plans shall be submitted to and specifically approved, in writing, by the Corps of Engineers prior to engaging in any work authorized by this permit. The plans shall describe in detail any activities that are proposed within the preserve areas and the long term funding and maintenance of each of the preserve areas.
12. To prevent unauthorized access and disturbance, you shall, prior to December 31, 2007, install fencing and appropriate signage around the entire perimeter of the preserves. All fencing surrounding mitigation, preservation, avoidance, and buffer areas shall allow unrestricted visibility of these areas to discourage vandalism or disposing of trash or other debris in these areas. Examples of this type of fencing include chain link and wrought iron.
13. To protect the integrity of the preserves and avoid unanticipated future impacts, no roads, utility lines, trails, benches, equipment or fuel storage, grading, firebreaks, mowing, grazing, planting, discing, pesticide use, burning, or other structures or activities shall be constructed or occur within the on-site or off-site mitigation, preservation, and avoidance areas without specific, advance written approval from the Corps of Engineers.
14. Prior to initiating any activity authorized by this permit, you shall, to insure long-term viability of



mitigation, preservation, and avoidance areas:

- a. Establish fully-funded endowments to provide for maintenance and monitoring of the on-site and off-site mitigation, preservation, and avoidance areas.
  - b. Designate appropriate and Corps-approved conservation-oriented third party entities to function as preserve managers and to hold the required conservation easements.
  - c. Record permanent conservation easements and deed restrictions maintaining all mitigation, preservation, and avoidance areas as wetland preserve and wildlife habitat in perpetuity. Copies of the proposed deed restriction and conservation easement language shall be provided to the Corps of Engineers for approval prior to recordation.
  - d. Provide copies of the recorded documents to the Corps of Engineers prior to the start of construction of any of the activities authorized by this permit. Construction may not commence until the Corps reviews the recorded documents and provides written approval.
15. To assure success of the preserved and created waters of the United States, you shall monitor compensatory mitigation, avoidance, and preservation areas for five years or until the success criteria described in the approved mitigation plan(s) are met, whichever is greater. This period shall commence upon completion of the construction of the mitigation wetlands. Additionally, continued success of the mitigation wetlands, without human intervention, must be demonstrated for three consecutive years, once the success criteria have been met. The mitigation plan will not be deemed successful until this criterion has been met.
16. You shall submit monitoring reports to this office for each year of the five-year monitoring period, and for each additional year, if remediation is required, by December 1st of each year. You shall submit an additional monitoring report at the end of the three-year period demonstrating continued success of the mitigation program without human intervention.
17. You must allow representatives from the Corps of Engineers to inspect the authorized activity and any mitigation, preservation, or avoidance areas at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.
18. You shall have a biologist, who is familiar with vernal pools, monitor all construction activities within 250 feet of the preserve boundary. The monitor shall ensure no unauthorized activities occur within the preserve boundary during project implementation.
19. You shall design and construct all crossings of waters of the United States to retain a natural substrate, and to accommodate all reasonably foreseeable wildlife passage and expected high flows.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
- ( ) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
  - (X) Section 404 of the Clean Water Act (33 U.S.C. 1344).
  - ( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.
  - a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
  - b. This permit does not grant any property rights or exclusive privileges.
  - c. This permit does not authorize any injury to the property or rights of others.
  - d. This permit does not authorize interference with any existing or proposed Federal projects.
3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:
  - a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
  - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
  - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
  - d. Design or construction deficiencies associated with the permitted work.
  - e. Damage claims associated with any future modification, suspension, or revocation of this permit.
4. Reliance on Applicant's Data. The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant.

Circumstances that could require a reevaluation include, but are not limited to, the following:

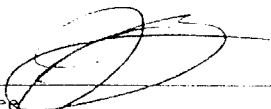
- a. You fail to comply with the terms and conditions of this permit.
- b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170)

accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

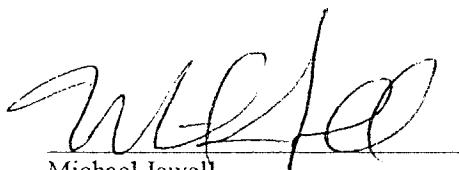
  
Permittee

6-12-2007

Date

James Galovan, Authorized Agent

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.



Michael Jewell  
Chief, Regulatory Branch  
(For the District Engineer)

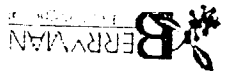
15 Jun 07

Date

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

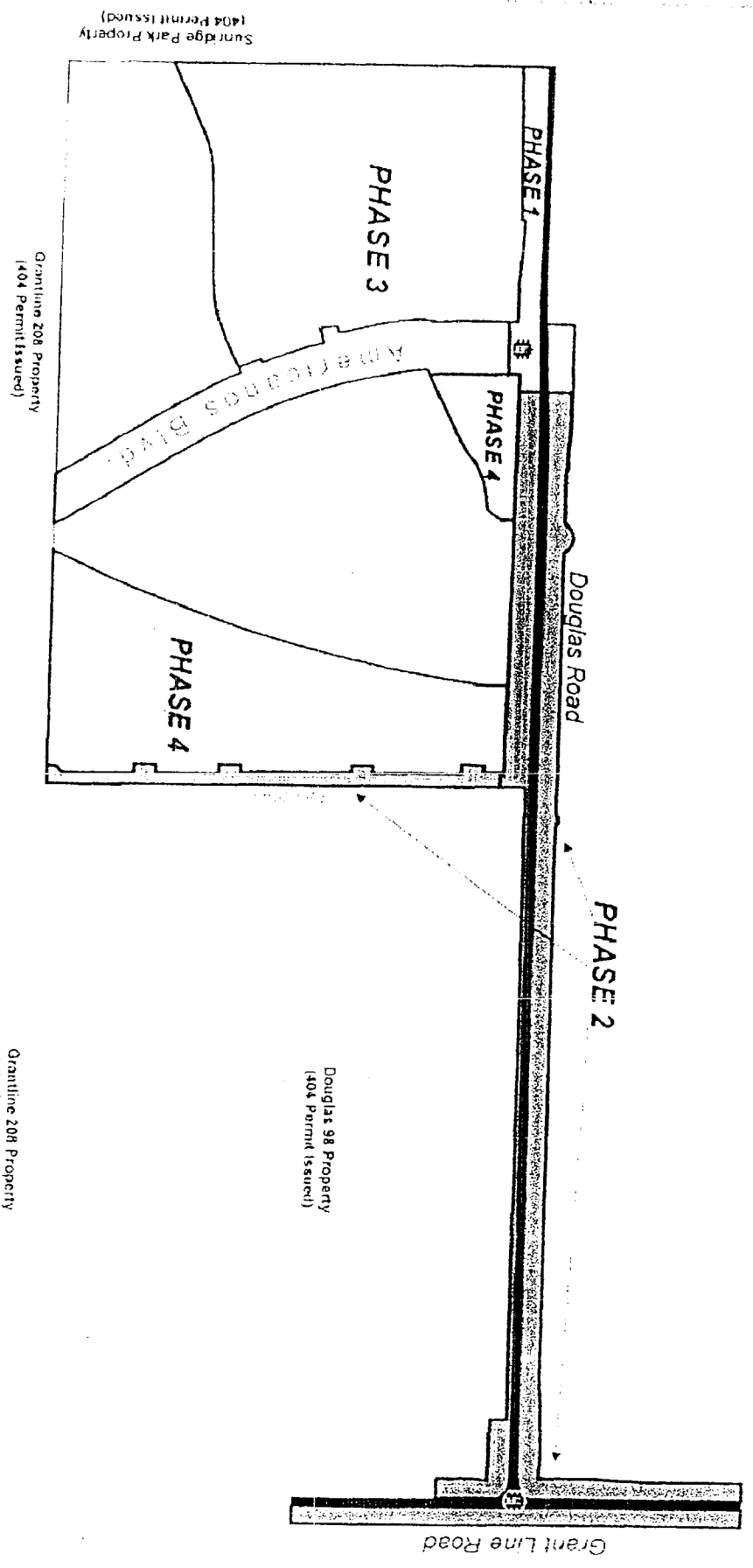
Transferee

Date



**DOUGLAS PHASES**  
**Douglas 103**

Test SRV5  
Date 07-1-11  
**Figure 1**



Grant Line Road

Douglas 98  
404 Permit Issued

Grantline 208  
404 Permit Issued

West of Americanos, all  
Douglas Rd impacts are  
limited to the South side  
of Douglas road

Douglas Road

Douglas 103  
Permit Pending

Sunridge Park  
404 Permit Issued

Wetlands	Impact Acreage		Other Features
	Indirect	Direct	
Depressional Wetlands	0.00	0.04	Project Boundary
Vernal Pools	0.00	0.00	Offsite Indirect Impact Area
Depressional Seasonal Wetland	0.00	0.01	Existing Road
Riverine Wetlands	0.00	0.00	
Riverine Seasonal Wetland	0.00	0.00	
Ephemeral Drainage	0.00	0.00	
Other Waters Of The U.S.	0.00	0.00	
Intermittent Drainage	0.00	0.00	
<b>Total</b>	<b>0.00</b>	<b>0.05</b>	



0 350 700  
Feet



Phase 1 Wetland Impacts

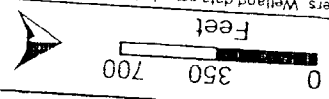
Douglas 103

Figure 2

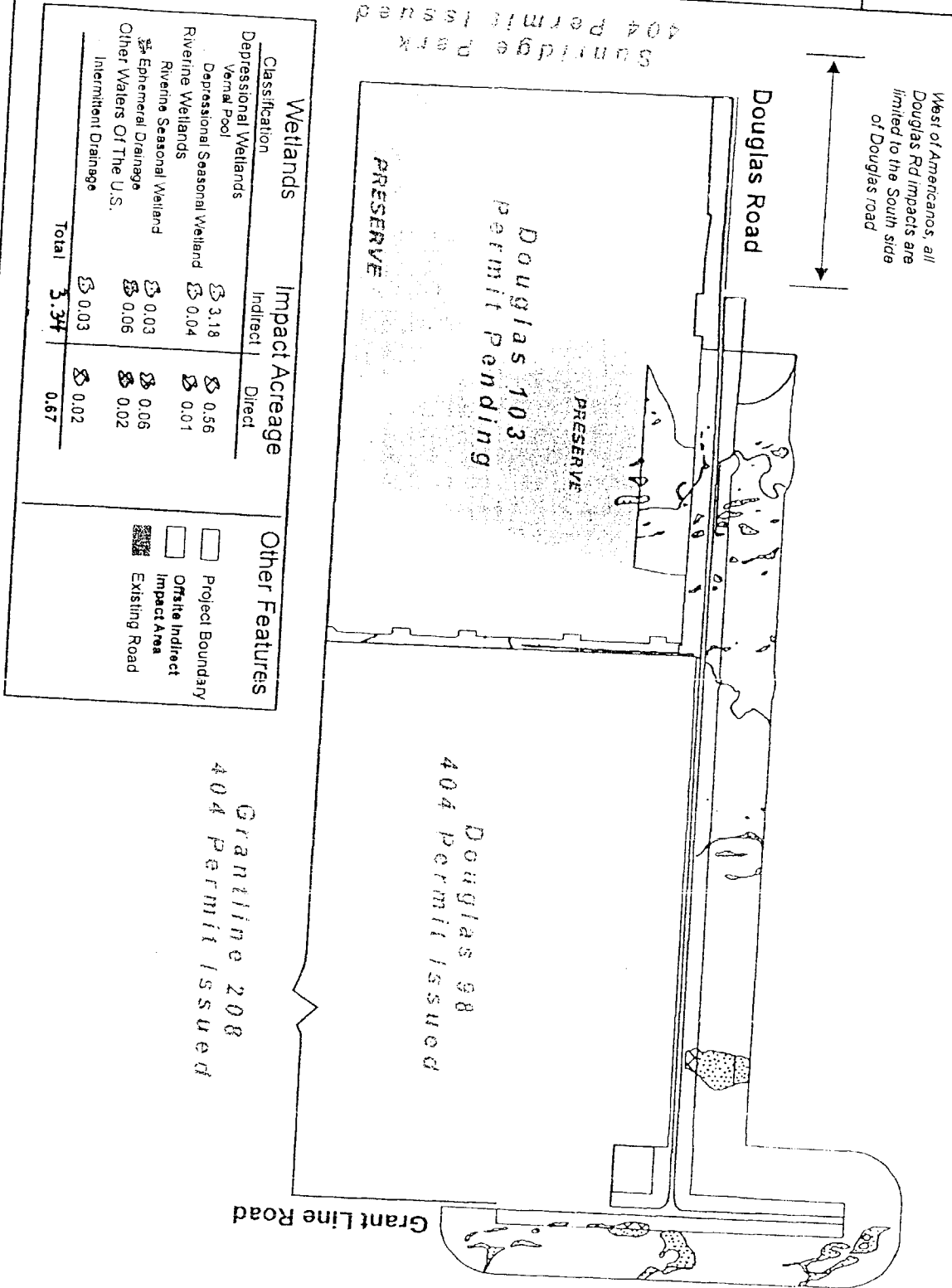
Date: 03/20/07  
Tech: ARMB Rev. 1

Source: Digital base data provided by Wood Rodgers. Wetland data provided by Foothill Associates.

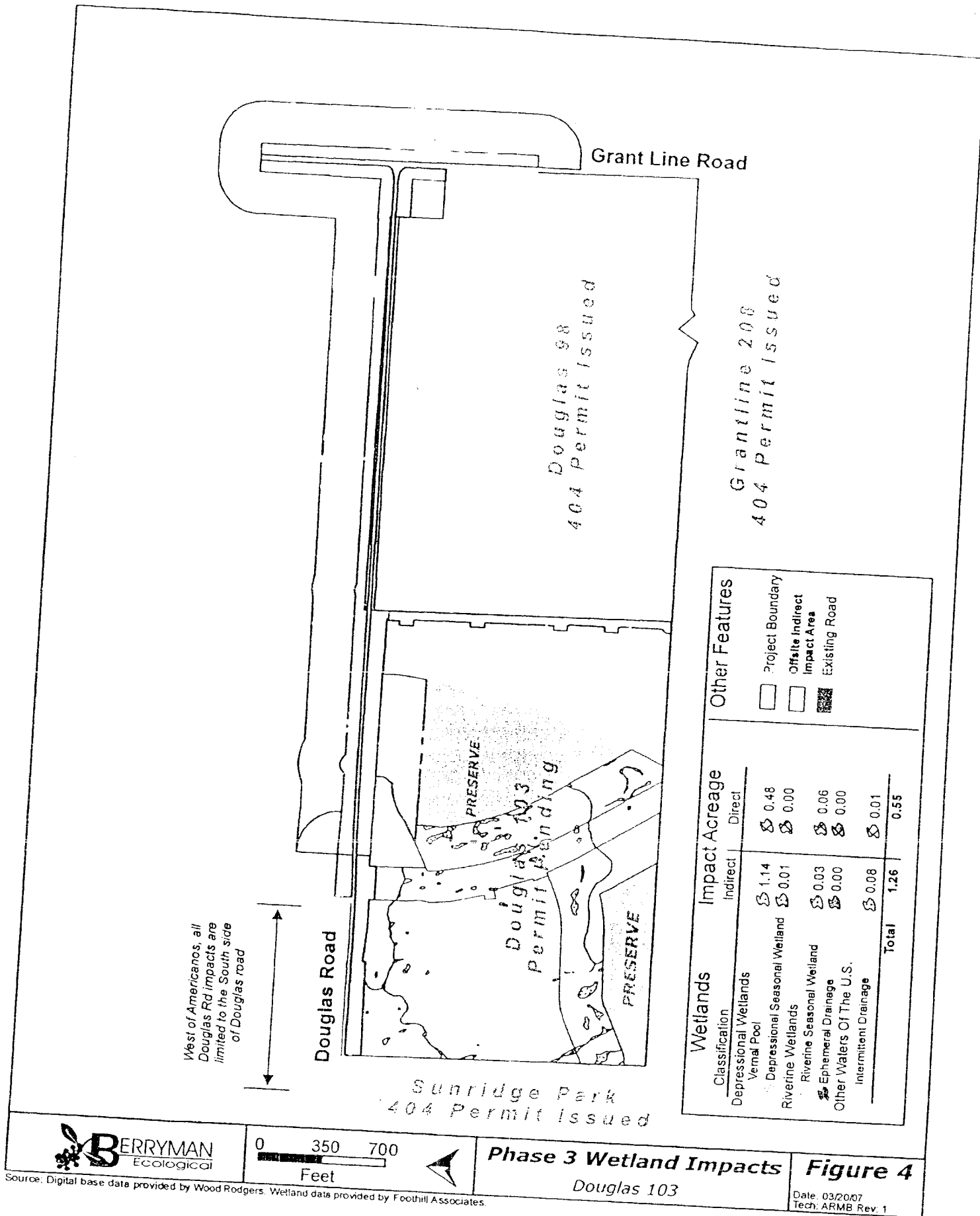
Source: Digital base data provided by Wood Rodgers Wetland data provided by Foothill Associates.



**Phase 2 Wetland Impacts**  
Douglas 103  
**Figure 3**

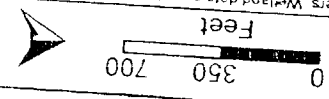






Source: Digital base data provided by Wood Rodgers. Wetland data provided by Foothill Associates.

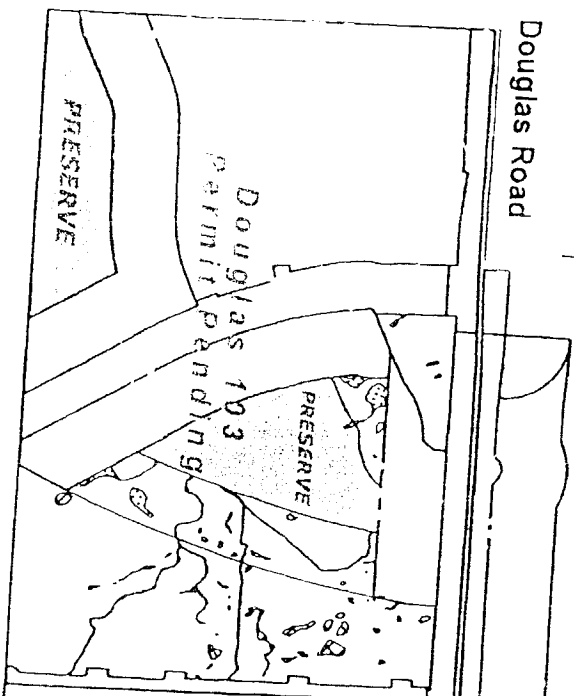
**Figure 5**  
**Phase 4 Wetland Impacts**  
**Douglas 103**



West of Americans, all Douglas Rd impacts are limited to the South side of Douglas road

Douglas Road

Sunridge Park  
404 Permit Issued



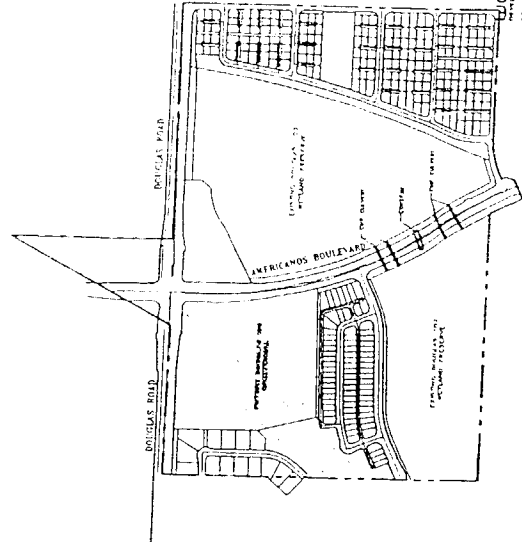
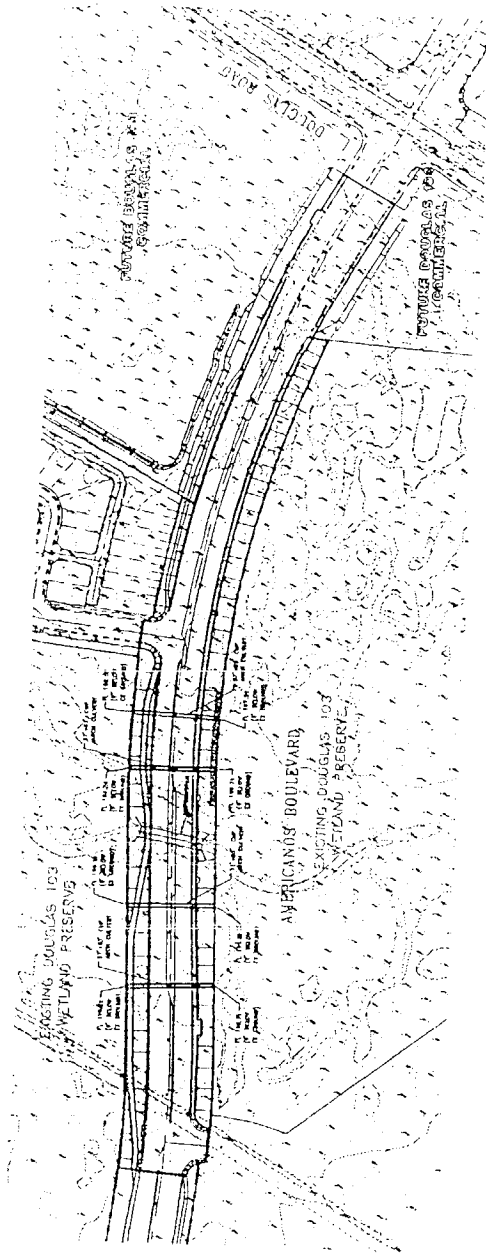
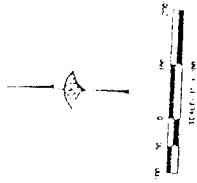
Grant Line Road

Douglas 208  
404 Permit Issued

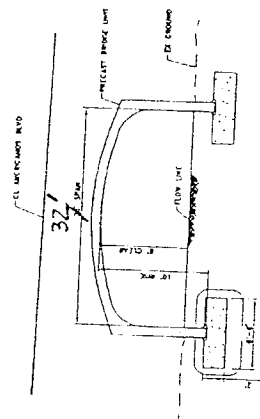
Douglas 98  
404 Permit Issued

Wetlands		Impact Acreage		Other Features	
Classification		Indirect	Direct		
Depressional Wetlands					
Vernal Pool		0.55	0.58		Project Boundary
Depressional Seasonal Wetland		0.00	0.01		Offsite Indirect Impact Area
Riverine Wetlands					Existing Road
Riverine Seasonal Wetland		0.03	0.08		
Epithermal Drainage		0.02	0.04		
Other Waters Of The U.S.					
Intermittent Drainage		0.07	0.00		
Total		0.67	0.71		

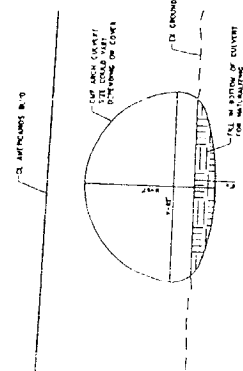
# EXHIBIT FOR **DOUGLAS 103 WETLAND PRESERVE** ROAD CULVERT CROSSING EXHIBIT CITY OF RANCHO CORDOVA, CALIFORNIA APRIL 2007



—CULVERT LOCATION MAP



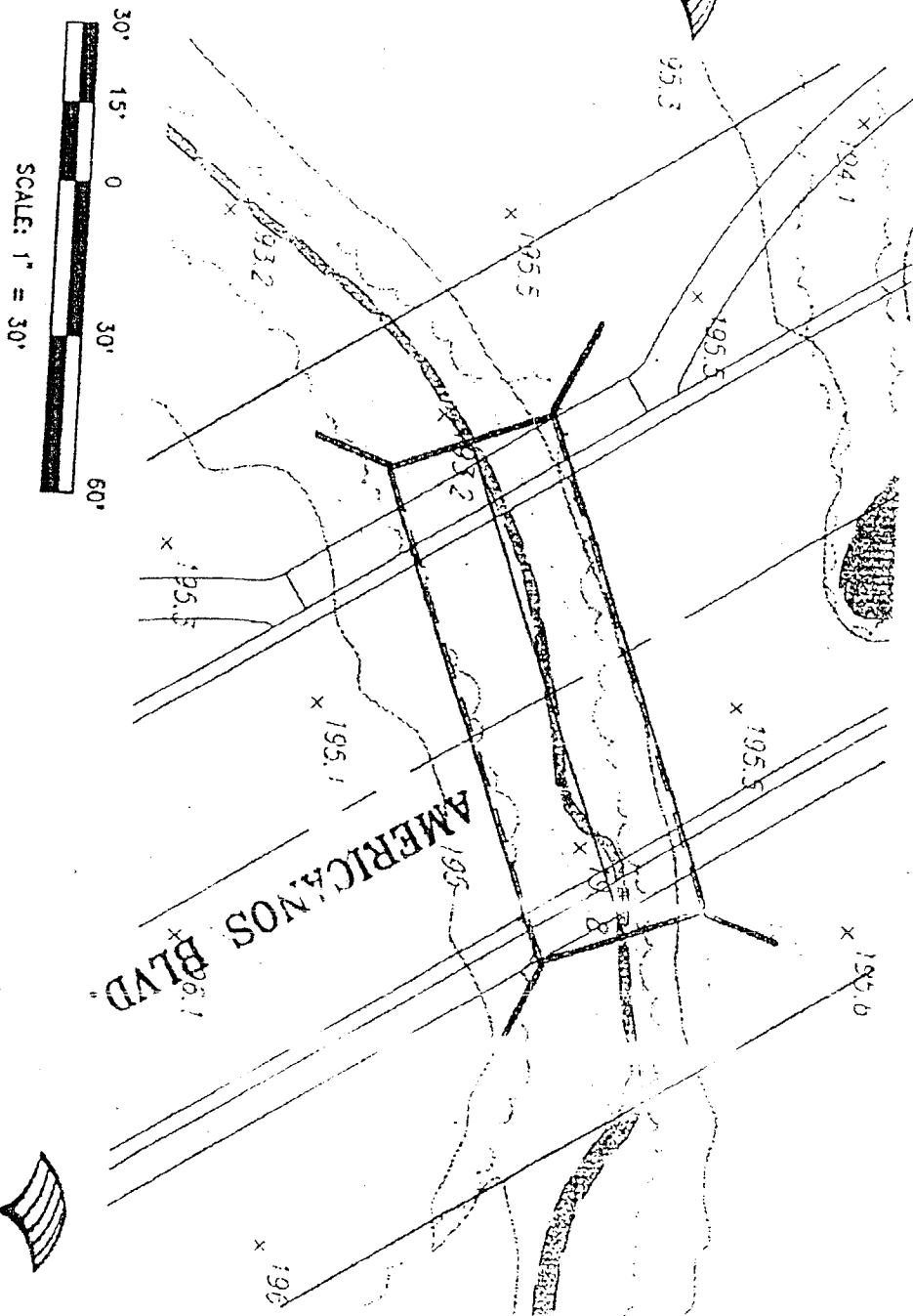
—ELEVATION SECTION



—PLAN VIEW SECTION



32' CON-SPAN ALONG AMERICANOS BLVD  
**DOUGLAS 103**  
 CITY OF RANCHO CORDOVA  
 MARCH, 2008  
 CALIFORNIA



**LEONARD ROODERS**  
 CIVIL ENGINEER  
 331 G ST. Bldg. 100-B  
 San Jose, CA 95131  
 Tel 916.341.7760  
 Fax 916.341.7767

X:\work\1231-0000\AS103\Douglas103-Americanos Blvd\Civil\Exhibits\Douglas103-base with con-span.dwg 3/29/08 X:\ipm\lgooder

Ness, William W SPK

From: Ellen Berryman [ellen@berrymanecological.com]

Sent: Wednesday, May 02, 2007 1:14 PM

To: Ness, William W SPK

Subject: FW: Douglas 103

Hello Will,

As a follow-up to our phone conversation earlier, the following is an impact and mitigation table to replace the table in the March 26, 2007 letter. As you pointed out, the agreement between the Corps and Jim Galovan of Woodside Home was for the applicant to provide *1:1 preservation for indirect impacts*, except for indirect impacts resulting from improvements to existing roads. The following table reflects this modification.

Phase	Type of Impact	Impact Acreage	Restoration acres	Preservation acres
Phase 1	Direct	0.05	(1:1) 0.05	(2:1) 0.10
	Indirect	0	0	0
	Total Phase 1 mitigation:		0.05	0.10
Phase 2	Direct	0.67	(1:1) 0.67	(2:1) 1.34
	Indirect	3.34	(1:1) 3.34	(0:1) 0
	Total Phase 2 mitigation:		4.01	1.34
Phase 3	Direct	0.55	(1:1) 0.55	(2:1) 1.10
	Indirect	1.26	(1:1) 1.26	(1:1) 1.26
	Total Phase 3 mitigation:		1.81	2.36
Phase 4	Direct	0.71	(1:1) 0.71	(2:1) 1.42
	Indirect	0.67	(1:1) 0.67	(1:1) 0.67
	Total Phase 4 mitigation:		1.38	1.42
TOTAL	Direct	1.98	1.98	3.96
	Indirect	5.27	5.27	1.93
	TOTAL mitigation		7.25	5.89

Thanks, Ellen

5/2/2007

CNS03091



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825-1846



In reply refer to:  
1-1-06-F-0041

MAR 16 2006

1 2006

Mr. Will Ness  
Chief, Sacramento Valley Office  
U.S. Army Corps of Engineers  
1325 J Street  
Sacramento, California 95814-2922

Subject: Formal Endangered Species Consultation on the proposed Douglas Road 103 Project (Corps File Number 199700006), Sacramento County, California

Dear Mr. Ness:

This is in response to your December 20, 2005, letter and supporting documentation requesting Section 7 consultation for the proposed Douglas Road 103 project (proposed project) in Sacramento County, California. Your request was received by the U.S. Fish and Wildlife Service (Service) on December 21, 2005. At issue are potential adverse effects to the federally-listed vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardii*). Surveys conducted on the proposed project site have not detected the federally-listed slender Orcutt grass (*Orcuttia tenuis*), the Sacramento Orcutt grass (*Orcuttia viscida*), and the California tiger salamander (*Ambystoma californiense*). This document represents the Service's biological opinion on the effects of the project on the federally-threatened vernal pool fairy shrimp and endangered vernal pool tadpole shrimp, in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

The findings and requirements in this consultation are based on: (1) the May 31, 2005, *Douglas Road 103 Section 7 Biological Assessment*, prepared by Foothill Associates, Inc.; (2) your December 20, 2005, letter initiating formal consultation; (3) a site visit attended by Ellen Berryman of Berryman Ecological and Rick Kuyper of the Service on January 9, 2006; (4) meetings and correspondences as described in the following consultation history; (5) the January 31, 2006, electronic mail correspondence from Ellen Berryman to Rick Kuyper regarding proposed compensation for additional vernal pool crustacean habitat found within the proposed project site; (6) the March 3, 2006, letter from Ellen Berryman to yourself regarding a revised conservation proposal; and (7) other information available to the Service.

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### Consultation History

Beginning on May 10, 2002, the Planning Department of the County of Sacramento initiated and facilitated a series of meetings to discuss and develop potential wetlands and endangered species permitting strategies for the Sunrise Douglas Community Planning Area (SDCPA). These meetings were attended by landowners, developers, and their representatives, staff from Congressman Doug Ose's office, California Department of Fish and Game, the Service, Department of Army-Corps of Engineers (Corps), and the Environmental Protection Agency (EPA). The entire group met at least twelve times between May 10th and November 22, 2002, in an attempt to develop a strategy to address issues relating to endangered species and wetland protection within the SDCPA. By November of 2002, a resolution was not reached and discussions ceased at that time.

On July 17, 2002, during this initial phase of meetings, the Sacramento County Board of Supervisors approved both the larger SDCPA and the SunRidge Specific Plan. On July 1, 2003, with the incorporation of the City of Rancho Cordova ("City"), the SDCPA came under the City's land use jurisdiction.

A smaller group of project proponents representing the property owners in the SunRidge Specific plan area initiated several meetings with the Fish and Wildlife Service during mid 2003. Discussions focused on avoidance of endangered species habitats in the SDCPA and specific plan areas. Again, no resolution with the Service was reached.

In March 2004, Congressman Doug Ose initiated meetings with the Federal Agencies, local agencies, and the landowners/developer representatives to facilitate resolution of the issues that had emerged during the previous meetings. Congressman Ose urged the Federal Agencies to develop a conceptual strategy that would meet the requirements of the Federal Agencies respective statutes. Congressman Ose urged the regulated parties to work cooperatively with the Federal agencies to explore mechanisms to accommodate the agencies' obligations to comply fully with pertinent federal laws and regulations, which place a premium on the avoidance of on-site wetlands resources to the extent practicable and the need to avoid jeopardizing the continued existence of threatened and endangered species. In short, the Congressman encouraged the parties to work cooperatively with one another to develop a conceptual onsite avoidance and offsite compensation strategy that reached a proper and workable balance between and amongst the following: the mandates of federal law; the need to preserve ecosystem integrity and the habitat of endangered and threatened species; the need to acknowledge the planning policies and objectives of the City of Rancho Cordova; and the need to account for the economic realities facing private sector developers. These meetings continued through September 2004.

In June of 2004 the Federal agencies developed two documents ("A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area"; and the accompanying planning map) that outline our strategies for conserving threatened and endangered species and wetland habitats and to provide a framework for development proposals. In addition, our strategy would provide some conceptual guidelines for permitting.

Service Correspondence

*April 2, 1996*, To: A. Champ-Corps of Engineers, Re: Formal Section 7 Consultation on Issuance of 404 Permit for the Sunrise Douglas Project (AKA Anatolia I, II, III), Service File #1-1-96-F-0062, Corps PN 190110021

*November 22, 2002*, To: M. Finan-Corps of Engineers, Re: Request for additional information on the Sunridge Specific Plan/Sunrise Douglas Community Plan, Service file #1-1-03-I-0411

*July 18, 2002*, To: D. Nottoli-Sacramento County Board of Supervisors, Re: Sunrise Douglas Community Plan and SunRidge Specific Plan-Service File # 1-1-02-CP-2579

*April 26, 2004*, To: Col. Conrad-Corps of Engineers, Re: SunRidge Specific Plan, Service file #/Corps PN 200000336

Consultation History Specific to the Proposed Project

*December 20, 2005*: The Corps initiated section 7 consultation with the Service for the proposed project.

*January 9, 2006*: A site visit was attended by Ellen Berryman of Berryman Ecological and Rick Kuyper of the Service.

*January 31, 2006*: Ellen Berryman sent an electronic mail correspondence to Rick Kuyper regarding proposed compensation for additional vernal pool crustacean habitat found within the proposed project site.

*February 2, 2006*: Ellen Berryman sent an electronic mail correspondence to Ken Sanchez of the Service regarding a revised conservation proposal.

*March 3, 2006*: Ellen Berryman sent a letter to the Corps regarding a revised conservation proposal.

**BIOLOGICAL OPINION**

**The Action Area**

The Action Area includes all areas in which listed species would be directly and indirectly affected by the proposed project. The proposed project is expected to result in direct and indirect effects to vernal pool crustaceans on the proposed project site and within 250 feet of the proposed development. Therefore, the Action Area includes the all land on the proposed project site and within 250 feet of proposed development.

### **Location of the Proposed Action**

The proposed project site is located in southeastern Sacramento County, approximately five miles south of Highway 50, east of Sunrise Boulevard and the Folsom South Canal, and north of Jackson Road (Highway 16) within the City of Rancho Cordova. The proposed project site is located west of Grant Line Road and south of Douglas Road. The proposed Americanos Boulevard bisects the site north to south. The site is located in Section 15, Township 8 North, Range 7 East within the U.S.G.S. "Buffalo Creek, California" 7.5' quadrangle. The 106.4 ± acre proposed project site is within the 6,042 acre Sunrise Douglas Community Plan area located within the Sacramento County General Plan Urban Service Boundary and Policy area. The proposed project is also located within the SunRidge Specific Plan area, which provides a greater detailed land use plan for development of approximately 2,632 acres within the Sunrise Douglas Community Plan area.

The proposed project site is located within the headwaters of the Morrison Creek watershed. The extreme upper portion of this watershed is located in dredge tailings north of the property. From the headwaters, Morrison Creek conveys stormwater southwest across the proposed project site towards Mather Field to the south of the proposed project site. The existing channels and tributaries of Morrison Creek are downcut intermittent drainages.

### **Description of the Proposed Action**

The proposed project involves grading portions of the 106.4 ± acre site in order to construct mixed residential and commercial development with associated infrastructure, and off-site road improvements on an additional 16.8 ± acres. Approximately 43.8 ± acres of the proposed project site would be preserved as on-site open space. The proposed project would result in direct effects to 1.97 acres and 2.91 acres of indirect effects to vernal pool crustacean habitat.

Off-site road improvements would be necessary to accommodate the proposed Douglas Road 103 development. Douglas Road is proposed for widening from the intersection with Grantline Road westward to the proposed Americanos Boulevard, and improvements would be made to Americanos Boulevard from the Douglas Road interchange to approximately 400 feet north. Improvements would be made to the interchange at Douglas Road and Grantline Road. Turn lanes would be constructed along Grantline Road at the interchange with Douglas Road and approximately 800 feet to the north and south. Douglas Road is currently a four-lane rural road, but is proposed as a primary six-lane east-west arterial. The proposed road widening project would include grading road alignments, installation of culverts, placement and compaction of road base, and paving of the road surface. All work would occur in existing Sacramento County rights of way.

### **Proposed Conservation Measures**

#### *Construction Stormwater Pollution Prevention Plan*

The proposed project is designed to minimize off-site stormwater runoff that might otherwise

impact surrounding habitat. Measures would be implemented during project construction to avoid adverse impacts to the open space/wetland preserve and adjacent properties. Standard construction Best Management Practices (BMPs) would be incorporated into construction designs, plans and specifications, and required of contractors during construction. A Storm Water Pollution Prevention Plan (SWPPP) would be prepared for the project, with the following objectives; (1) to identify pollutant sources, including sources of sediment, that may affect the quality of storm water discharges from the construction of the project; (2) to identify BMPs to reduce or eliminate pollutants in storm water discharges and authorized non-storm water discharges, from the site during construction; (3) to outline and provide guidance for BMP monitoring; (4) to identify project discharge points and receiving waters; (5) to address post-construction BMP implementation and monitoring; and (6) to address sediment, siltation, turbidity, and non-visually detectable pollutant monitoring, and outline a sampling and analysis strategy. The construction BMPs for the proposed project would include the following specific measures for avoiding adverse impacts to the open space preserve and adjacent properties.

#### *Hydroseeding*

All constructed slopes adjacent to the preserve would be hydroseeded with a native grassland mix. The hydroseed mix would be applied with a tackifying agent at a rate of at least 2 tons/acre and based on manufacturer's recommendations. The tackifying agent would be a hydraulic matrix which when applied, and upon drying, adheres to the soil to form a 100 percent cover which is biodegradable, promotes vegetation, and prevents soil erosion. The hydroseed mix would not be applied before, during, or immediately after rainfall so that the matrix would have an opportunity to dry 24 hours after installation.

#### *Sediment and Erosion Control*

Certified weed-free straw wattles would be installed at the base of all slopes adjacent to the open space/wetland preserve, along the perimeters of the detention pond, and along the property lines of the Property Site. Prior to installation of the straw wattles, a concave key trench dug by hand approximately two to four inches deep would be contoured along the proposed installation route. Soil excavated for the trenching would be placed on the uphill or flow side of the straw wattles to prevent water from undercutting the straw wattles. Stakes would be driven in on alternating sides of the straw wattles, to hold them in place. The straw wattles would be maintained for a period of time at least until the native grassland vegetation is fully established and the soil is stabilized.

#### *Excavated Material*

During construction all excavated materials would be deposited or stored such that this material cannot be washed into any watercourse, and excess supplies of certified weed-free straw bales and/or sedimentation fencing would be available at the construction site for periodic site-specific use as needed.

*Staging Areas*

Staging areas for construction equipment would be located so that spills of oil, grease or other petroleum by-products would not be discharged into any watercourse or sensitive habitat. No refueling, storage, servicing, or maintenance of equipment would take place within 100 feet of the open space preserve or adjacent off-site habitat. All machinery would be properly maintained and cleaned to prevent spills and leaks. Any spills or leaks from the equipment would be reported and cleaned up in accordance with applicable local, state and/or federal regulations.

*Construction Fencing*

Temporary fencing would be installed prior to construction along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto the open space preserve or adjacent off-site habitat.

*Construction Monitoring*

An environmental monitor would be employed to ensure compliance with construction-related impact avoidance measures. The monitor would report directly to the City of Rancho Cordova Public Works project manager, and based on reports of non-compliance with environmental requirements, would be authorized to stop work orders and to take actions necessary to prevent damage to the open space preserve and off-site habitat. Monitoring reports would be provided to the City of Rancho Cordova Department of Public Works project manager on a daily basis during initial ground breaking, and on a weekly basis (or more frequently as needed when problems arise) thereafter until the Open Space Project construction is finished.

*Wetland Preservation and Restoration*

Direct effects to vernal pool habitat would be offset through habitat preservation of aquatic habitat at a 2:1 to 4:1 ratio and restoration/creation at a 1:1 ratio, and preservation of sufficient surrounding land to support the aquatic habitat as part of a functioning vernal pool complex. The proposed project would result in direct effects to 1.97 acres and 2.91 acres of indirect effects to vernal pool crustacean habitat.

The proposed project would preserve approximately 43.8 acres of vernal pool crustacean habitat and supporting uplands, including 2.77 acres of aquatic vernal pool crustacean habitat (2.52 acres of vernal pools, and 0.25 acre of intermittent drainage). This land would be preserved in perpetuity and managed to sustain the long-term functions and values of the on-site vernal pool complex.

According to the conservation strategy agreed to by the agencies and landowners within the SunRidge Specific Plan area, vernal pool crustacean habitat not indirectly affected by adjacent development would be eligible for preservation credits on a case by case basis. Therefore, of the 2.77 acres preserved, 0.66 acres would be eligible for preservation credits (Table 1). Additional preservation would be achieved through either: (1) purchase of credits at a Service-approved

vernal pool conservation bank within the Sunrise Douglas Community Plan Area at a 2:1 ratio; (2) purchase of credits at a Service-approved vernal pool conservation bank outside of the Sunrise Douglas Community Plan Area at a 4:1 ratio; (3) preservation of a Service-approved site within the Sunrise Douglas Community Plan Area at a 2:1 ratio; or (4) preservation of a Service-approved site outside of the Sunrise Douglas Community Plan Area at a 4:1 ratio. If option 3 or 4 is chosen, the site would be preserved with a conservation easement, and managed in perpetuity consistent with a Service-approved preserve management plan. A long-term, Service-approved, funding mechanism to fund the preserve management would be put in place upon Service approval of the site.

**Table 1: Compensation for effects to vernal pool crustacean habitat.**

Type of Effect	Affected Acreage	On-Site Preservation Credit	Off-site Preservation (acres)	Restoration (1:1) Acres
Direct	1.97	0.66 acres	(2:1 to 4:1) 3.28 to 6.56 <sup>1</sup>	1.97
Indirect	2.91	0	(1:1 to 2:1) 2.91 to 5.82	2.91
<b>Total</b>	<b>4.88</b>	<b>0.66 acres</b>	<b>6.19 to 12.38</b>	<b>4.88</b>

<sup>1</sup>0.66 acre of on-site preservation provides compensation at a 2:1 ratio. On-site preservation compensates for 0.33 acre of adverse effects.  $1.97 \text{ minus } 0.33 = 1.64$ .  $1.64 \times 4 = 6.56$ .

The project applicant proposes to compensate for direct and indirect effects to vernal pool crustacean habitat by restoring vernal pool habitat at a 1:1 ratio (Table 1). Habitat creation/restoration would be achieved through either: (1) purchase of vernal pool restoration/creation credits at a Service-approved bank; or (2) restoration of vernal pool habitat at a Service-approved site within Sacramento County that meets the following criteria:

- (i) The restoration site's soils would be appropriate vernal pool soil types (e.g., San Joaquin, Redding, Corning);
- (ii) The restoration site's soil would have been disturbed at some point in the past, either through land leveling, ditching and draining, berming, or other disturbance that has removed or modified edaphic and hydrologic features necessary to support vernal pool habitat; and
- (iii) The restoration site would have a conservation easement, a preserve management plan, and a long-term funding mechanism in place upon Service approval.

Vernal pool crustacean habitat within 250 feet of the proposed project boundaries to the southwest could be indirectly affected by the proposed project. Habitat to the north is divided from the proposed project site by the existing Douglas Road, a major roadway, and therefore indirect effects are not anticipated. Because lands to the east, west, and south are within the approved Sunrise Douglas Community Plan/SunRidge Specific Plan, habitat in these areas would be directly affected and offset by proposed development there. Therefore, separate section



7 consultation will or has been initiated for projects on these surrounding lands and adverse effects to these areas are expected to be offset through this process.

### STATUS OF THE SPECIES

A final rule was published on September 19, 1994 (Service 1994), to list the vernal pool fairy shrimp as threatened and the vernal pool tadpole shrimp as endangered under the Act. The final rule to designate critical habitat for 15 vernal pool species, including the vernal pool fairy shrimp and the vernal pool tadpole shrimp, was published on August 6, 2003 (Service 2003). A final rule designating critical habitat was published again on August 11, 2005 (Service 2005), in which the Service did not designate any critical habitat for the vernal pool crustaceans in Sacramento County. Further information on the life history and ecology of the vernal pool fairy shrimp may be found in the final listing rule, the final rule to designate critical habitat, Eng *et al.* (1990) and Simovich *et al.* (1992).

### Life History

*Vernal pool tadpole shrimp.* The vernal pool tadpole shrimp has dorsal compound eyes, a large shield-like carapace that covers most of its body, and a pair of long cercopods at the end of its last abdominal segment (Linder 1952, Longhurst 1955, Pennak 1989). It is primarily a benthic animal that swims with its legs down. Its diet consists of organic detritus and living organisms, such as fairy shrimp and other invertebrates (Pennak 1989). The females deposit their eggs on vegetation and other objects on the pool bottom. Tadpole shrimp eggs are known as cysts during the summer, when they lie dormant in the dry pool sediments (Lanway 1974, Ahl 1991). The life history of the vernal pool tadpole shrimp is linked to the environmental characteristics of its vernal pool habitat. After winter rains fill the pools, the populations are re-established from dormant cysts. A portion of the cysts hatch immediately and the rest remain dormant in the soil to hatch during later rainy seasons (Ahl 1991). The vernal pool tadpole shrimp is a relatively long-lived species (Ahl 1991). Adults are often present and can reproduce until the pools dry up in the spring (Ahl 1991, Simovich *et al.* 1992).

*Vernal pool fairy shrimp.* Vernal pool fairy shrimp have delicate elongate bodies, large stalked compound eyes, no carapace, and 11 pairs of swimming legs. They swim or glide gracefully upside-down by means of complex, wavelike beating movements. Fairy shrimp feed on algae, bacteria, protozoa, rotifers, and detritus. The females carry eggs in an oval or elongate ventral brood sac. The eggs are either dropped to the pool bottom or remain in the brood sac until the female dies and sinks. The dormant cysts are capable of withstanding heat, cold, and prolonged desiccation. When the pools refill in the same or subsequent seasons, some, but not all, of the cysts may hatch. The cyst bank in the soil may therefore be comprised of cysts from several years of breeding (Donald 1983). The early stages of the fairy shrimp develop rapidly into adults. The vernal pool fairy shrimp can mature quickly, allowing populations to persist in short-lived shallow pools (Simovich *et al.* 1992).

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## Distribution

*Vernal pool tadpole shrimp.* The vernal pool tadpole shrimp is known from 168 occurrences in the Central Valley, ranging from east of Redding in Shasta County south to Fresno County, and from a single vernal pool complex located in the San Francisco Bay National Wildlife Refuge in Alameda County (CNDDDB 2005). It inhabits vernal pools containing clear to highly turbid water, ranging in size from 54 square feet in the Mather Air Force Base area of Sacramento County, to the 89-acre Olcott Lake at Jepson Prairie in Solano County.

*Vernal pool fairy shrimp.* The vernal pool fairy shrimp is known from 342 occurrences extending from Shasta County through most of the length of the Central Valley to Pinnacles in San Benito County (Eng *et al.* 1990, Fugate 1992, CNDDDB 2005) and Riverside County. Five disjunctive populations exist: one near Soda Lake in San Luis Obispo County; one in the mountain grasslands of northern Santa Barbara County; one on the Santa Rosa Plateau in Riverside County; one near Rancho California in Riverside County; and one on the Agate Desert near Medford, Oregon. The vernal pool fairy shrimp inhabits vernal pools with clear to tea-colored water, most commonly in grass- or mud-bottomed swales, basalt flow depression pools in unplowed grasslands, or even sandstone rock outcrops or alkaline vernal pools.

The genetic characteristics of these species, as well as ecological conditions, such as watershed continuity, indicate that populations of vernal pool crustaceans are defined by pool complexes rather than by individual vernal pools (Fugate 1992). Therefore, the most accurate indication of the distribution and abundance of these species is the number of inhabited vernal pool complexes. The pools and, in some cases, pool complexes supporting these species are usually small. Human-caused and unforeseen natural catastrophic events such as long-term drought, non-native predators, off-road vehicles, pollution, berming, and urban development, threaten their extirpation at some sites.

## Dispersal

The primary historic dispersal method for the vernal pool tadpole shrimp and vernal pool fairy shrimp likely was large scale flooding resulting from winter and spring rains which allowed the animals to colonize different individual vernal pools and other vernal pool complexes. This dispersal is currently non-functional due to the construction of dams, levees, and other flood control measures, and widespread urbanization within significant portions of the range of this species. Waterfowl and shorebirds may now be the primary dispersal agents for vernal pool tadpole shrimp and vernal pool fairy shrimp. The eggs of these crustaceans are either ingested (Krapu 1974, Swanson *et al.* 1974, Driver 1981, Ahl 1991) and/or adhere to the legs and feathers where they are transported to new habitats.

## ENVIRONMENTAL BASELINE

Historically, vernal pools and vernal pool complexes occurred extensively throughout the Sacramento Valley of California. However, conversion of vernal pools and vernal pool complexes has resulted in a 91 percent loss of vernal pool resources in California (State of

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California 2003d). By 1973, between 60 and 85 percent of the area within the Central Valley that once supported vernal pools had been destroyed (Holland 1978). In the ensuing 30 years, threats to this habitat type have continued and resulted in a substantial amount of vernal pool habitat being converted for human uses in spite of Federal regulations implemented to protect wetlands. For example, between 1987 and 1992, 467 acres of wetlands within the Sacramento area were filled pursuant to Nationwide Permit 26 (Service 1992). A majority of those wetlands losses involved vernal pools, the endemic habitat of the vernal pool tadpole shrimp, the vernal pool fairy shrimp, and slender and Sacramento Orcutt grasses. It is estimated that within 20 years human activities will destroy 60 to 70 percent of the remaining vernal pools (Coe 1988). In addition to direct habitat loss, the two shrimp populations have been and continue to be highly fragmented throughout their ranges due to conversion of natural habitat for urban and agricultural uses. Fragmentation results in small isolated shrimp populations. Ecological theory predicts that such populations will be highly susceptible to extirpation due to chance events, inbreeding depression, or additional environmental disturbance (Gilpin and Soulé 1988; Goodman 1987). If an extirpation event occurs in a population that has been fragmented, the opportunities for re-colonization would be greatly reduced due to geographic isolation from other source populations.

Human population growth in Sacramento County has steadily increased. On the average, Sacramento County has experienced an annual population increase of 1.38 percent for the period between 1991 and 1999 (Service 2000). For the period between 1990 and 2000, population growth in Sacramento County increased 17.5 percent (State of California 2002). Annual growth appears to be increasing, as demonstrated by the 2.63 percent and 2.2 percent increases in population growth in 2001 and 2002, respectively (State of California 2003a, 2003b). Increased housing demand and urban development accompany the population growth in Sacramento County. Between 1990 and 2000, housing units in Sacramento County increased by 1.37 percent annually (State of California 2000, 2003c). Population growth and concomitant housing demand and subsequent vernal pool resource development are projected to continue. Population projections for Sacramento County are expected to increase above 2000 levels by 19.7 percent in 2010, by 28 percent in 2015, and by 37.5 percent in 2020 (State of California 2001).

Sacramento County represents important, high quality habitat for the two shrimp populations by providing large, nearly contiguous areas of relatively undisturbed vernal pool habitat. Sacramento County contains the greatest number of occurrences of vernal pool tadpole shrimp within the range of the species, and also is one of the two counties with the greatest number of occurrences of vernal pool fairy shrimp within the range of the species. Sacramento County contains 59 (17 percent) out of the total of 342 reported occurrences of vernal pool fairy shrimp, and 59 (34 percent) out of the total of 173 reported occurrences of vernal pool tadpole shrimp (CNDDDB 2005). Further, Sugnet and Associates (1993) reported that of 3,092 "discrete populations" checked, only 345 locations, or about 11 percent of all locations checked, were found to support the vernal pool tadpole shrimp. Of these 345 locations supporting the vernal pool tadpole shrimp, 219 (63 percent) were in Sacramento County. Further, of the 3,092 locations checked, 178 locations (6 percent) were found to support the vernal pool fairy shrimp. Of this total, 63 locations (35 percent) were within Sacramento County.

The vernal pool tadpole shrimp and vernal pool fairy shrimp are imperiled by a variety of human-

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caused activities. Their habitats have been lost through direct destruction and modification due to filling, grading, disking, leveling, and other activities. In addition, vernal pools have been imperiled by a variety of anthropogenic modifications to upland habitats and watersheds. These activities, primarily urban development, water supply/flood control projects, land conversion for agriculture, off-road vehicle use, certain mosquito abatement measures, and pesticide/herbicide use can lead to disturbance of natural flood regimes, changes in water table depth, alterations of the timing and duration of vernal pool inundation, introduction of non-native plants and animals, and water pollution. These indirect effects can result in adverse effects to vernal pool species.

A number of State, local, private, and unrelated Federal actions have occurred within the project area and adjacent region affecting the environmental baseline of these species. Some of these projects have been subject to prior section 7 consultation. Based on an informal review, the Service issued approximately 157 biological opinions to Federal agencies on proposed projects in Sacramento County that have adversely affected the shrimp species from 1994, when the two species were proposed to be listed, to 2005. This total does not reflect the formal consultations that were withdrawn, those that are suspended, those that have insufficient information to conclude an effects analysis, those that were amended, or ones that the Service issued a conference opinion. No State of California actions have taken place within Sacramento County that have adversely affected the species in the action area. Although these proposed projects in Sacramento County have eliminated vernal pools and vernal pool complexes, the offsetting compensating measures are designed to minimize the effects of take of these species resulting in both negative and positive effects to the species. Thus, the trend for the two vernal pool species within the county is most likely static. The actions listed above have resulted in both direct and indirect impacts to vernal pools within the region, and have contributed to the loss of vernal pool tadpole shrimp and vernal pool fairy shrimp populations. Although a reduction of the two shrimp populations has not been quantified, the acreage of lost habitat continues to grow.

In south Sacramento County, the Urban Services Boundary (USB) is a planning boundary that coincides with the areas north of the Cosumnes River/Deer Creek drainage system. Between 1993 and 2000, an estimated 14,950 acres were converted to urban development within the USB (pers. comm., D. Gifford, 2004), based on an analysis of the California Department of Water Resources mapping data. An independent analysis of urban growth in Sacramento County estimated that an estimated 22,000 acres were converted between 1990 and 2000, averaging 2,200 acres per year (pers. comm., Richard Radmacher, Sacramento County, 2004). As of 1998 (the most recent year for which vernal pool mapping from aerial photographs is available), there remained an estimated 23,533 acres of vernal pool grasslands within the USB, supporting approximately 946 acres of wetted vernal pool acreage (pers. comm., Lora Konde, California Department of Fish and Game, 2003).

Vernal pool complexes, occurring north of the Cosumnes River/Deer Creek drainage and within the USB, contain a high density of occupied pool of both vernal pool tadpole shrimp and vernal pool fairy shrimp. There are 31 known occurrences of vernal pool tadpole shrimp inside the USB, compared to 17 occurrences outside the USB (CNDDDB 2005). There are 25 known occurrences of vernal pool fairy shrimp inside the USB, compared to 18 occurrences outside the USB (CNDDDB 2005). The data from the CNDDDB do not reflect additional reported records in

the Sunrise/Douglas area, where 137 occurrences of vernal pool tadpole shrimp and 46 occurrences of vernal pool fairy shrimp, and two occurrences of slender Orcutt grass and four occurrences of Sacramento Orcutt grass are reported (pers. comm., Arnold Roessler, Service, 2004). An additional occurrence of slender Orcutt grass has been reported, but not recorded in the CNDDDB (pers. comm. Pete Balfour, ECORP Consulting, 2004).

The vernal pools on the proposed project site are classified as the old-terrace type and are located on soils associated with Laguna geologic formation. Old-terrace is a rapidly disappearing habitat type in Sacramento County that consists of ancient river channel deposits that were laid down from 600,000 to more than one million years ago by the American River. By comparison, young-terrace formation dates from 100,000 to 200,000 years ago. Old-terrace formation generally has a higher density of vernal pools, deeper pools, and a greater number of special status plants and crustaceans than young-terrace formations. Some special status species found in old-terrace pools may have evolved from species inhabiting shores of ancient lakes in the Central Valley. Old-terrace pools may have served as refugia for these species as the lakes disappeared.

Sacramento County contains an estimated 764 wetted acres of vernal pools on low terrace, 1,390 wetted acres of vernal pools on high terrace, and 189 wetted acres of vernal pools on volcanic mudflow vernal pools.

There are two predominant soil types found within south Sacramento County, the Valley Springs type and the Laguna type. The Valley Springs soil type typifies Gill Ranch, located in Sacramento County and approximately 12 miles southeast of the project site. Vernal pools found within the Valley Springs soil type are the young-terrace formation. Young-terrace formations, because they have a higher slope gradient, tend to have fewer vernal pools and are typically smaller and more shallow. These vernal pools also are inundated for shorter durations. These factors typically result in lower species diversity. Generally, the larger the vernal pool on this soil type, the higher its biotic diversity. Vernal pool fairy shrimp, vernal pool tadpole shrimp, and Sacramento Orcutt grass are less likely to occur in young-terrace formation vernal pools found on Valley Springs soils. (Holland, pers. comm., 2004).

The Laguna geologic formation and its associated soils entirely characterize the Sunrise/Douglas Community Plan Area. Vernal pools found within this soil type are old-terrace types. Old-terrace types, because they have a lower slope gradient, tend to have pools that are larger, deeper, and clearer. These pools are inundated for longer periods, but dry and refill less often than the Valley Springs soil type. Generally, the smaller the vernal pool on this soil type, the higher its invertebrate diversity. Although vernal pool fairy shrimp occur in pools on both soil types, they occur more frequently in pools on Laguna soils. Vernal pool tadpole shrimp are found almost exclusively in old-terrace formation vernal pools found on Laguna soils.

Several areas containing old-terrace formation have been protected for their high quality vernal pool habitat and high concentration of special status species populations by the Sacramento Valley Conservancy (SVC). This potential preserve area, the SVC's Vernal Pool Prairie Preserve, would cover 2,000 to 3,000 acres and supports a variety of special status plants and animals on relatively undisturbed grasslands containing young and old terrace formations and

northern hardpan vernal pools. Within the proposed Prairie Preserve, areas already protected include the Arroyo Seco Mitigation Bank, the Excelsior 184 parcel, and the Sacramento County-owned, Multi Cultural Park; outside of the proposed Prairie Preserve, the Sunrise Douglas Preservation Bank, and a portion of Howard Ranch are protected.

There are 366 records of vernal pool fairy shrimp and 209 records of vernal pool tadpole shrimp recorded in the CNDDDB for the entire state of California (CNDDDB 2005). Of these records, 59 vernal pool fairy shrimp records and 59 vernal pool tadpole shrimp records are from Sacramento County (CNDDDB 2005). Vernal pool fairy shrimp and vernal pool tadpole shrimp have both been observed in wetlands throughout the Sunrise Douglas area.

Both vernal pool fairy shrimp and vernal pool tadpole shrimp have been incidentally observed on the proposed project site during site visits by Foothill Associates. In addition, these species are known from other parcels within the Sunrise Douglas Community Plan area and vicinity. The nearest reported occurrence in the CNDDDB for the vernal pool tadpole shrimp is approximately 1 mile north of the proposed project site and the nearest reported occurrence in the CNDDDB for the vernal pool fairy shrimp is approximately one mile south of the proposed project (CNDDDB 2005).

## EFFECTS OF THE PROPOSED ACTION

### Direct Effects

Direct effects are the effects of the action that would directly affect the species, for example, those actions that would immediately remove or destroy habitat or displace animals and plants. The construction of the proposed project would result in the direct loss of 1.97 acres of vernal pool crustacean habitat and the death of an unknown number of vernal pool fairy shrimp and vernal pool tadpole shrimp and/or their cysts. The proposed project would also result in the loss of approximately 73.5 acres of surrounding upland habitat which provides a supporting matrix for the aquatic habitat.

The proposed project would preserve 2.77 acres of vernal pool habitat onsite, as well as preserving 6.19 to 12.38 acres of vernal pool habitat at an offsite location (depending on whether preservation occurred within or outside of the Sunrise Douglas Community Plan Area). The Service's *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (2006) recommends a preservation rate of at least 85 percent, and up to 95 percent, for vernal pool crustacean habitat in southern Sacramento County. Therefore, the compensation measures to offset direct effects resulting from the proposed project do not achieve the recovery goal for listed vernal pool species in the region. To do so, the project proponent would need to preserve, at a minimum, 11.82 acres to achieve an 85 percent rate of preservation of this diminishing habitat (1.97 at a 6:1 ratio achieves 85 percent preservation). To achieve a 95 percent rate of vernal pool habitat preservation, the project proponent would need to preserve at least 37.43 acres of vernal pool habitat in the region (1.97 at a 19:1 ratio achieves 95 percent preservation). Regardless, the proposed project does not approach these levels of habitat preservation.



**Indirect Effects**

Vernal pool habitat indirectly affected includes all aquatic habitat supported by upland and swale areas that will be destroyed by construction activities, and all habitat otherwise damaged by loss of watershed, human intrusion, introduced species, and pollution that will be caused by the project. The proposed project would result in 2.91 acres of indirect effects which includes all habitat supported by future destroyed upland areas and swales, and all habitat otherwise damaged by loss of watershed, human intrusion, introduced species, and pollution that will be caused by the project. A description of potential indirect effects follows.

*Erosion* - The ground disturbing activities in the watershed of vernal pools associated with the proposed project action area are expected to result in siltation when pools fill during the wet season following construction. Siltation in pools supporting listed crustaceans may result in decreased cyst viability, decreased hatching success, and decreased survivorship among early life history stages, thereby reducing the number of mature adults in future wet seasons. The proposed project construction activities could result in increased sedimentation transport into vernal pool crustacean habitats during periods of heavy rains.

*Changes in hydrology* - The biota of vernal pools and swales can change when the hydrologic regime is altered (Bauder 1986, 1987). Survival of aquatic organisms like the vernal pool fairy shrimp and vernal pool tadpole shrimp are directly linked to the water regime of their habitat. Therefore, construction near vernal pool areas will, at times, result in the decline of local sub-populations of vernal pool organisms, including fairy shrimp and tadpole shrimp.

*Introduction of non-natives* - There is an increased risk of introducing weedy, non-native plants into the vernal pools both during and after project construction due to the soil disturbance from clearing and grubbing operations, and general vegetation disturbance associated with the use of heavy equipment.

*Chemical contamination* - The runoff from chemical contamination can kill listed species by poisoning. Oils and other hazardous materials associated with construction equipment could be conveyed into the vernal pool crustacean habitats by overland runoff during the rainy season, thereby adversely affecting water quality. Many of these chemical compounds are thought to have adverse affects on the listed vernal pool crustaceans and/or their cysts. Individuals may be killed directly or suffer reduced fitness through physiological stress or a reduction in their food base due to the presence of these chemicals.

In addition to the adverse effects detailed above, the proposed project will contribute to a local and range-wide trend of habitat loss and degradation, the principal reasons that the vernal pool fairy shrimp and vernal pool tadpole shrimp have declined. The proposed project will contribute to the fragmentation and reduction of the acreage of the remaining listed vernal pool crustacean habitat located in Sacramento County and throughout the range of these two listed vernal pool crustaceans.

Again, the proposed project does not achieve the recovery goal for listed vernal pool species in the region. To compensate for indirect effects, the project proponent would need to preserve, at a minimum, 17.46 acres to achieve an 85 percent rate of preservation of this diminishing habitat (2.91 at a 6:1 ratio achieves 85 percent preservation). To achieve a 95 percent rate of vernal pool habitat preservation, the project proponent would need to preserve at least 55.29 acres of vernal pool habitat in the region (2.91 at a 19:1 ratio achieves 95 percent preservation). Regardless, the proposed project does not approach these levels of habitat preservation.

#### Interrelated and Interdependent Actions

Additional effects from interrelated and interdependent actions are expected from the proposed project. Approximately 115 acres of vernal pools are present in the entire SunRidge Specific Plan area (Foothill Associates 2004). The Corps issued a permit for the largest project in this area, the approximately 1,225-acre Sares-Regis property that included approximately 71 acres of vernal pools (Corps file number 190110021). This Corps permit authorized fill of approximately 27 acres of vernal pool crustacean habitat, and required the preservation of 44 acres of vernal pools within a 482-acre on-site preserve. With the exception of this preserve and a designated open space area along Laguna Creek near Grant Line Road, the SunRidge Specific Plan land use designations and zoning provide for urban land use throughout the plan's areas. Therefore, the majority of the remaining 44 acres of vernal pools outside the Sares-Regis property are expected to be filled for future urban development (Foothill Associates 2004).

Development of the SDCPA will require the extension of certain utilities and the enlargement of certain roads in areas outside of the SDCPA boundary. Utility improvements include the development of a well field, water supply lines, and water treatment facilities and sewer lines. Well locations have all been sited to avoid affects to aquatic habitats. The water treatment facility will be located on land permitted for take in the Anatolia project (Service file number 1-1-96-F-0062) within the SDCPA boundary. All offsite road improvements and the sewer and water lines will be constructed in existing rights-of-way with affects to aquatic resources totaling less than one-half of an acre (Foothill Associates 2004).

All infrastructure improvements are required to serve the already permitted Anatolia project. Affects resulting from offsite infrastructure development and road widening to Sunrise Boulevard from White Rock Road, to Pyramid Road, to Douglas Road from Sunrise Boulevard, and to Americanos Road, are covered under separate Nationwide14 Permits (Corps file number 200300697), which are currently in review by the Service. Two additional road improvement projects will be permitted under Phase I and will provide service to Anatolia and the remaining projects within the SDCPA. Jaeger Road, an existing two-lane, partially paved road, will be paved from Douglas Road south to Pyramid Road. Pyramid Road, an existing dirt road, will be improved from Sunrise Boulevard to Jaeger Road. The two road improvements will affect less than one-tenth an acre (Foothill Associates 2004).

Continuing development in southern Sacramento County requires the installation of supporting infrastructure, such as sewer interceptors. The proposed Laguna Creek Interceptor would carry waste from developments that are scheduled for the Laguna area. The exact route of the

proposed Laguna Creek Interceptor is not known at this time; however the proposed project could have both direct and indirect effects on listed vernal pool crustaceans, and other listed species. The proposed Laguna Creek Interceptor, approximately 87,000 feet in length, would extend eastward from the Sacramento Regional Water Treatment Plant (SRWTP) to east of Sunrise Boulevard (SRCSD 2000). The proposed Laguna Creek Interceptor would service an area which extends northwest from the intersection of Bradshaw and Calvin Roads nearly to the intersection of White Rock and Scott Roads, including the entire proposed Sunrise/Douglas development. This proposed interceptor would also provide tie-ins for the future Deer Creek Interceptor, approximately 90,000 feet in length, which is proposed for construction between 2021 and 2032, and the Aerojet Interceptor, approximately 55,000 feet in length, which is proposed for construction between 2014 through 2033 (SRCSD 2000). These two interceptors would eventually service areas east of Grant Line Road and northeast of Sunrise Road, respectively. Construction for the proposed Laguna Creek Interceptor is proposed for 2010 through 2024.

These future projects may adversely affect several federally-listed species, including the vernal pool crustaceans, the giant garter snake (*Thamnophis gigas*), the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), the California tiger salamander, the California red-legged frog (*Rana aurora draytonii*), the delta smelt (*Hypomesus transpacificus*) and its designated critical habitat, and the slender and Sacramento Orcutt grasses.

Currently, a South Sacramento Habitat Conservation Plan (SSHCP) is being developed. So therefore, while development activities in south Sacramento County may negatively affect vernal pool crustaceans and other listed species and their habitats, if completed, the SSHCP may eventually ensure that development activities would avoid, minimize, and compensate for take of listed species to the greatest extent possible. The SSHCP would address the indirect affects of facilitated planned development that results from the interrelated and interdependent actions that result from the proposed project. At minimum, the SSHCP will address the Federal and State listed species known at this time that may be affected by actions that are reasonably foreseeable as a result of the proposed action. Additional HCP-covered species may be added as the HCP is being developed. The SSHCP will be coordinated with CDFG and will include any appropriate State listed species. The SSHCP will address actions that are within the land use authority of Sacramento County and are reasonably foreseeable as a result of the proposed action, including land use approvals that are related to entitlements. Additional activities may be added as the SSHCP is developed. The SSHCP will cover a cumulative effects boundary area that is reasonably foreseeable as a result of the proposed project and the future projects.

### **Cumulative Effects**

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

A number of on-going and proposed projects could contribute to adverse affects to vernal pool crustaceans within Sacramento County, particularly in the vicinity of the proposed project. In most cases, however, these actions would be subject to Federal review and would, therefore, not be considered cumulative to the proposed project. For instance, several large highway and light rail construction, road improvement, water transfer, and utility and interceptor installation projects are currently planned or underway in south Sacramento County. These projects will contribute to the loss and degradation of habitats of listed species across their range, particularly in south Sacramento County. These activities may alter vernal pool crustacean habitats and can potentially harass, harm, injure, or kill these species. Because these activities have a Federal nexus, the Service will analyze these projects to determine if they will result in the jeopardy of federally-listed species and/or adverse modification and destruction of critical habitat for these species. An undetermined number of future projects that alter the habitat of vernal pool crustaceans, however, could go forward without the need for a Corps 404 permit. Activities that would potentially affect listed vernal pool crustaceans include development associated with urban, water, flood control, highway/roadway and utility projects, application of herbicides/pesticides, conversion to agricultural use, and indirect effects of adjacent development such as urban run-off altering the hydrologic regime.

## Conclusion

After reviewing the current status of the vernal pool tadpole shrimp and vernal pool fairy shrimp, the environmental baseline for the area covered by this biological opinion, the effects of the proposed project, and the cumulative effects, it is the Service's biological opinion that the Douglas Road 103 project, as proposed, is not likely to jeopardize the continued existence of the vernal pool tadpole shrimp and vernal pool fairy shrimp. The proposed project is not located within designated critical habitat for the vernal pool fairy shrimp and vernal pool tadpole shrimp, and therefore, no destruction or adverse modification of critical habitat is anticipated.

## INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

#### **Amount or Extent of Take**

The Service anticipates incidental take of the vernal pool fairy shrimp and vernal pool tadpole shrimp will be difficult to detect or quantify. The cryptic nature of these species and their relatively small body size make the finding of a dead specimen unlikely. The species occur in habitats that make them difficult to detect. Due to the difficulty in quantifying the number of individuals that will be taken as a result of the proposed action, the Service is quantifying take incidental to the project as the number of acres of vernal pools/ponded depressions (vernal pool crustacean habitat) that will become unsuitable for vernal pool crustaceans due to direct or indirect effects as a result of the action. Therefore, the Service estimates that all vernal pool fairy shrimp and vernal pool tadpole shrimp inhabiting 4.88 acres of vernal pool habitat will become harassed, harmed, injured, or killed, as a result of the proposed action.

#### **Effect of the Take**

The Service has determined that this level of anticipated take is not likely to result in jeopardy to the vernal pool fairy shrimp or the vernal pool tadpole shrimp. This action will not result in destruction or adverse modification of critical habitat.

Upon implementation of the following reasonable and prudent measures, incidental take associated with the proposed project on the vernal pool fairy shrimp and vernal pool tadpole shrimp in the form of harm, harassment, and mortality in the form of habitat degradation will become exempt from the prohibitions described under section 9 of the Act for direct and indirect effects.

#### **Reasonable and Prudent Measures**

The Service has determined that the following reasonable and prudent measure is necessary and appropriate to minimize the effects of the proposed project on the vernal pool tadpole shrimp and vernal pool fairy shrimp.

1. Minimize the direct and indirect effects to federally-listed vernal pool crustaceans resulting from habitat modification and habitat loss in the Sunrise Douglas Community Plan Area.

### Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the Corps must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

1. The Corps shall fully implement the principles and standards outlined in the document titled, "*June 2004 Conceptual Strategy for Avoiding Minimizing and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area*", for this proposed project.
2. The Corps shall fully implement the Agencies' March 2004 map titled, "Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection" for this project.
3. The Corps shall assure all conservation measures as proposed by the project proponent in the May 31, 2005, *Douglas Road 103 Section 7 Biological Assessment*, and identified by the Service in the project description of this biological opinion (pages 4-7) are fully implemented.
4. The Corps shall assure the following "Best Management Practices" are implemented during project construction.
5. The project proponent shall include a copy of this biological opinion within its solicitations for construction of the proposed project, making the prime contractor responsible for implementing all requirements and obligations included within the biological opinion, and to educate and inform all other contractors involved in the project as to the requirements of the biological opinion. The project proponents shall make the terms and conditions in this biological opinion a required item in all contracts for the proposed project that are issued by the County to all contractors. The project proponents shall provide the Deputy Assistant Field Supervisor for Endangered Species (Central Valley) at the Sacramento Fish and Wildlife Office with a hardcopy of the contract(s) for this project at least ten (10) working days before it is accepted or awarded.
6. At least 30 calendar days prior to initiating construction activities, the project proponents shall submit the names and curriculum vitae of the biological monitor(s) for the proposed project.
7. A Service-approved biologist must be on-site during all construction-related activities that occur within 250 feet of vernal pool crustacean habitat, and that could result in the take of these federally-listed species. The biologist will have the authority to halt any action that might result in take of listed species. If the biologist exercises this authority, the Service and the CDFG shall be notified by telephone and letter within one (1) working day. The biological monitor shall ensure that no clearing of vegetation and scraping, or digging, of soil occurs in the avoided/preserve area.



8. A Worker Environmental Awareness Training Program for construction personnel shall be conducted before the commencement of construction. The program shall provide workers with information on their responsibilities with regard to the listed vernal pool crustaceans, an overview of the life-history of the species, information on take prohibitions, and an explanation of the relevant terms and conditions of this biological opinion. Written documentation of the training must be submitted to the Sacramento Fish and Wildlife Office within three (3) working days of the completion of instruction.
9. Prior to groundbreaking, high-visibility fencing that is at least 4 feet tall shall be placed along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto adjacent off-site habitat. Such fencing will be inspected by the on-site biologist at the beginning of each work day and maintained in good condition. The fencing may be removed only when the construction of the proposed project is completed.
10. During construction operations, the number of access routes, number and size of staging areas, and the total area of the proposed project activity will be limited to the minimum necessary. Routes and boundaries will be clearly demarcated. Movement of heavy equipment to and from the project site will be restricted to established roadways to minimize habitat disturbance, and all vehicle traffic on access road will observe a speed limit of 20 miles per hour. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the wetland avoidance areas. All fueling, cleaning, and maintenance of vehicles and other equipment will occur only within designated areas and at least 250 feet away from any wetland habitats. The applicant will ensure contamination of habitat does not occur during such operations. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately. Such spills will be reported in the post-construction compliance reports.
11. To control erosion during and after implementation of the project, the applicant will implement best management practices (BMPs), as identified by the Central Valley Regional Water Quality Control Board. Erosion control measures and BMPs, which retain soil or sediment, runoff from dust control, and hazardous materials on the construction site and prevent these from entering the vernal pool complexes, will be placed, monitored, and maintained throughout the construction operations. These measures and BMPs may include, but are not limited to, silt fencing, sterile hay bales, vegetative strips, hydroseeding, and temporary sediment disposal. The Stormwater Pollution Prevention Plan (SWPPP) described in the Description of the Proposed Action section of this Biological Opinion shall include these and any other measures necessary to prevent the discharge of contaminated runoff onto adjacent offsite wetland habitats.
12. All heavy equipment, vehicles, and supplies will be stored at the designated staging area at the end of each work period. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging

areas and exclusive of the open space/wetland preserve and offsite wetland avoidance areas. Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. All fueling, cleaning, maintenance, and staging of vehicles and other equipment will occur only within designated areas and at least 250 feet away from the open space/wetland preserve and any off-site vernal pool crustacean habitats. All machinery will be properly maintained and cleaned to prevent spills and leaks. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately in accordance with applicable local, state and/or federal regulations. Such spills will be reported in the post-construction compliance reports.

13. The Corps shall ensure the applicant complies with the *Reporting Requirements* of this biological opinion.
14. The applicant has proposed to offset direct and/or indirect effects of vernal pool crustacean habitat loss through habitat preservation offsite. Prior to any ground disturbance on the proposed project site, credits commensurate with acreage commitment shall be dedicated within a Service-approved habitat preservation bank and documentation provided to the Service. If the applicant chooses not to use an approved preservation bank, then at least 120 days prior to construction, the applicant shall submit documentation of the preservation habitat including conservation easement, management plan, funding instrument, easement holder, etc., for Service approval.
15. The applicant has proposed to offset direct and/or indirect effects of vernal pool crustacean habitat through habitat restoration or creation. Prior to any fill of wetlands on the proposed project site, credits commensurate with acreage commitment shall be dedicated within a Service-approved habitat restoration/creation bank. If the applicant chooses not to use a service-approved creation/restoration bank, then at least 90 days prior to construction, the applicant shall submit documentation of the creation/restoration habitat including: construction plan, conservation easement, management plan, funding instrument, easement holder etc. for Service approval. The following criteria will be used by the Service when approving a restoration/creation site: (1) the restoration site's soils will be appropriate vernal pool soil types (e.g., San Joaquin, Redding, Corning); (2) the restoration site's soil would have been disturbed at some point in the past, either through land leveling, ditching and draining, berming, or other disturbance that has removed or modified edaphic and hydrologic features necessary to support vernal pool habitat; and (3) the restoration site will have a Service-approved conservation easement, a preserve management plan, and a long-term funding mechanism in place upon Service approval.

### Reporting Requirements

A post-construction compliance report prepared by the monitoring biologists must be submitted to the Deputy Assistant Field Supervisor of the Endangered Species Division (Central Valley) at the Sacramento Fish and Wildlife Office within thirty (30) calendar days of the completion of

construction activity or within thirty (30) calendar days of any break in construction activity lasting more than thirty (30) calendar days. This report shall detail (i) dates that groundbreaking started and when the project was completed; (ii) pertinent information concerning the success of the project in meeting compensation and other conservation measures; (iii) an explanation of failure to meet such measures, if any; (iv) known project effects on federally-listed species, if any; (v) occurrences of incidental take of any these species; and (vi) other pertinent information.

The project applicant must report to the Service immediately any information about take or suspected take of federally-listed species not authorized in this biological opinion. The project applicant must notify the Service within 24 hours of receiving such information. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal. The Service contact is the Resident Agent-in-charge of the Service's Law Enforcement Division at (916) 414-6660.

Any contractor or employee, who during routine operations and maintenance activities, inadvertently kills or injures a federally-listed species must immediately report the incident to their representative. This representative must contact the California Department of Fish and Game immediately in the case of a dead or injured listed species. The California Department of Fish and Game contact for immediate assistance is State Dispatch at (916) 445-0045.

#### CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases. The Service recommends the following conservation measures:

1. The Corps should work with the Service to address significant, unavoidable environmental effects resulting from projects proposed by non-Federal parties.
2. The Corps should work with the Service to implement the Service's 2006 Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon.
3. The Corps should work with the Service to ensure that its wetland delineation techniques fully assess the affects of proposed projects on listed vernal pool crustacean species.
4. The Corps, in partnership with the Service, should develop maintenance guidelines for the Corps projects that will reduce adverse effects of routine maintenance on vernal pool crustaceans and their habitats. Such action may contribute to the delisting and recovery of the species by preventing degradation of existing habitat and increasing the amount and stability of suitable habitat.

5. The Corps should conduct a study of cumulative loss of wetlands habitat, including habitat of listed crustaceans, in Sacramento County.

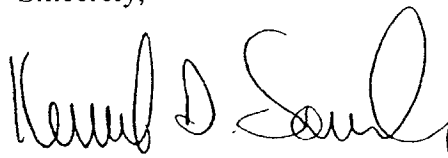
In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

#### REINITIATION—CLOSING STATEMENT

This concludes formal consultation on the proposed Douglas Road 103 project. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or, (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Please contact Rick Kuyper or Holly Herod, the Sacramento Valley Branch Chief, at (916) 414-6645, if you have any questions regarding this biological opinion for the proposed Douglas Road 103 project.

Sincerely,



Kenneth D. Sanchez  
Acting Field Supervisor

cc:

ARD (ES), Portland, Oregon

Mr. Kent Smith, California Dept. of Fish and Game, Rancho Cordova, California

Ms. Elizabeth Goldman, Environmental Protection Agency, San Francisco, California

Ms. Ellen Berryman, Berryman Ecological, Meadow Vista, California

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———. 2005. Endangered and Threatened Wildlife and Plants; Final Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants in California and Southern Oregon; Evaluation of Economic Exclusions From August 2003 Final Designation; Final Rule. *Federal Register* 70:46923-46999.

———. 2006. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. Portland, Oregon. xxii + 574 pp.

### PERSONAL COMMUNICATIONS

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Gifford, D. 2004. California Department of Fish and Game. January 8. Email to Laura Valoppi, U.S. Fish and Wildlife Service, Sacramento, California.

Holland, R.F. 2004. Presentation to staff of the Service's Sacramento Field Office. April 1.

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Mr. Will Ness

Radmacher, R. 2004. Sacramento County. January 9. Email to Dan Gifford of California Department of Fish and Game.

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California Regional Water Quality Control Board  
Central Valley Region

Robert Schneider, Chair

# 199700006



Arnold  
Schwarzenegger  
Governor

Linda S. Adams  
Secretary for  
Environmental  
Protection

Sacramento Main Office  
11020 Sun Center Drive #200, Rancho Cordova, California 95670-6114  
Phone (916) 464-3291 • FAX (916) 464-4645  
<http://www.waterboards.ca.gov/centralvalley>

21 September 2006

Mr. Jim Galovan  
Douglas Grantline 103 Investors, LLC  
111 Woodmere Drive, Suite 190  
Folsom, CA 95630

SEP 25 2006

**ACTION ON REQUEST FOR CLEAN WATER ACT §401 WATER QUALITY CERTIFICATION  
FOR DISCHARGE OF DREDGED AND/OR FILL MATERIALS FOR THE DOUGLAS ROAD  
103 PROJECT, (WDID#5A34CR00258) SACRAMENTO COUNTY**

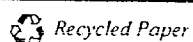
**ACTION:**

1. ☐ Order for Standard Certification
2. ☒ Order for Technically-conditioned Certification
3. ☐ Order for Denial of Certification

**WATER QUALITY CERTIFICATION STANDARD CONDITIONS:**

1. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to §13330 of the California Water Code and §3867 of Title 23 of the California Code of Regulations (23 CCR).
2. This certification action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
3. The validity of any non-denial certification action shall be conditioned upon total payment of the full fee required under 23 CCR §3833, unless otherwise stated in writing by the certifying agency.
4. Certification is valid for the duration of the described project. The Douglas Grantline 103 Investors, LLC shall notify the Regional Board in writing within 7 days of project completion.

California Environmental Protection Agency



CNS03119

### ADDITIONAL CONDITIONS (for Certification Action 2):

In addition to the four standard conditions, the applicant shall satisfy the following:

1. Douglas Grantline 103 Investors, LLC shall notify the Board in writing of the start of any in-water activities.
2. Except for activities permitted by the U.S. Army Corps under §404 of the Clean Water Act, soil, silt, or other organic materials shall not be placed where such materials could pass into surface water or surface water drainage courses.
3. The discharge of petroleum products or other excavated materials to surface waters is prohibited.
4. Activities shall not cause turbidity increases in surface waters to exceed:
  - (a) where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU;
  - (b) where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent;
  - (c) where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs;
  - (d) where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

Except that these limits will be eased during in-water working periods to allow a turbidity increase of 15 NTU over background turbidity as measured in surface waters 300 feet downstream from the working area. In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses will be fully protected.

5. Activities shall not cause settleable matter to exceed 0.1 ml/l in surface waters as measured in surface waters 300 feet downstream from the project.
6. Activities shall not cause visible oil, grease, or foam in the work area or downstream.
7. All areas disturbed by project activities shall be protected from washout or erosion.
8. In the event that project activities result in the deposition of soil materials or creation of a visible plume in surface waters, the following monitoring shall be conducted immediately upstream and 300 feet downstream of the work site and the results reported to this office within two weeks:

Parameter	Unit	Type of Sample	Frequency of Sample
<b>Turbidity</b>	<b>NTU</b>	<b>Grab</b>	Every 4 hours during in water work
<b>Settleable Material</b>	<b>ml/l</b>	<b>Grab</b>	Same as above.

9. Douglas Grantline 103 Investors, LLC shall notify the Board immediately if the above criteria for turbidity, settleable matter, oil/grease, or foam are exceeded.

10. Douglas Grantline 103 Investors, LLC shall notify the Board immediately of any spill of petroleum products or other organic or earthen materials.
11. Douglas Grantline 103 Investors, LLC shall comply with all Department of Fish and Game 1600 requirements for the project.
12. Douglas Grantline 103 Investors, LLC must obtain coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction Activities issued by the State Water Resources Control Board.
13. Douglas Grantline 103 Investors, LLC must provide compensatory mitigation for the fill or loss of all State waters resulting from the project (at least a 1:1 replacement ratio).
14. Douglas Grantline 103 Investors, LLC shall submit a copy of the final Wetland Mitigation Plan to Water Board staff. The final Wetland Mitigation Plan must be approved by the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

**ADDITIONAL STORM WATER QUALITY CONDITIONS:**

The applicant shall also satisfy the following additional storm water quality conditions:

1. During the construction phase, Douglas Grantline 103 Investors, LLC must employ strategies to minimize erosion and the introduction of pollutants into storm water runoff. These strategies must include the following:
  - (a) the Storm Water Pollution Prevention Plan (SWPPP) must be prepared during the project planning and design phases and before construction.
  - (b) an effective combination of erosion and sediment control Best Management Practices (BMPs) must be implemented and adequately working prior to the rainy season and during all phases of construction.
2. During the post-construction phase, Douglas Grantline 103 Investors, LLC must minimize the short and long-term impacts on receiving water quality from the Douglas Road 103 Project by doing the following:
  - (a) minimize the amount of impervious surfaces.
  - (b) implement pollution prevention methods supplemented by pollutant source controls and/or treatment controls.
  - (c) ensure existing waters of the State (i.e. wetlands, vernal pools, or creeks) are not used as pollutant source controls and/or treatment controls. Any discharges from the Douglas Road 103 Project must be treated prior to being discharged into the surrounding wetlands and/or Morrison and Laguna Creeks.

- (d) preserve and, where possible, create or restore areas that provide important water quality benefits, such as riparian corridors, wetlands, and buffer zones.
  - (c) limit disturbances of natural water bodies and natural drainage systems caused by development (including development of roads, highways, and bridges).
  - (f) use existing drainage master plans or studies to estimate increases in pollutant loads and flows resulting from projected future development and require incorporation of structural and non-structural Best management Practices (BMPs) to mitigate the projected increases in pollutant loads in runoff.
  - (g) identify and avoid development in areas that are particularly susceptible to erosion and sediment loss, or establish development guidance that protects areas from erosion sediment loss.
  - (h) control post-development peak storm water run-off discharge rates and velocities to prevent or reduce downstream erosion, and to protect stream habitat.
3. Douglas Grantline 103 Investors, LLC must ensure that all development within Douglas Road 103 Project provides verification of maintenance provisions for post-construction structural and treatment control BMPs. Verification shall include one or more of the following as applicable:
- (a) the developer's signed statement accepting responsibility for maintenance until the maintenance responsibility is legally transferred to another party; or
  - (b) written conditions in the sales or lease agreement that require the recipient to assume responsibility for maintenance; or
  - (c) written text in project conditions, covenants and restrictions for residential properties assigning maintenance responsibilities to a home owner's association, or other appropriate group, for maintenance of structural and treatment control BMPs; or
  - (d) any other legally enforceable agreement that assigns responsibility for maintenance of structural or treatment control BMPs.

**REGIONAL WATER QUALITY CONTROL BOARD CONTACT PERSON:**

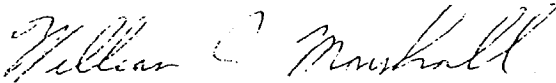
Patrick G. Gillum, Environmental Scientist  
11020 Sun Center Drive #200  
Rancho Cordova, California 95670-6114  
(916) 464-4709  
pgillum@waterboards.ca.gov



**WATER QUALITY CERTIFICATION:**

I hereby issue an order certifying that any discharge from the Douglas Grantline 103 Investors, LLC, Douglas Road 103 Project (WDID #5A34CR00258) will comply with the applicable provisions of §301 ("Effluent Limitations"), §302 ("Water Quality Related Effluent Limitations"), §303 ("Water Quality Standards and Implementation Plans"), §306 ("National Standards of Performance"), and §307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act. This discharge is also regulated under Regional Board Resolution No. R5-2003-0008 "*Waiver of Reports of Waste Discharge and Waste Discharge Requirements for Specific Types of Discharge: Type 12 Projects for which Water Quality Certification is issued by the Regional Board,*" which requires compliance with all conditions of this Water Quality Certification.

Except insofar as may be modified by any preceding conditions, all certification actions are contingent on (a) the discharge being limited and all proposed mitigation being completed in strict compliance with the applicant's project description and the attached Project Information Sheet, and (b) compliance with all applicable requirements of the Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).



PAMELA C. CREEDON  
Executive Officer

Enclosure: Project Information

cc: U.S. Army Corps of Engineers, Sacramento  
Timothy Vendlinski, Wetlands Section Chief (WTR-8), U.S. Environmental Protection  
Agency, Region 9, San Francisco  
U.S. Fish & Wildlife Service, Sacramento  
Oscar Balaguer, Certification Unit, State Water Resources Control Board, Sacramento  
Rebecca Loeffler, Foothill Associates, Rocklin

## PROJECT INFORMATION

**Application Date:** 13 January 2006

**Applicant:** Mr. Jim Galovan  
Douglas Grantline 103 Investors, LLC  
111 Woodmere Drive, Suite 190  
Folsom, CA 95630

**Applicant Representatives:** Rebecca Loeffler  
Foothill Associates  
655 Menlo Drive, Suite 100  
Rocklin, CA 95765-3718

**Project Name:** Douglas Road 103 Project

**Application Number:** WDID#5A34CR00258

**US. Corps File Number:** 199400365

**Type of Project:** Construction of a Residential Development

**Project Location:** Section 10, Township 8 North, Range 7 East, MDB&M. Latitude: 38°33'25" and Longitude: 121°12'00".

**County:** Sacramento County

**Receiving Water(s) (hydrologic unit):** Unnamed tributary to Morrison Creek, which is tributary to the Sacramento River, Valley- American Hydrologic Unit #519.21, Lower American HSA

**Water Body Type:** Wetlands

**Designated Beneficial Uses:** The Basin Plan for the Central Valley Regional Board has designated beneficial uses for surface and ground waters within the region. Beneficial uses that could be impacted by the project include: Municipal and Domestic Water Supply (MUN); Agricultural Supply (AGR); Industrial Supply (IND); Hydropower Generation (POW); Groundwater Recharge, Water Contact Recreation (REC-1); Non-contact Water Recreation (REC-2); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); and Wildlife Habitat (WILD).

**Project Description (purpose/goal):** The Douglas Road 103 project consists of a grading and construction on +/- 106- acre site. Construction will result in the loss of 2.03 acres of wetlands, including 1.71 acres of vernal pools, 0.10 acres of ephemeral drainage, and 0.22 acres of seasonal wetlands.

**Preliminary Water Quality Concerns:** The construction activities may impact surface waters with increased turbidity and settleable matter.

**Proposed Mitigation to Address Concerns:** Douglas Grantline 103 Investors, LLC will implement Best Management Practices (BMPs) to control sedimentation and erosion. All temporary affected areas will be restored to pre-construction contours and conditions upon completion of construction activities. Douglas Grantline 103 Investors, LLC will conduct turbidity and settleable matter testing during in water work, stopping work if Basin Plan criteria are exceeded or are observed.

**Fill/Excavation Area:** 3,274 cubic yards of clean soil will be used to fill 2.03-acres of jurisdictional wetland.

**Dredge Volume:** <0.0 cubic yards

**U.S. Army Corps of Engineers Permit Number:** Individual Permit # 199400365

**Department of Fish & Game Streambed Alteration Agreement:** Douglas Grantline 103 Investors, LLC applied for a Streambed Alteration Agreement on 13 January 2006.

**Possible Listed Species:** Vernal pool fairy shrimp, and Vernal pool tadpole shrimp.

**Status of CEQA Compliance:** Douglas Grantline 103 Investors, LLC received a signed Mitigated Negative Declaration from the County of Sacramento in July 2005.

**Compensatory Mitigation:** There will be 2.03-acres of jurisdictional wetland created off-site at a Corps approved mitigation site. A receipt for the mitigation units purchased will be forwarded to Water Board staff.

**Application Fee Provided:** A fee of \$4,864.50 was submitted on 13 January 2006 as required by 23 CCR §3833b(2)(A) and by 23 CCR § 2200(e).

DISTRIBUTION LISTS

U.S. Army Corp of Engineers  
Sacramento District Office  
1325 J Street  
Sacramento, CA 95814-2922

Mr. Timothy Vendlinski  
Wetlands Section Chief (W-3)  
United States Environmental Protection Agency  
75 Hawthorne Street  
San Francisco, CA 94105

United States Fish & Wildlife Service  
Sacramento Fish & Wildlife Office  
2800 Cottage Way  
Sacramento, CA 95825

Mr. Oscar Balaguer  
State Water Resources Control Board, Certification Unit  
P.O. Box 944213  
Sacramento, CA 94244-2130

Rebecca Loeffler  
Foothill Associates  
655 Menlo Drive, Suite 100  
Rocklin, CA 95765-3718

## **Appendix D**

### **USFWS Biological Opinions for Sunridge Properties**



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825-1846



In reply refer to:  
1-1-04-F-0339

DEC 9 2004

Mr. Justin Cutler  
Chief, Sacramento Valley Office  
Department of the Army  
U.S. Army Engineer District, Sacramento  
1325 J Street, 14<sup>th</sup> Floor  
Sacramento, California 95814-2922

Subject: Formal Endangered Species Consultation on the proposed Anatolia IV Project (Corps File Number ~~2004~~ 199400210) Sacramento County, California

Dear Mr. Cutler:

This is in response to your March 24, 2004, letter and supporting documentation requesting Section 7 consultation for the proposed Anatolia IV project (proposed project) in Sacramento County, California. Your request was received by the U.S. Fish and Wildlife Service (Service) on March 26, 2004. At issue are potential adverse effects to the federally-listed vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardii*). Surveys conducted of the proposed project site have not indicated the presence of the federally-listed slender Orcutt grass (*Orcuttia tenuis*), the Sacramento Orcutt grass (*Orcuttia viscida*), and the California tiger salamander (*Ambystoma californiense*). This document represents the Service's biological opinion on the effects of the project on the threatened vernal pool fairy shrimp and endangered vernal pool tadpole shrimp, in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act).

The findings and requirements in this consultation are based on: 1) permitting strategies discussed during the May 10- November 22, 2004 meetings attended by landowners, developers, and their representatives, staff from Congressman Doug Ose's office, California Department of Fish and Game, the Service, Department of Army-Corps of Engineers, and the Environmental Protection Agency; 2) the September 8, 2004, *Anatolia IV Section 7 Biological Assessment* and the Conservation Proposal, prepared by Foothill Associates, Inc.; 3) a March 24, 2004, letter from the Corps to the Service requesting initiation of formal consultation on proposed project; 4) site visits; 5) meetings, electronic mail (email) correspondence, and telephone conversations between representatives of the Service, Corps, Foothill Associates; 6) other information available to the Service.

#### Consultation History

TAKE PRIDE  
IN AMERICA 

CNS08309



Beginning on May 10, 2002, the Planning Department of the County of Sacramento initiated and facilitated a series of meetings to discuss and develop potential wetlands and endangered species permitting strategies for the Sunrise Douglas Community Planning Area (SDCPA). These meetings were attended by landowners, developers, and their representatives, staff from Congressman Doug Ose's office, California Department of Fish and Game, the Service, Department of Army-Corps of Engineers (Corps), and the Environmental Protection Agency (EPA). The entire group met at least twelve times between May 10th and November 22, 2002, in an attempt to develop a strategy to address issues relating to endangered species and wetland protection within the SDCPA. By November of 2002, a resolution was not reached and discussions ceased at that time.

On July 17, 2002, during this initial phase of meetings, the Sacramento County Board of Supervisors approved both the larger SDCPA and the SunRidge Specific Plan. On July 1, 2003, with the incorporation of the City of Rancho Cordova ("City"), the SDCPA came under the City's land use jurisdiction.

A smaller group of project proponents representing the property owners in the Sun Ridge Specific plan area initiated several meetings with the Fish and Wildlife Service during mid 2003. Discussions focused on avoidance of endangered species habitats in the SDCPA and specific plan areas. Again, no resolution with the Service was reached.

In March 2004, Congressman Doug Ose initiated meetings with the Federal Agencies, local agencies, and the landowners/developer representatives to facilitate resolution of the issues that had emerged during the previous meetings. Congressman Ose urged the Federal Agencies to develop a conceptual strategy that would meet the requirements of the Federal Agencies respective statutes. Congressman Ose urged the regulated parties to work cooperatively with the Federal agencies to explore mechanisms to accommodate the agencies' obligations to comply fully with pertinent federal laws and regulations, which place a premium on the avoidance of on-site wetlands resources to the extent practicable and the need to avoid jeopardizing the continued existence of threatened and endangered species. In short, the Congressman encouraged the parties to work cooperatively with one another to develop a conceptual onsite avoidance and offsite compensation strategy that reached a proper and workable balance between and amongst the following: the mandates of federal law; the need to preserve ecosystem integrity and the habitat of endangered and threatened species; the need to acknowledge the planning policies and objectives of the City of Rancho Cordova; and the need to account for the economic realities facing private sector developers. These meetings continued through September 2004.

In June of 2004 the Federal agencies developed two documents ("A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area"; and the accompanying planning map) that outline our strategies for conserving threatened and endangered species and wetland habitats and to provide a framework for development proposals. In addition, our strategy would provide some conceptual guidelines for permitting.

### **Service Correspondence**

April 2, 1996, To: A. Champ-Corps of Engineers, Re: Formal Section 7 Consultation on Issuance of 404 Permit for the Sunrise Douglas Project (AKA Anatolia I, II, III). Service File #1-1-96-F-0062, Corps PN 190110021

November 22, 2002, To: M. Finan-Corps of Engineers, Re: Request for additional information on the Sunridge Specific Plan/Sunrise Douglas Community Plan. Service file #1-1-03-I-0411

July 18, 2002, To: D. Nottoli-Sacramento County Board of Supervisors, Re: Sunrise Douglas Community Plan and SunRidge Specific Plan-Service File # 1-1-02-CP-2579

April 26, 2004, To: Col. Conrad-Corps of Engineers, Re: SunRidge Specific Plan, Service file #/Corps PN 200000336

### **Consultation History Specific to the Proposed Project**

March 24, 2004. U.S. Army Corps of Engineers requested to initiate Section 7 consultation for the proposed project.

September 8, 2004. Foothill Associates submitted *Anatolia IV Section 7 Biological Assessment* to the Service dated September 8, 2004. The Service received the document on September 24, 2004.

September 15, 2004. The Service sent Foothill Associates an email explaining our inclination to consider all wetland types (variously classified) as endangered species habitat. One exception might be stock ponds, given the species under consultation.

September 21, 2004. Foothill Associates submitted a letter to the Service, providing proposed conservation measures for the vernal pool crustacean habitat that would be directly and indirectly affected by the proposed project. The Service received this letter on September 27, 2004.

October 7, 2004. Meeting with Foothill Associates and Service representatives regarding clarification on minimization strategies for each proposed project.

October 13, 2004. Foothill Associates sent the Service an email revising the minimization strategy that was outlined in their September 21, 2004 letter to the Service.

## **BIOLOGICAL OPINION**

### **Description of the Proposed Action**

The following is taken from the document titled *A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area*, prepared by the Service, the Corps, and the EPA (enclosed). This document and the accompanying planning map developed by the three Federal agencies are hereby incorporated by reference into the project description. Thus, our biological opinion on this proposed action, the

Anatolia IV project, is based on application and full implementation of the Federal agencies conservation strategy outlined in this document and map, on all future projects in the SDCPA.

“In March through May 2004, representatives of the US Fish and Wildlife Service, US Environmental Protection Agency, and the US Army Corps Engineers (Agencies) met to formulate a conceptual-level strategy for avoiding, minimizing, and preserving aquatic resource habitat in the Sunrise-Douglas Community Plan Area (SDCPA). The intended result of this effort was to achieve reasonable protection and conservation of federally threatened and endangered species under the Endangered Species Act, while taking a regional approach to avoidance and minimization of impacts to waters of the US, including wetlands, in accordance with Section 404 (b)(1) guidelines under the Clean Water Act. The strategy also endeavors to ensure a viable South Sacramento County Habitat Conservation Plan (HCP) can be developed, given that a large proportion of vernal pool habitat under consideration by the HCP planners is at risk in the SDCPA.

The conceptual-level strategy is represented by preserve areas shown on the map titled Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection dated March 2004 (see attached). To meet the goals of ESA and the Clean Water Act, the Agencies arrived at the boundaries of the “Preserve Areas” based on best professional judgment and a limited amount of information regarding regional and site-specific biology and hydro-geomorphology (such as wetland delineations, species accounts, and environmental impact reports), while recognizing that development is planned in the area. Of particular focus is the preservation of vernal pool complexes and corridors for Morrison Creek and Laguna Creek. The mapped boundaries are the smallest that would be acceptable to the Agencies and are predicated on ten principles and standards that would be followed by developers and planners as each element of the overall development proceeds.

The conceptual level strategy should be used by developers and planners to design and plan projects in the SDCPA. The Agencies will use the strategy to aid in the review of proposed development and evaluate the probable individual and cumulative effects on aquatic resources and sensitive species.

The Agencies anticipate that permit decisions and biological opinions will be completed on a case-by-case basis, using site-specific project and aquatic resource habitat information. Each proposed project would be evaluated on its own merits within the larger context of the SDCPA. Depending on the particular hydrology, habitat features, and development plans for a particular parcel, the conceptual preserve boundaries may need to be adjusted to minimize direct and indirect impacts to aquatic resources. Appropriate compensatory mitigation will be developed following demonstrated avoidance and minimization of project impacts.”

The Anatolia IV project site is located in southeastern Sacramento County in the City of Rancho Cordova approximately five miles south of Highway 50, east of Sunrise Boulevard and the

Folsom South Canal, and north of Jackson Road (Highway 16). The Anatolia IV project site is within the Sunridge Specific Plan area (SSPA), which is part of the Sunrise Douglas Community Plan. The Anatolia IV project lies one mile south of Douglas Road and west of and adjacent to Jaeger Road. The project site is located in Section 17 of Township 8 North, Range 7 East on the U.S.G.S. Buffalo Creek 7.5' quadrangle.

The Project Site is within the 6,042 acre SDCPA located within the Sacramento County General Plan Urban Service Boundary and Policy Area. The project is also located within the SSPA, which provides a greater detailed land use plan for development of approximately 2,632 acres within the SDCPA. The SDCPA is located within the headwaters of both the Morrison Creek and Laguna Creek watersheds.

The proposed project involves grading the ±25-acre site to construct a low density residential development including associated infrastructure (sewer mains and laterals, water mains, and utility lines). The project proponents are proposing to develop approximately 134 single family homes. The proposed project site consists of a ±25-acre parcel that includes 1.36 acres of vernal pools subject to Clean Water Act jurisdiction. These wetlands are found primarily in the northern portion of the property. Grading would result in the loss of the 1.36 acres of on-site wetlands. The proposed project boundaries are not contiguous with any open space or preserved areas. There are projects under construction, or proposed projects on all sides adjacent to the propose project site.

### **Proposed Conservation Measures**

The project applicant has proposed the following conservation measures in the September 8, 2004, *Anatolia IV Section 7 Biological Assessment* and the October 13, 2004 electronic letter revising the minimization strategy to minimize adverse effects to the two federally-listed vernal pool crustacean species.

1. Standard construction Best Management Practices (BMPs) will be incorporated into construction designs, plans and specifications, and required of contractors during construction. The BMPs would include the following:
  - (a) All constructed slopes adjacent to the preserve will be hydroseeded with a native grassland mix. The hydroseed mix will be applied with a tackifying agent at a rate of at least 2 tons/acre and based on manufacturer's recommendations. The tackifying agent will be a hydraulic matrix which when applied, and upon drying, adheres to the soil to form a 100% cover which is biodegradable, promotes vegetation, and prevents soil erosion. The hydroseed mix will not be applied before, during, or immediately after rainfall so that the matrix will have an opportunity to dry 24 hours after installation;
  - (b) Certified weed-free straw wattles will be installed at the base of all slopes along the property lines of the proposed property site. The existing Jaeger Road currently provides additional erosion and sediment control to the east. Road improvement projects will be subject to a Storm Water Pollution Prevention Plan (SWPP) and BMP monitoring. Prior to installation of the straw wattles, a concave

key trench approximately 2 to 4 inches deep will be contoured along the proposed installation route. Soil excavated for the trenching will be placed on the uphill or flow side of the straw wattles to prevent water from undercutting the straw wattles. Stakes will be driven in on alternating sides of the straw wattles, to hold them in place. The straw wattles will be maintained for a period of time at least until the native grassland vegetation is fully established and the soil is stabilized;

- (c) During construction all excavated materials will be deposited or stored such that this material cannot be washed into any watercourse, and excess supplies of certified weed-free straw bales and/or sedimentation fencing will be available at the construction site for periodic site-specific use as needed.;
  - (d) Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. No refueling, storage, servicing, or maintenance of equipment will take place within 100 feet of the adjacent off-site habitat. All machinery will be properly maintained and cleaned to prevent spills and leaks. Any spills or leaks from the equipment will be reported and cleaned up in accordance with applicable local, state and/or federal regulations;
  - (e) Temporary fencing will be installed prior to construction along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto adjacent off-site habitat; and
  - (f) An environmental monitor will be employed to ensure compliance with construction-related impact avoidance measures. The monitor will report directly to the City of Rancho Cordova Public Works project manager, and based on reports of non-compliance with environmental requirements, will be authorized to stop work orders and to take actions necessary to prevent damage to off-site habitat. Monitoring reports will be provided to the City of Rancho Cordova Department of Public Works project manager on a daily basis during initial ground breaking, and on a weekly basis (or more frequently as needed when problems arise) thereafter until construction is finished.
2. A SWPPP will be prepared for the proposed project, with the following objectives; (a) to identify pollutant sources, including sources of sediment, that may affect the quality of storm water discharges from the construction of the project; (b) to identify BMPs to reduce or eliminate pollutants in storm water discharges and authorized non-storm water discharges, from the site during construction; (c) to outline and provide guidance for BMP monitoring; (d) to identify project discharge points and receiving waters; (e) to address post-construction BMP implementation and monitoring; and (f) to address sediment / siltation / turbidity and non-visually detectable pollutant monitoring, and outline a sampling and analysis strategy.
  3. Habitat Preservation and Restoration

- a. Direct effects to 1.36 acres of vernal pool crustacean habitat will be offset through habitat preservation (refer to Tables 1 and 2). Habitat preservation will be achieved through:
  - i. The preservation of 5.44 acres of vernal pool crustacean habitat at Borden Ranch. This site will be preserved with a conservation easement and protected and managed in perpetuity consistent with a Service-approved preserve management plan. The preserve management plan needs to be received by the service 120 days prior to construction for review. A long-term funding mechanism (*i.e.*, an endowment fund) to fund the preserve management will be established upon Service approval of the site.
- b. Direct effects to vernal pool crustacean habitat will be further offset through habitat restoration/creation at a 1:1 ratio (refer to Tables 1 and 2). The restoration/creation goal will be to create and enhance wetlands with habitat functions and values equal to, or greater than, the wetland features affected by the implementation of the proposed project. Habitat creation/restoration will be achieved through either:
  - i. The purchase of vernal pool restoration/creation credits equivalent to 1.36 acres (at a 1:1 ratio) at a Service-approved bank; or
  - ii. The restoration of 1.36 acres of vernal pool crustacean habitat at a Service-approved site within Sacramento County that meets the following criteria:
    - 1. The restoration site's soils will be appropriate vernal pool soil types (*e.g.*, San Joaquin, Redding, Corning);
    - 2. The restoration site's soil would have been disturbed at some point in the past, either through land leveling, ditching and draining, berming, or other disturbance that has removed or modified edaphic and hydrologic features necessary to support vernal pool habitat;
    - 3. The restoration site will have a conservation easement, a preserve management plan, and a long-term funding mechanism in place upon Service approval.

**Table 1 – Vernal Pool Crustacean Habitat Effects and Compensation Acreages if Credits Purchased at Anatolia Conservation Bank**

Type	Acres of Direct Effects	Acres of Indirect Effects	2:1 Preservation Compensation	1:1 Creation Compensation
Vernal Pool	1.36	0	2.72	1.36
<b>TOTAL</b>	<b>1.36</b>	<b>0</b>	<b>2.72</b>	<b>1.36</b>

**Table 2 – Vernal Pool Crustacean Habitat Effects and Compensation Acreages if Credits**



**Purchased at Borden Ranch Preserve or at Another Service-Approved Site**

<b>Type</b>	<b>Acres of Direct Effects</b>	<b>Acres of Indirect Effects</b>	<b>4:1 Preservation Compensation</b>	<b>1:1 Creation Compensation</b>
Vernal Pool	1.36	0	5.44	1.36
<b>TOTAL</b>	<b>1.36</b>	<b>0</b>	<b>5.44</b>	<b>1.36</b>

**STATUS OF THE SPECIES**

The vernal pool tadpole shrimp and vernal pool fairy shrimp were listed as endangered and threatened, respectively, on September 19, 1994. Final critical habitat was designated for these species on August 6, 2003 (68 **FR** 46684). Complete descriptions of these species are found in 59 **FR** 48136, the final rule listing these species under the Act. These crustaceans are restricted to vernal pools and swales and other seasonal aquatic habitats in California. Eng *et al.* (1990), Simovich *et al.* (1992), and (Service 1994c) provide further details about their life history and ecology. The Service did not designate any critical habitat for the vernal pool crustaceans in Sacramento County. Although the Service designated critical habitat for the vernal pool fairy shrimp in San Joaquin County, none will be affected by the proposed project.

**Life History**

**Vernal pool tadpole shrimp.** The vernal pool tadpole shrimp has dorsal compound eyes, a large shield-like carapace that covers most of its body, and a pair of long cercopods at the end of its last abdominal segment (Linder 1952, Longhurst 1955, Pennak 1989). It is primarily a benthic animal that swims with its legs down. Its diet consists of organic detritus and living organisms, such as fairy shrimp and other invertebrates (Pennak 1989). The females deposit their eggs on vegetation and other objects on the pool bottom. Tadpole shrimp eggs are known as cysts during the summer, when they lie dormant in the dry pool sediments (Lanway 1974, Ahl 1991).

The life history of the vernal pool tadpole shrimp is linked to the environmental characteristics of its vernal pool habitat. After winter rains fill the pools, the populations are re-established from dormant cysts. A portion of the cysts hatch immediately and the rest remain dormant in the soil to hatch during later rainy seasons (Ahl 1991). The vernal pool tadpole shrimp is a relatively long-lived species (Ahl 1991). Adults are often present and reproductive until the pools dry up in the spring (Ahl 1991, Simovich *et al.* 1992).

**Vernal pool fairy shrimp.** Vernal pool fairy shrimp have delicate elongate bodies, large stalked compound eyes, no carapace, and 11 pairs of swimming legs. The swim or glide gracefully upside-down by means of complex, wavelike beating movements. Fairy shrimp feed on algae, bacteria, protozoa, rotifers, and detritus. The females carry eggs in an oval or elongate ventral brood sac. The eggs are either dropped to the pool bottom or remain in the brood sac until the female dies and sinks. The dormant cysts are capable of withstanding heat, cold, and prolonged desiccation. When the pools refill in the same or subsequent seasons, some, but not all, of the cysts may hatch. The cyst bank in the soil may therefore be comprised of cysts from several years of breeding (Donald 1983). The early stages of the fairy shrimp develop rapidly into

adults. The vernal pool fairy shrimp can mature quickly, allowing populations to persist in short-lived shallow pools (Simovich *et al.* 1992).

### **Distribution**

**Vernal pool tadpole shrimp.** The vernal pool tadpole shrimp is known from 168 occurrences in the Central Valley, ranging from east of Redding in Shasta County south to Fresno County, and from a single vernal pool complex located in the San Francisco Bay National Wildlife Refuge in Alameda County. It inhabits vernal pools containing clear to highly turbid water, ranging in size from 5 square meters (54 square feet) in the Mather Air Force Base area of Sacramento County, to the 36-hectare (89-acre) Olcott Lake at Jepson Prairie in Solano County.

**Vernal pool fairy shrimp.** The vernal pool fairy shrimp is known from 342 occurrences extending from Shasta County through most of the length of the Central Valley to Pinnacles in San Benito County (Eng *et al.* 1990, Fugate 1992, CNDDDB 2004) and Riverside County. Five disjunctive populations exist: one near Soda Lake in San Luis Obispo County; one in the mountain grasslands of northern Santa Barbara County; one on the Santa Rosa Plateau in Riverside County; one near Rancho California in Riverside County; and one on the Agate Desert near Medford, Oregon. The vernal pool fairy shrimp inhabits vernal pools with clear to tea-colored water, most commonly in grass- or mud-bottomed swales, basalt flow depression pools in unplowed grasslands, or even sandstone rock outcrops or alkaline vernal pools.

The genetic characteristics of these species, as well as ecological conditions, such as watershed continuity, indicate that populations of vernal pool crustaceans are defined by pool complexes rather than by individual vernal pools (Fugate 1992). Therefore, the most accurate indication of the distribution and abundance of these species is the number of inhabited vernal pool complexes. The pools and, in some cases, pool complexes supporting these species are usually small. Human-caused and unforeseen natural catastrophic events such as long-term drought, non-native predators, off-road vehicles, pollution, berming, and urban development, threaten their extirpation at some sites.

### **Dispersal**

The primary historic dispersal method for the vernal pool tadpole shrimp and vernal pool fairy shrimp likely was large scale flooding resulting from winter and spring rains which allowed the animals to colonize different individual vernal pools and other vernal pool complexes. This dispersal is currently non-functional due to the construction of dams, levees, and other flood control measures, and widespread urbanization within significant portions of the range of this species. Waterfowl and shorebirds may now be the primary dispersal agents for vernal pool tadpole shrimp and vernal pool fairy shrimp. The eggs of these crustaceans are either ingested (Krapu 1974, Swanson *et al.* 1974, Driver 1981, Ahl 1991) and/or adhere to the legs and feathers where they are transported to new habitats.

### **ENVIRONMENTAL BASELINE**

Historically, vernal pools and vernal pool complexes occurred extensively throughout the

Sacramento Valley of California. However, conversion of vernal pools and vernal pool complexes has resulted in a 91 percent loss of vernal pool resources in California (State of California 2003d). By 1973, between 60 and 85 percent of the area within the Central Valley that once supported vernal pools had been destroyed (Holland 1978). In the ensuing 30 years, threats to this habitat type have continued and resulted in a substantial amount of vernal pool habitat being converted for human uses in spite of Federal regulations implemented to protect wetlands. For example, between 1987 and 1992, 467 acres of wetlands within the Sacramento area were filled pursuant to Nationwide Permit 26 (Service 1992). A majority of those wetlands losses involved vernal pools, the endemic habitat of the vernal pool tadpole shrimp, the vernal pool fairy shrimp (shrimp), and slender and Sacramento Orcutt grasses. It is estimated that within 20 years human activities will destroy 60 to 70 percent of the remaining vernal pools (Coe 1988).

In addition to direct habitat loss, the two shrimp populations have been and continue to be highly fragmented throughout their ranges due to conversion of natural habitat for urban and agricultural uses. Fragmentation results in small isolated shrimp populations. Ecological theory predicts that such populations will be highly susceptible to extirpation due to chance events, inbreeding depression, or additional environmental disturbance (Gilpin and Soulé 1988; Goodman 1987a,b). If an extirpation event occurs in a population that has been fragmented, the opportunities for recolonization would be greatly reduced due to physical (geographic) isolation from other (source) populations.

Human population growth in Sacramento County has steadily increased. On the average, Sacramento County has experienced an annual population increase of 1.38 percent for the period between 1991 and 1999 (Service 2000). For the period between 1990 and 2000, population growth in Sacramento County increased 17.5 percent, with an average annual growth rate of 17.5 percent (State of California 2002). This annual growth appears to be increasing, as demonstrated by the 2.63 percent and 2.2 percent increases in population growth in 2001 and 2002, respectively (State of California 2003a, 2003b). Increased housing demand and urban development accompany the population growth in Sacramento County. Between 1990 and 2000, housing units in Sacramento County increased by 1.37 percent annually (State of California 2000, 2003c). Population growth and concomitant housing demand and subsequent vernal pool resource development are projected to continue. Population projections for Sacramento County are expected to increase above 2000 levels by 19.7 percent in 2010, by 28 percent in 2015, and by 37.5 percent in 2020 (State of California 2001).

Sacramento County represents important, high quality habitat for the two shrimp populations by providing large, nearly contiguous areas of relatively undisturbed vernal pool habitat. Sacramento County contains the greatest number of occurrences of vernal pool tadpole shrimp within the range of the species, and also is one of the two counties with the greatest number of occurrences of vernal pool fairy shrimp within the range of the species. Sacramento County contains 58 (17 percent) out of the total of 342 reported occurrences of vernal pool fairy shrimp, and 58 (34 percent) out of the total of 173 reported occurrences of vernal pool tadpole shrimp (CNDDDB 2004). Further, Sugnet and Associates (1993) reported that of 3,092 "discrete populations" checked, only 345 locations, or about 11 percent of all locations checked, were found to support the vernal pool tadpole shrimp. Of these 345 locations supporting the vernal pool tadpole shrimp, 219 (63 percent) were in Sacramento County. Further, of the 3,092

locations checked, 178 locations (6 percent) were found to support the vernal pool fairy shrimp. Of this total, 63 locations (35 percent) were within Sacramento County.

The vernal pool tadpole shrimp and vernal pool fairy shrimp are imperiled by a variety of human-caused activities. Their habitats have been lost through direct destruction and modification due to filling, grading, disking, leveling, and other activities. In addition, vernal pools have been imperiled by a variety of anthropogenic modifications to upland habitats and watersheds. These activities, primarily urban development, water supply/flood control projects, land conversion for agriculture, off-road vehicle use, certain mosquito abatement measures, and pesticide/herbicide use can lead to disturbance of natural flood regimes, changes in water table depth, alterations of the timing and duration of vernal pool inundation, introduction of non-native plants and animals, and water pollution. These indirect effects can result in adverse effects to vernal pool species.

A number of State, local, private, and unrelated Federal actions have occurred within the project area and adjacent region affecting the environmental baseline of these species. Some of these projects have been subject to prior section 7 consultation. Based on an informal review, the Service has issued approximately 157 biological opinions to Federal agencies on proposed projects in Sacramento County that have adversely affected the shrimp species since the two species were proposed to be listed in 1994. This total does not reflect the formal consultations that were withdrawn, those that are suspended, and those that have insufficient information to conclude an effects analysis, those that were amended, or ones that the Service issued a conference opinion. No State of California actions have taken place within Sacramento County that has adversely affected the species in the action area. Although these proposed projects in Sacramento County have eliminated vernal pools and vernal pool complexes, the offsetting compensating measures are designed to minimize the effects of take of these species resulting in both negative and positive effects to the species. Thus, the trend for the two vernal pool species within the county is most likely static.

The actions listed above have resulted in both direct and indirect impacts to vernal pools within the region, and have contributed to the loss of vernal pool tadpole shrimp and vernal pool fairy shrimp populations. Although a reduction of the two shrimp populations has not been quantified, the acreage of lost habitat continues to grow.

In south Sacramento County, the Urban Services Boundary (USB) is a planning boundary that coincides with the areas north of the Cosumnes River/Deer Creek drainage system. Between 1993 and 2000, an estimated 14,950 acres were converted to urban development within the USB (pers. comm., D. Gifford, 2004), based on an analysis of the California Department of Water Resources mapping data. An independent analysis of urban growth in Sacramento County estimated that an estimated 22,000 acres were converted between 1990 and 2000, averaging 2,200 acres per year (pers. comm., Richard Radmacher, Sacramento County, 2004). As of 1998 (the most recent year for which vernal pool mapping from aerial photographs is available), there remained an estimated 23,533 acres of vernal pool grasslands within the USB, supporting approximately 946 acres of wetted vernal pool acreage (pers. comm., Lora Konde, California Department of Fish and Game, 2003).

Vernal pool complexes, occurring north of the Cosumnes River/Deer Creek drainage and within

the USB. contain a high density of occupied pool of both vernal pool tadpole shrimp and vernal pool fairy shrimp. There are 31 known occurrences of vernal pool tadpole shrimp inside the USB, compared to 17 occurrences outside the USB (CNDDDB 2003). There are 25 known occurrences of vernal pool fairy shrimp inside the USB, compared to 18 occurrences outside the USB (CNDDDB 2003). The data from the CNDDDB do not reflect additional reported records in the Sunrise-Douglas area, where 137 occurrences of vernal pool tadpole shrimp and 46 occurrences of vernal pool fairy shrimp, and 2 occurrences of Orcutt grasses (2 slender Orcutt grass and 4 Sacramento Orcutt grass) are reported (pers. comm., Arnold Roessler, Service, 2004). An additional occurrence of slender Orcutt grass has been reported, but not recorded in the CNDDDB (pers. Comm., Pete Balfour, ECORP Consulting, 2004).

The vernal pools on the proposed project site are classified as the old-terrace type and are located on soils associated with Laguna geologic formation. Old-terrace is a rapidly disappearing habitat type in Sacramento County that consists of ancient river channel deposits that were laid down from 600,000 to more than one million years ago by the American River. By comparison, young-terrace formation dates from 100,000 to 200,000 years ago. Old-terrace formation generally has a higher density of vernal pools, deeper pools, and a greater number of special status plants and crustaceans than young-terrace formations. Some special status species found in old-terrace pools may have evolved from species inhabiting shores of ancient lakes in the Central Valley. Old-terrace pools may have served as refugia for these species as the lakes disappeared (Ref: Fuller, pers. comm. 2004). Sacramento County contains an estimated 764 wetted acres of vernal pools on low terrace, 1,390 wetted acres of vernal pools on high terrace, and 189 wetted acres of vernal pools on volcanic mudflow vernal pools.

There are two predominant soil types found within south Sacramento County. The Valley Springs soil type typifies Gill Ranch, located in Sacramento County, approximately 12 miles southeast of the proposed project site. Vernal pools found within the Valley Springs soil type are the young-terrace formation. Young-terrace formations, because they have a higher slope gradient, tend to have fewer vernal pools that are typically smaller and shallower. These vernal pools also are inundated for shorter durations. These factors typically result in lower species diversity. Generally, the larger the vernal pool on this soil type, the higher its biotic diversity. Vernal pool fairy shrimp, vernal pool tadpole shrimp, and Sacramento Orcutt grass are less likely to occur in young-terrace formation vernal pools found on Valley Springs soils. (Ref: Holland, pers. comm. 2004).

The Laguna geologic formation and its associated soils entirely characterize the SDCPA. Vernal pools found within this soil type are old-terrace types. Old-terrace types, because they have a lower slope gradient, tend to have pools that are larger, deeper, and clearer. These pools are inundated for longer periods, but dry and refill less often than the Valley Springs soil type. Generally, the smaller the vernal pool on this soil type, the higher its invertebrate diversity. Although vernal pool fairy shrimp occur in pools on both soil types, but more frequently in pools on Laguna soils. Vernal pool tadpole shrimp are found almost exclusively in old-terrace formation vernal pools found on Laguna soils.

Several areas containing old-terrace formation have been protected for their high quality vernal pool habitat and high concentration of special status species populations by the Sacramento

Valley Conservancy (SVC). This potential preserve area, the SVC's Vernal Pool Prairie Preserve, would cover 2,000 to 3,000 acres and supports a variety of special status plants and animals on relatively undisturbed grasslands containing young and old terrace formations and northern hardpan vernal pools. Within the proposed Prairie Preserve, areas already protected include the Arroyo Seco Mitigation Bank, the Excelsior 184 parcel, and the Sacramento County-owned Multi Cultural Park; outside of the proposed Prairie Preserve, the Sunrise Douglas Preservation Bank, and a portion of Howard Ranch are protected. All of these preserves are within proposed critical habitat for the two listed vernal pool crustaceans addressed in this biological opinion.

There are 342 records of vernal pool fairy shrimp and 173 records of vernal pool tadpole shrimp recorded in the CNDDDB for the entire state of California (CNDDDB 2004). Of these records, 58 vernal pool fairy shrimp records and 58 vernal pool tadpole shrimp records are from Sacramento County (CNDDDB 2004). Vernal pool fairy shrimp and vernal pool tadpole shrimp have both been observed in wetlands throughout the Sunrise Douglas area. Surveys were conducted on the proposed Anatolia IV project area for federally threatened slender Orcutt grass or the federally endangered Sacramento Orcutt grass. No Orcutt grass was found in the proposed project site.

Vernal pool fairy shrimp located within the Sunridge Specific Plan: There is one record within the Sunridge Specific Plan boundaries, and another 17 records located within five miles of the Sunridge Specific Plan area boundaries. The nearest occurrence (# 43) of this species, observed in March 1996, is a half of a mile southwest of the proposed project site.

Vernal pool tadpole shrimp within the Sunridge Specific Plan: There are two records within the Sunridge Specific Plan boundaries, and another 23 records within five miles of these boundaries. The nearest two occurrences (# 54 and # 23) of this species are within 1.5 miles of the proposed project site. One of these recorded occurrences (# 54), located to the west of the site, was observed in February of 1993; and the other recorded occurrence (# 23), located to the east of the site, was observed in 1996.

## **EFFECTS OF THE PROPOSED ACTION**

Although vernal pool fairy shrimp and vernal pool tadpole shrimp exhibit slightly differing habitat requirements and life cycles, they often inhabit the same vernal pool complexes and have been known to co-occur in individual vernal pools. These species are supported by similar habitat types, including vernal pools, seasonally ponded areas within vernal swales, rock outcrop ephemeral pools, playas, alkali flats, and other depressions that hold water of similar volume, depth, area, and duration. Therefore, both species are subject to a common set of threats and considerations.

Both vernal pool fairy shrimp and vernal pool tadpole shrimp have been documented to occur within the SSPA. Although no surveys have been done on the proposed project site, these species are known from other parcels within the SSPA. The project site is located in Unit 13 of the proposed critical habitat for vernal pool fairy shrimp and in Unit 8 of the proposed critical habitat for vernal pool tadpole shrimp. All of the vernal pools and seasonal wetlands on the proposed project site, however, provide appropriate habitat for both vernal pool fairy shrimp and



vernal pool tadpole shrimp. Because these species are known from other parcels within the SDCPA and vicinity, and it is likely the vernal pool crustaceans would disperse within the watershed between the project sites, the applicant assumes presence of vernal pool fairy shrimp and vernal pool tadpole shrimp in all suitable habitat on the proposed project site. Therefore, construction of the proposed project in any portion of the proposed project site that supports suitable habitat is likely to adversely affect populations of vernal pool fairy shrimp and vernal pool tadpole shrimp.

### **Direct Effects**

Direct effects are the immediate effects of the proposed project on the species or its habitat and include the effects of interrelated action and interdependent actions. Interrelated actions are those actions that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those actions that have not independent utility apart from the proposed action (50 CFR §402.02). Our analysis is based on the assumption that the proposed project will be implemented within two (2) calendar years of the date of the issuance of this biological opinion.

The proposed project would result in fill of 1.36 acres of suitable habitat that may be potentially occupied by vernal pool fairy shrimp and vernal pool tadpole shrimp. The Service considers an entire vernal pool or seasonal wetland to be directly affected when even a portion of it is filled or subject to similar direct affects.

### **Interrelated and Interdependent Actions**

Additional effects from interrelated and interdependent actions are expected from the proposed project. Approximately 115 acres of vernal pools are present in the entire Sunridge Specific Plan area (Foothill Associates 2004). The Corps issued a permit for the largest project in this area, the approximately 1,225-acre Sares-Regis property that included approximately 71 acres of vernal pools (Corps file number 190110021). This Corps permit authorized fill of approximately 27 acres of vernal pool crustacean habitat, and required the preservation of 44 acres of vernal pools within a 482-acre on-site preserve. With the exception of this preserve and a designated open space area along Laguna Creek near Grant Line Road, the Sunridge Specific Plan land use designations and zoning provide for urban land use throughout the plan's areas. Therefore, the majority of the remaining 44 acres of vernal pools outside the Sares-Regis property are expected to be filled for future urban development (Foothill Associates 2004).

Development of the SDCPA will require the extension of certain utilities and the enlargement of certain roads in areas outside of the SDCPA boundary. Utility improvements include the development of a well field, water supply lines, and water treatment facilities and sewer lines. Well locations have all been sited to avoid affects to aquatic habitats. The water treatment facility will be located on land permitted for take in the Anatolia project (Service file number 1-1-96-F-0062) within the SDCPA boundary. All offsite road improvements and the sewer and water lines will be constructed in existing rights-of-way with affects to aquatic resources totaling less than one-half of an acre (Foothill Associates 2004).

All infrastructure improvements are required to serve the already permitted Anatolia project. Affects resulting from offsite infrastructure development and road widening to Sunrise Boulevard from White Rock Road, to Pyramid Road, to Douglas Road from Sunrise Boulevard, and to Americanos Road, are covered under separate Nationwide14 Permits (Corps file number 200300697), which are currently in review by the Service. Two additional road improvement projects will be permitted under Phase I and will provide service to Anatolia and the remaining projects within the SDCPA. Jaeger Road, an existing two-lane, partially paved road, will be paved from Douglas Road south to Pyramid Road. Pyramid Road, an existing dirt road, will be improved from Sunrise Boulevard to Jaeger Road. The two road improvements will affect less than one-tenth an acre (Foothill Associates 2004).

Continuing development in southern Sacramento County requires the installation of supporting infrastructure, such as sewer interceptors. The proposed Laguna Creek Interceptor would carry waste from developments that are scheduled for the Laguna area. The exact route of the proposed Laguna Creek Interceptor is not known at this time; however the proposed project could have both direct and indirect effects on listed vernal pool crustaceans, and other listed species. The proposed Laguna Creek Interceptor, approximately 87,000 feet in length, would extend eastward from the Sacramento Regional Water Treatment Plant (SRWTP) to east of Sunrise Boulevard (SRCSD 2000). The proposed Laguna Creek Interceptor would service an area which extends northwest from the intersection of Bradshaw and Calvin Roads nearly to the intersection of White Rock and Scott Roads, including the entire proposed Sunrise-Douglas development. This proposed interceptor would also provide tie-ins for the future Deer Creek Interceptor, approximately 90,000 feet in length, which is proposed for construction between 2021 and 2032, and the Acrojet Interceptor, approximately 55,000 feet in length, which is proposed for construction between 2014 through 2033 (SRCSD 2000). These two interceptors would eventually service areas east of Grant Line Road and northeast of Sunrise Road, respectively. Construction for the proposed Laguna Creek Interceptor is proposed for 2010 through 2024.

These future projects may adversely affect several federally-listed species, including the vernal pool crustaceans, the giant garter snake (*Thamnophis gigas*), the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), the California tiger salamander, the California red-legged frog (*Rana aurora draytonii*), the delta smelt (*Hypomesus transpacificus*) and its designated critical habitat, and the slender and Sacramento Orcutt grasses.

Currently, a South Sacramento Habitat Conservation Plan (SSHCP) is being developed. So therefore, while development activities in south Sacramento County may negatively affect vernal pool crustaceans and other listed species and their habitats, if completed, the SSHCP may eventually ensure that development activities would avoid, minimize, and compensate for take of listed species to the greatest extent possible. The SSHCP would address the indirect affects of facilitated planned development that results from the interrelated and interdependent actions that result from the proposed project. At minimum, the SSHCP will address the Federal and State listed species known at this time that may be affected by actions that are reasonably foreseeable as a result of the proposed action. Additional HCP-covered species may be added as the HCP is being developed. The SSHCP will be coordinated with CDFG and will include any appropriate State listed species. The SSHCP will address actions that are within the land use authority of

Sacramento County and are reasonably foreseeable as a result of the proposed action, including land use approvals that are related to entitlements. Additional activities may be added as the SSHCP is developed. The SSHCP will cover a cumulative effects boundary area that is reasonably foreseeable as a result of the proposed project and the future projects.

### **Indirect Effects**

Vernal pool habitat indirectly affected includes all habitat supported by future destroyed upland areas and swales, and all habitat otherwise damaged by loss of watershed, human intrusion, introduced species, and pollution that will be caused by the project. The project will not result in any indirect effects. Vernal pool crustacean habitat within 250 feet of the proposed project boundaries to the north, west, and south could be indirectly impacted by the project. Habitat to the east is divided from the Project Site by a major roadway and therefore indirect impacts are not anticipated. Because lands to the north, west, and south are within the approved SDCP/SSPA, habitat in these areas would be directly removed and offset by adjacent proposed development. Therefore, separate Section 7 consultation will be initiated on lands adjacent to the project site and indirect impacts to these areas are expected to be offset through this process.

Erosion - The ground disturbing activities in the watershed of vernal pools associated with the proposed project action area are expected to result in siltation when pools fill during the wet season following construction. Siltation in pools supporting listed crustaceans may result in decreased cyst viability, decreased hatching success, and decreased survivorship among early life history stages, thereby reducing the number of mature adults in future wet seasons. The proposed project construction activities could result in increased sedimentation transport into vernal pool crustacean habitats during periods of heavy rains.

Changes in hydrology - The biota of vernal pools and swales can change when the hydrologic regime is altered (Bauder 1986, 1987). Survival of aquatic organisms like the vernal pool fairy shrimp and vernal pool tadpole shrimp are directly linked to the water regime of their habitat (Zelder 1987). Therefore, construction near vernal pool areas will, at times, result in the decline of local sub-populations of vernal pool organisms, including fairy shrimp and tadpole shrimp.

Introduction of non-natives - There is an increased risk of introducing weedy, non-native plants into the vernal pools both during and after project construction due to the soil disturbance from clearing and grubbing operations, and general vegetation disturbance associated with the use of heavy equipment.

Chemical contamination - The runoff from chemical contamination can kill listed species by poisoning. Oils and other hazardous materials associated with construction equipment could be conveyed into the vernal pool crustacean habitats by overland runoff during the rainy season, thereby adversely affected water quality. Many of these chemical compounds are thought to have adverse affects on all of the listed vernal pool crustaceans and/or their cysts. Individuals may be killed directly or suffer reduced fitness through physiological stress or a reduction in their food base due to the presence of these chemicals.

In addition to the adverse effects detailed above, the proposed project will contribute to a local and range-wide trend of habitat loss and degradation, the principal reasons that the vernal pool fairy shrimp and vernal pool tadpole shrimp have declined. The proposed project will contribute to the fragmentation and reduction of the acreage of the remaining listed vernal pool crustacean habitat located in south Sacramento County and throughout the range of these two listed vernal pool crustaceans.

### **Cumulative Effects**

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

A number of on-going and proposed projects could contribute to adverse affects to vernal pool crustaceans within Sacramento County, particularly in the vicinity of the proposed project. In most cases, however, these actions would be subject to Federal review and would, therefore, not be considered cumulative to the proposed project. For instance, several large highway and light rail construction, road improvement, water transfer, and utility and interceptor installation projects are currently planned or underway in south Sacramento County. These projects will contribute to the loss and degradation of habitats of listed species across their range, particularly in south Sacramento County. These activities may alter vernal pool crustacean habitats and can potentially harass, harm, injure, or kill these species. Because these activities have a Federal nexus, the Service will analyze these projects to determine if they will result in the jeopardy of federally-listed species and/or adverse modification and destruction of critical habitat for these species. An undetermined number of future projects that alter the habitat of vernal pool crustaceans, however, could go forward without the need for a Corps 404 permit. Activities that would potentially affect listed vernal pool crustaceans include development associated with urban, water, flood control, highway/roadway and utility projects, application of herbicides/pesticides, conversion to agricultural use, and indirect effects of adjacent development such as urban run-off altering the hydrologic regime.

The Service is aware of other projects currently under review by the State, County, and local authorities where biological surveys have documented the occurrence of federally-listed species. These projects include such actions as urban expansion, water transfer projects that may not have a Federal nexus, and continued agricultural development. The cumulative effects of these known actions pose a significant threat to the eventual recovery of these species. Because the vernal pool tadpole shrimp and vernal pool fairy shrimp are endemic to vernal pools in the Central Valley, coastal ranges, and a limited number of sites in the transverse range and Santa Rosa plateau of California, the Service anticipates that a wide range of activities will affect these species. Such activities include, but are not limited to: (1) urban development, (2) water projects, (3) flood control projects, (4) highway projects, (5) utility projects, (6) chemical contaminants, and (7) conversion of vernal pools to agricultural use. Many of these activities will be reviewed under section 7 of the Act as a result of the Federal nexus provided by section 404 of the Federal Water Pollution Control Act, as amended (Clean Water Act).

The proposed project is located in a region where future destruction and modification of vernal pool crustacean habitat is anticipated. Sacramento County will continue to develop within the County's sphere of influence. This development will result in increased direct loss of habitats for these listed species. Continued loss of these habitats throughout the region could conceivably affect the genetic diversity of the local population(s) of listed vernal pool crustaceans. Any loss of genetic diversity can have significant effects on a population's ability to respond to environmental change over time (Frankel and Soulé 1981). Within the proposed action area, the predominant types of non-federal actions that might affect the listed vernal pool crustaceans consist of residential and commercial development.

## **Conclusion**

After reviewing the current status of the vernal pool tadpole shrimp and vernal pool fairy shrimp, the environmental baseline for the area covered by this biological opinion, the effects of the proposed project, and the cumulative effects, it is the Service's biological opinion that the Anatolia IV project, as proposed, is not likely to jeopardize the continued existence of the vernal pool tadpole shrimp and vernal pool fairy shrimp. The proposed project is not located within designated critical habitat for the vernal pool fairy shrimp and vernal pool tadpole shrimp, and therefore, no destruction or adverse modification of critical habitat is anticipated.

## **INCIDENTAL TAKE STATEMENT**

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

**Amount or Extent of Take**

The Service anticipates incidental take of the vernal pool fairy shrimp and vernal pool tadpole shrimp will be difficult to detect or quantify. The cryptic nature of these species and their relatively small body size make the finding of a dead specimen unlikely. The species occur in habitats that make them difficult to detect. Due to the difficulty in quantifying the number of individuals that will be taken as a result of the proposed action, the Service is quantifying take incidental to the project as the number of acres of vernal pools/ponded depressions (vernal pool crustacean habitat) that will become unsuitable for vernal pool crustaceans due to direct or indirect effects as a result of the action. Therefore, the Service estimates that all vernal pool fairy shrimp and vernal pool tadpole shrimp inhabiting 1.36 acres of vernal pool habitat will become harassed, harmed, injured, or killed, as a result of the proposed action.

**Effect of the Take**

The Service has determined that this level of anticipated take is not likely to result in jeopardy to the vernal pool fairy shrimp or the vernal pool tadpole shrimp. This action will not result in destruction or adverse modification of critical habitat.

Upon implementation of the following reasonable and prudent measures, incidental take associated with the proposed project on the vernal pool fairy shrimp and vernal pool tadpole shrimp in the form of harm, harassment, and mortality in the form of habitat degradation will become exempt from the prohibitions described under section 9 of the Act for direct and indirect effects.

**Reasonable and Prudent Measures**

The Service has determined that the following reasonable and prudent measure is necessary and appropriate to minimize the effects of the proposed project on the vernal pool tadpole shrimp and vernal pool fairy shrimp.

1. Minimize the direct and indirect impacts to federally listed vernal pool crustaceans resulting from habitat modification and habitat loss in the Sunrise Douglas Community Plan Area.

**Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the Act, the Corps must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

1. The Corps shall fully implement the March 2004 map titled, "Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection" and the principles and standards outlined in the document titled, "June 2004 Conceptual



Strategy for Avoiding Minimizing and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area”, for this project.

2. The Corps shall assure all conservation measures as proposed by the project proponent in the September 8, 2004, *Anatolia IV Section 7 Biological Assessment*, and the October 13, 2004, and December 7, 2004, electronic mails from Foothill Associates to the Service, and identified by the Service in the project description of our biological opinion are fully implemented.
3. The Corps shall assure the following “Best Management Practices” are implemented during project construction:
  - a. The project proponent shall include a copy of this biological opinion within its solicitations for construction of the proposed project, making the prime contractor responsible for implementing all requirements and obligations included within the biological opinion, and to educate and inform all other contractors involved in the project as to the requirements of the biological opinion. The project proponents shall make the terms and conditions in this biological opinion a required item in all contracts for the project that are issued by the County to all contractors. The project proponents shall provide the Division Chief of Endangered Species (Central Valley) at the Sacramento Fish and Wildlife Office with a hardcopy of the contract(s) for this project at least ten (10) working days before it is accepted or awarded.
  - b. At least 30 calendar days prior to initiating construction activities, the project proponents shall submit the names and curriculum vitae of the biological monitor(s) for the project.
  - c. A Service-approved biologist must be on-site during all construction-related activities that occur within 250 feet of vernal pool crustacean habitat, and that could result in the take of these federally-listed species. The biologist will have the authority to halt any action that might result in take of listed species. If the biologist exercises this authority, the Service and the CDFG shall be notified by telephone and letter within one (1) working day.
  - d. A Worker Environmental Awareness Training Program for construction personnel shall be conducted before the commencement of construction. The program shall provide workers with information on their responsibilities with regard to the listed vernal pool crustaceans, an overview of the life-history of the species, information on take prohibitions, and an explanation of the relevant terms and conditions of this biological opinion. Written documentation of the training must be submitted to the Sacramento Fish and Wildlife Office within three (3) working days of the completion of instruction.
  - e. Prior to groundbreaking, high-visibility fencing that is at least 4 feet tall shall be placed along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto adjacent off-site habitat.

The fencing shall be established at a minimum distance of 250 feet from the edge of the vernal pools. Such fencing will be inspected by the on-site biologist at the beginning of each work day and maintained in good condition. The fencing may be removed only when the construction of the project is completed.

- f. During construction operations, the number of access routes, number and size of staging areas, and the total area of the proposed project activity will be limited to the minimum necessary. Routes and boundaries will be clearly demarcated. Movement of heavy equipment to and from the project site will be restricted to established roadways to minimize habitat disturbance, and all vehicle traffic on access road will observe a speed limit of 20 miles per hour. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the wetland avoidance areas. All fueling, cleaning, and maintenance of vehicles and other equipment will occur only within designated areas and at least 250 feet away from any wetland habitats. The applicant will ensure contamination of habitat does not occur during such operations. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately. Such spills will be reported in the post-construction compliance reports.
- g. To control erosion during and after implementation of the project, the applicant will implement best management practices (BMPs), as identified by the Central Valley Regional Water Quality Control Board. Erosion control measures and BMPs, which retain soil or sediment, runoff from dust control, and hazardous materials on the construction site and prevent these from entering the vernal pool complexes, will be placed, monitored, and maintained throughout the construction operations. These measures and BMPs may include, but are not limited to, silt fencing, sterile hay bales, vegetative strips, hydroseeding, and temporary sediment disposal. The Stormwater Pollution Prevention Plan (SWPPP) described in the Description of the Proposed Action section of this Biological Opinion shall include these and any other measures necessary to prevent the discharge of contaminated runoff onto adjacent offsite wetland habitats.
- h. All heavy equipment, vehicles, and supplies will be stored at the designated staging area at the end of each work period. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the open space/wetland preserve and offsite wetland avoidance areas. Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. All fueling, cleaning, maintenance, and staging of vehicles and other equipment will occur only within designated areas and at least 250 feet away from the open space/wetland preserve and any off-site vernal pool crustacean habitats. All machinery will be properly maintained and cleaned to prevent spills and leaks. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill

occur. Any spills or hazardous materials will be cleaned up immediately in accordance with applicable local, state and/or federal regulations. Such spills will be reported in the post-construction compliance reports.

- i. No clearing of vegetation and scraping, or digging, of soil in the avoided/preserve area.
5. The Corps shall ensure the applicant complies with the *Reporting Requirements* of this biological opinion.
6. The applicant has proposed to offset direct and/or indirect effects of vernal pool crustacean habitat loss through habitat preservation offsite. Prior to any fill of wetlands on the proposed project site, credits commensurate with acreage commitment shall be dedicated within a Service-approved habitat preservation bank and documentation provided to the Service. If the applicant chooses not to use an approved preservation bank, then at least 120 days prior to construction, the applicant shall submit documentation of the preservation habitat including conservation easement, management plan, funding instrument, easement holder etc. for our approval.
7. The applicant has proposed to offset direct and/or indirect effects of vernal pool crustacean habitat through habitat restoration or creation. Prior to any fill of wetlands on the proposed project site, credits commensurate with acreage commitment shall be dedicated within a Service-approved habitat restoration/creation bank. If the applicant chooses not to use an approved creation/restoration bank, then at least 120 days prior to construction, the applicant shall submit documentation of the creation/restoration habitat including: construction plan, conservation easement, management plan, funding instrument, easement holder etc. for our approval. The following criteria will be used by the Service when approving a restoration/creation site:
- a. The restoration site's soils will be appropriate vernal pool soil types (e.g., San Joaquin, Redding, Corning);
  - b. The restoration site's soil would have been disturbed at some point in the past, either through land leveling, ditching and draining, berming, or other disturbance that has removed or modified edaphic and hydrologic features necessary to support vernal pool habitat; and
  - c. The restoration site will have a Service-approved conservation easement, a preserve management plan, and a long-term funding mechanism in place upon Service approval.

### **Reporting Requirements**

A post-construction compliance report prepared by the monitoring biologists must be submitted to the Chief of the Endangered Species Division (Central Valley) at the Sacramento Fish and Wildlife Office within thirty (30) calendar days of the completion of construction activity or within thirty (30) calendar days of any break in construction activity lasting more than thirty (30) calendar days. This report shall detail (i) dates that groundbreaking at the project started and the project was completed; (ii) pertinent information concerning the success of the project in meeting

compensation and other conservation measures; (iii) an explanation of failure to meet such measures, if any; (iv) known project effects on the giant garter snake and the valley elderberry longhorn beetle, if any; (v) occurrences of incidental take of any these species; and (vi) other pertinent information.

The project applicant must report to the Service immediately any information about take or suspected take of federally-listed species not authorized in this biological opinion. The project applicant must notify the Service within 24 hours of receiving such information. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal. The Service contact is the Resident Agent-in-charge of the Service's Law Enforcement Division at (916) 414-6660.

Any contractor or employee, who during routine operations and maintenance activities, inadvertently kills or injures a federally-listed species must immediately report the incident to their representative. This representative must contact the California Department of Fish and Game immediately in the case of a dead or injured listed species. The California Department of Fish and Game contact for immediate assistance is State Dispatch at (916) 445-0045.

#### **CONSERVATION RECOMMENDATIONS**

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases. The Service recommends the following conservation measures:

1. The Corps should work with the Service to address significant, unavoidable environmental effects resulting from projects proposed by non-Federal parties.
2. As recovery plans for listed vernal pool crustacean species are developed, the Corps should assist the Service in their implementation.
3. The Corps should work with the Service to ensure that its wetland delineation techniques fully assess the affects of proposed projects on listed vernal pool crustacean species.
4. The Corps, in partnership with the Service, should develop maintenance guidelines for the Corps projects that will reduce adverse effects of routine maintenance on vernal pool crustaceans and their habitats. Such action may contribute to the delisting and recovery of the species by preventing degradation of existing habitat and increasing the amount and stability of suitable habitat.
5. The Corps should conduct a study of cumulative loss of wetlands habitat, including habitat of listed crustaceans, in Sacramento County.


In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

#### REINITIATION—CLOSING STATEMENT

This concludes formal consultation on the proposed Anatolia IV project. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or, (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding the proposed Anatolia IV project, please contact me at (916) 414-6700

Sincerely,

  
for Wayne S. White  
Field Supervisor

cc:

ARD (ES), Portland, OR

Ms. Terry Roscoe, California Dept. of Fish and Game, Rancho Cordova, CA

Ms. Elizabeth Goldman, Environmental Protection Agency, San Francisco, CA

Enclosures:

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Addresses:

ARD (ES), Portland, Oregon

Ms. Terry Roscoe  
California Dept. of Fish and Game, Region 2  
1701 Nimbus Road  
Rancho Cordova, California 95670

Ms. Elizabeth Goldman  
U.S. Environmental Protection Agency- Region IX  
75 Hawthorne Street  
San Francisco, California 94105

# **A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area**

June 2004

In March through May 2004, representatives of the US Fish and Wildlife Service, US Environmental Protection Agency, and the US Army Corps Engineers (Agencies) met to formulate a conceptual-level strategy for avoiding, minimizing, and preserving aquatic resource habitat in the Sunrise-Douglas Community Plan Area (SDCPA). The intended result of this effort was to achieve reasonable protection and conservation of federally threatened and endangered species under the Endangered Species Act, while taking a regional approach to avoidance and minimization of impacts to waters of the US, including wetlands, in accordance with Section 404 (b)(1) guidelines under the Clean Water Act. The strategy also endeavors to ensure a viable South Sacramento County Habitat Conservation Plan (HCP) can be developed, given that a large proportion of vernal pool habitat under consideration by the HCP planners is at risk in the SDCPA.

The conceptual-level strategy is represented by preserve areas shown on the map titled Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection dated March 2004 (see attached). To meet the goals of ESA and the Clean Water Act, the Agencies arrived at the boundaries of the "Preserve Areas" based on best professional judgment and a limited amount of information regarding regional and site-specific biology and hydro-geomorphology (such as wetland delineations, species accounts, and environmental impact reports), while recognizing that development is planned in the area. Of particular focus is the preservation of vernal pool complexes and corridors for Morrison Creek and Laguna Creek. The mapped boundaries are the smallest that would be acceptable to the Agencies and are predicated on ten principles and standards that would be followed by developers and planners as each element of the overall development proceeds.

The conceptual level strategy should be used by developers and planners to design and plan projects in the SDCPA. The Agencies will use the strategy to aid in the review of proposed development and evaluate the probable individual and cumulative effects on aquatic resources and sensitive species.

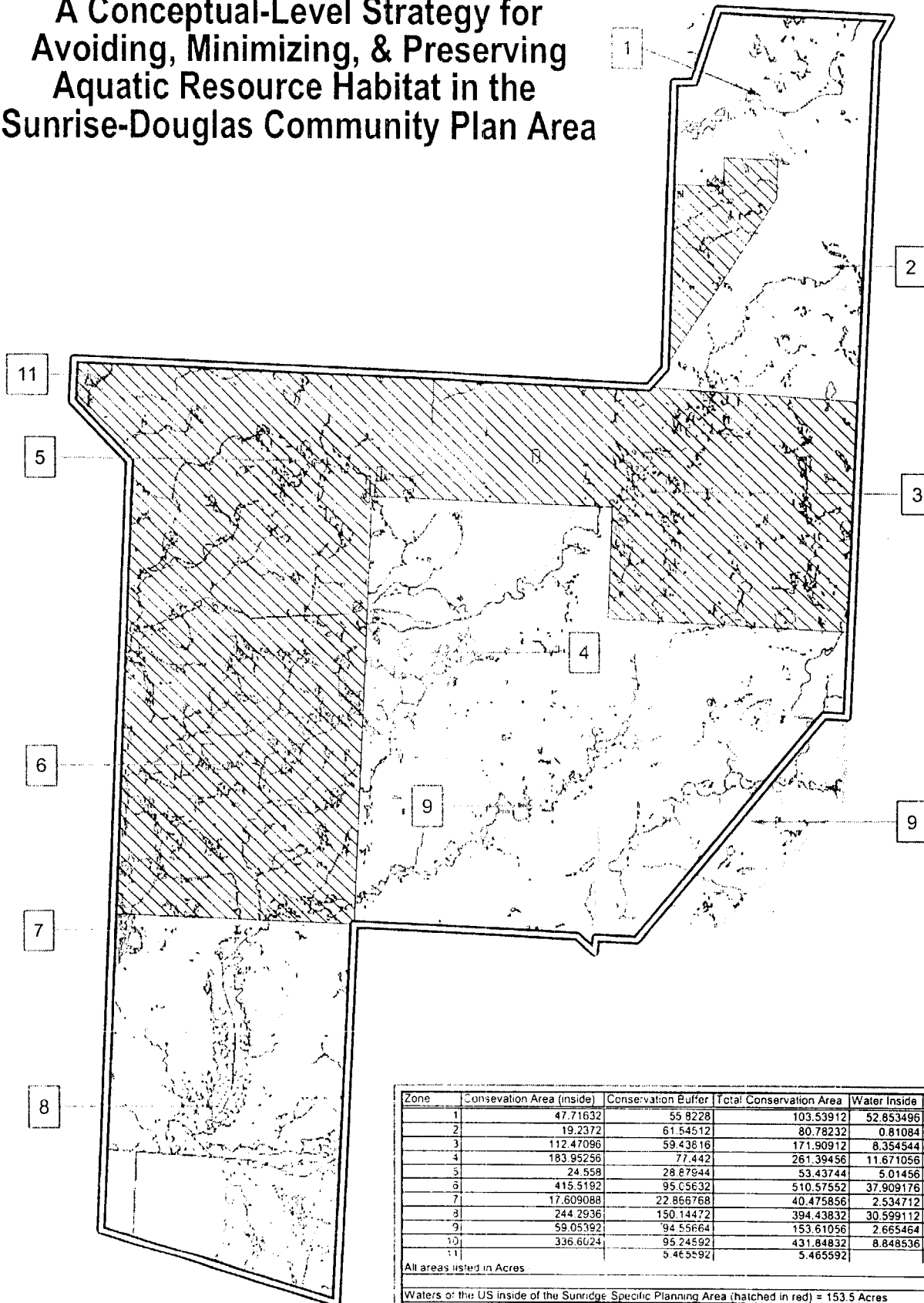
The Agencies anticipate that permit decisions and biological opinions will be completed on a case-by-case basis, using site-specific project and aquatic resource habitat information. Each proposed project would be evaluated on its own merits within the larger context of the SDCPA. Depending on the particular hydrology, habitat features, and development plans for a particular parcel, the conceptual preserve boundaries may need to be adjusted to minimize direct and indirect impacts to aquatic resources. Appropriate compensatory mitigation will be developed following demonstrated avoidance and minimization of project impacts.

## **Strategy Principles and Standards:**

1. Maintain natural (existing) watershed integrity and flows to downstream reaches (distribution, frequency and duration), including restricting summer nuisance flows.
2. Maintain corridors and large areas for wildlife and the propagation of flora. Preserve vernal pool hydrology and integrity to benefit listed plants and invertebrates. Establish interconnected conservation areas that are managed in perpetuity and tie into existing local and regional planning efforts. Provide for meaningful conservation of sensitive plant habitats for species integrity and long-term survival.

3. Manage stormwater to retain the natural flow regime and water quality including not altering baseline flows in the receiving waters, not allowing untreated discharges to occur into existing aquatic resources, and not using existing aquatic resources for detention or transport of flows above current hydrology, duration, and frequency. All stormwater flows generated on-site and entering preserve boundaries would be pre-treated to reduce oil, sediment, and other contaminants.
4. Use elevated roads, arched crossings and other practices for transportation corridors that must traverse Preserve Areas to minimize direct and indirect impacts to aquatic resources and maintain the integrity of Preserve Areas. Hydrologic and biologic functions and values of the Preserve Areas would not be significantly impacted by road crossings.
5. Use conservation design elements. These elements include construction techniques such as using single-loaded roads where housing abuts Preserve Areas, designing roadside landscaping to drain (surface and subsurface) toward urban features and not toward the preserve boundary, and orienting houses such that the front living area faces the Preserve Area. Fences would be low and not restrict visibility into the Preserve Area. Impervious surfaces would be minimized. Stormwater/water runoff plans would be designed to maintain watershed integrity by employing such means as vegetated swales, infiltration trenches, and constructed wetland filter strips to treat stormwater and water runoff from the large increases in impervious surfaces.
6. Locate compatible land uses next to preserves. Acceptable land uses include parks, hiking trails, athletic fields, and other forms of open space. Developed trails would be outside the preserve boundary. Any irrigated fields or landscaping must not drain toward preserves. Cut and fill activities adjacent to the preserve boundaries would be minimized.
7. Mow-only firebreaks may be located at the outer edges of Preserve Areas. Mowing within the Preserve Areas should be conducted consistent with achieving the goals of the preserve management plan, including promoting native/discouraging non-native species. Firebreaks that necessitate herbicide application or tilling, plowing or other soil disturbance would be located outside of the Preserve Areas.
8. Ensure Preservation Areas are protected in perpetuity. This includes establishing buffers and not locating lot lines within the preserve boundary. Areas would be protected in perpetuity through conservation easement that is adequately funded for maintenance and managed by a conservation-oriented third-party. Preserve Areas would be fenced and signed.
9. Implement mitigation measures (avoidance, minimization, and compensation) that adequately offset direct and indirect impacts to aquatic resources and listed species. In general, establishing the Preserve Areas is considered a regional measure to achieve impact avoidance and minimization. Vernal pools that are directly impacted by projects should be mitigated at ratios equal to or greater than 2:1 for preservation and 1:1 for creation/restoration. Vernal pools indirectly affected should be mitigated at ratios equal to or greater than 1:1 for preservation and 1:1 for creation/restoration. Preservation and creation/restoration will generally be completed in the same watershed but not within, or in a way that would affect, existing wetland complexes. On a case-by-case basis, preservation credit may be given for vernal pools in the Preserve Areas (except for the 250-foot wide indirect impact zone). Excellent opportunities exist in or near the SDCPA for the establishment of a vernal pool conservation bank(s) and a wetland compensatory (i.e., restoration/creation) mitigation bank(s).
10. Recognize the realities and constraints placed on construction design due to infrastructure and market-driven forces.

# A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area



Zone	Conservation Area (inside)	Conservation Buffer	Total Conservation Area	Water Inside	Water Buffer	Water Total
1	47.71632	55.8228	103.53912	52.853496	1.840584	54.69408
2	19.2372	61.54512	80.78232	0.81084	1.897824	2.708664
3	112.47096	59.43816	171.90912	8.354544	3.8868504	12.2413944
4	183.95256	77.442	261.39456	11.671056	2.559408	14.230464
5	24.558	28.87944	53.43744	5.01456	0.858792	5.873352
6	415.5192	95.05632	510.57552	37.909176	8.056104	45.96528
7	17.609088	22.866768	40.475856	2.534712	3.708096	6.242808
8	244.2936	150.14472	394.43832	30.599112	11.204736	41.803848
9	59.05392	94.55664	153.61056	2.665464	2.604624	5.270088
10	336.6024	95.24592	431.84832	8.848536	2.31948	11.168016
11		5.465592	5.465592		2.511072	2.511072

All areas listed in Acres

Waters of the US inside of the Sunrise Specific Planning Area (hatched in red) = 153.5 Acres

Waters of the US within the preserve areas inside of the Sunrise Specific Planning Area (hatched in red) = 68.56 Acres

Sources: Foster Associates,  
Esora Consulting and USGS  
Projection: Region 8 Albers

0 1,000 2,000 3,000 4,000  
Feet







## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825-1846



In reply refer to:  
1-1-02-F-0357

DEC 22 2004

Mr. Justin Cutler  
Chief, Sacramento Office  
U.S. Army Corps of Engineers District, Sacramento  
1325 J Street  
Sacramento, California 95814-29223

DEC 28 2004

Subject: Section 7 Consultation for the Proposed Sunridge Village J Project [Corps file number 200100230], Sacramento County, California

Dear Mr. Cutler:

This is in response to the U.S. Army Corps of Engineers' (Corps) request for formal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Sunridge Village J project (proposed project) in Sacramento County, California. Your February 2, 2002, request was received in our office on February 7, 2002. This document represents the Service's biological opinion on the effects of the action on the federally endangered vernal pool tadpole shrimp (*Lepidurus packardii*) and the federally threatened vernal pool fairy shrimp (*Branchinecta lynchei*) (vernal pool crustaceans), in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act). In a March 24, 2004, letter to the Service, you requested formal consultation on the federally threatened California tiger salamander (*Ambystoma californiense*). The proposed Sunridge Village J project site and the entire Sunridge Specific Plan are outside of the range of the California tiger salamander. Therefore, the proposed project will not affect the California tiger salamander.

The findings and recommendations in this consultation are based on: (1) letters from Foothill Associates to the Service, dated September 21, October 14, and November 2, 2004; (2) the *Sunrise Village J Section 7 Biological Assessment* (Biological Assessment) dated January 6, 2004, prepared by Foothill Associates; (3) a February 5, 2002, letter from Corps to the Service requesting initiation of formal consultation on proposed project; (4) site visits; (5) meetings, electronic mail (email) correspondence, and telephone conversations between representatives of the Service, Corps, Cresleigh Homes, and Foothill Associates (consultant); and (6) other information available to the Service.

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## Consultation History

Beginning on May 10, 2002, the Planning Department of the County of Sacramento initiated and facilitated a series of meetings to discuss and develop potential wetlands and endangered species permitting strategies for the Sunrise Douglas Community Planning Area (SDCPA). These meetings were attended by landowners, developers, and their representatives, staff from Congressman Doug Ose's office, California Department of Fish and Game, the Service, Department of Army-Corps of Engineers (Corps), and the Environmental Protection Agency (EPA). The entire group met at least twelve times between May 10th and November 22, 2002, in an attempt to develop a strategy to address issues relating to endangered species and wetland protection within the SDCPA. By November of 2002, a resolution was not reached and discussions ceased at that time.

On July 17, 2002, during this initial phase of meetings, the Sacramento County Board of Supervisors approved both the larger SDCPA and the SunRidge Specific Plan. On July 1, 2003, with the incorporation of the City of Rancho Cordova ("City"), the SDCPA came under the City's land use jurisdiction.

A smaller group of project proponents representing the property owners in the Sun Ridge Specific plan area initiated several meetings with the Fish and Wildlife Service during mid 2003. Discussions focused on avoidance of endangered species habitats in the SDCPA and specific plan areas. Again, no resolution with the Service was reached.

In March 2004, Congressman Doug Ose initiated meetings with the Federal Agencies, local agencies, and the landowners/developer representatives to facilitate resolution of the issues that had emerged during the previous meetings. Congressman Ose urged the Federal Agencies to develop a conceptual strategy that would meet the requirements of the Federal Agencies respective statutes. Congressman Ose urged the regulated parties to work cooperatively with the Federal agencies to explore mechanisms to accommodate the agencies' obligations to comply fully with pertinent federal laws and regulations, which place a premium on the avoidance of on-site wetlands resources to the extent practicable and the need to avoid jeopardizing the continued existence of threatened and endangered species. In short, the Congressman encouraged the parties to work cooperatively with one another to develop a conceptual onsite avoidance and offsite compensation strategy that reached a proper and workable balance between and amongst the following: the mandates of federal law; the need to preserve ecosystem integrity and the habitat of endangered and threatened species; the need to acknowledge the planning policies and objectives of the City of Rancho Cordova; and the need to account for the economic realities facing private sector developers. These meetings continued through September 2004.

In June of 2004 the Federal agencies developed two documents ("A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area"; and the accompanying planning map) that outline our strategies for conserving threatened and endangered species and wetland habitats and to provide a framework for development proposals. In addition, our strategy would provide some conceptual guidelines for permitting.

Service Correspondence

April 2, 1996, To: A. Champ-Corps of Engineers, Re: Formal Section 7 Consultation on Issuance of 404 Permit for the Sunrise Douglas Project (AKA Anatolia I, II, III), Service File #1-1-96-F-0062, Corps PN 190110021

November 22, 2002, To: M. Finan-Corps of Engineers, Re: Request for additional information on the Sunridge Specific Plan/Sunrise Douglas Community Plan, Service file #1-1-03-I-0411

July 18, 2002, To: D. Nottoli-Sacramento County Board of Supervisors, Re: Sunrise Douglas Community Plan and SunRidge Specific Plan-Service File # 1-1-02-CP-2579

April 26, 2004, To: Col. Conrad-Corps of Engineers, Re: SunRidge Specific Plan, Service file #/Corps PN 200000336

Consultation History Specific to the Proposed Project

September 21, 2004. Foothill Associates submitted a letter to the Service, providing proposed conservation measures for the vernal pool crustacean habitat that would be directly and indirectly affected by the proposed project. The Service received this letter on September 27, 2004.

October 7, 2004. Representatives of the Service and Foothill Associates met to discuss the effects of and the conservation measures for the proposed project.

October 14, 2004. Foothill Associates submitted a letter to the Service, updating the quantification of effects of the proposed project on vernal pool crustacean habitat, as well as the proposed conservation measures. The Service received this on October 14, 2004.

November 2, 2004. Foothill Associates submitted a letter to the Service, providing comments to the draft biological opinion on the proposed project. The Service received this letter on November 3, 2004.

**BIOLOGICAL OPINION**

**Description of the Proposed Action**

The following is taken from the document titled *A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area*, prepared by the Service, the Corps, and the EPA (enclosed). This document and the accompanying planning map developed by the three Federal agencies are hereby incorporated by reference into the project description. Thus, our biological opinion on this proposed action, the Sunridge Village J project, is based on application and full implementation of the Federal agencies conservation strategy outlined in this document and map, on all future projects in the SDCPA.

“In March through May 2004, representatives of the US Fish and Wildlife Service, US Environmental Protection Agency, and the US Army Corps Engineers (Agencies) met to formulate a conceptual-level strategy for avoiding, minimizing, and preserving aquatic resource habitat in the Sunrise-Douglas Community Plan Area (SDCPA). The intended result of this effort was to achieve reasonable protection and conservation of federally threatened and endangered species under the Endangered Species Act, while taking a regional approach to avoidance and minimization of impacts to waters of the US, including wetlands, in accordance with Section 404 (b)(1) guidelines under the Clean Water Act. The strategy also endeavors to ensure a viable South Sacramento County Habitat Conservation Plan (HCP) can be developed, given that a large proportion of vernal pool habitat under consideration by the HCP planners is at risk in the SDCPA.

The conceptual-level strategy is represented by preserve areas shown on the map titled Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection dated March 2004 (see attached). To meet the goals of ESA and the Clean Water Act, the Agencies arrived at the boundaries of the “Preserve Areas” based on best professional judgment and a limited amount of information regarding regional and site-specific biology and hydro-geomorphology (such as wetland delineations, species accounts, and environmental impact reports), while recognizing that development is planned in the area. Of particular focus is the preservation of vernal pool complexes and corridors for Morrison Creek and Laguna Creek. The mapped boundaries are the smallest that would be acceptable to the Agencies and are predicated on ten principles and standards that would be followed by developers and planners as each element of the overall development proceeds.

The conceptual level strategy should be used by developers and planners to design and plan projects in the SDCPA. The Agencies will use the strategy to aid in the review of proposed development and evaluate the probable individual and cumulative effects on aquatic resources and sensitive species.

The Agencies anticipate that permit decisions and biological opinions will be completed on a case-by-case basis, using site-specific project and aquatic resource habitat information. Each proposed project would be evaluated on its own merits within the larger context of the SDCPA. Depending on the particular hydrology, habitat features, and development plans for a particular parcel, the conceptual preserve boundaries may need to be adjusted to minimize direct and indirect impacts to aquatic resources. Appropriate compensatory mitigation will be developed following demonstrated avoidance and minimization of project impacts.”

The approximately 81.8-acre proposed Sunridge Village J development site is located in southeastern Sacramento County, approximately five miles south of Highway 50, east of Sunrise Boulevard and the Folsom South Canal, and north of Jackson Road (Highway 16), in the City of

Rancho Cordova. The proposed project site is situated south of and adjacent to Douglas Road, east of and adjacent to Jaeger Road, and north of the proposed Pyramid Road. The site is located in portions of Sections 9 and 16 of Township 8 North, Range 7 East, as shown on the U.S. Geological Survey's (USGS) Buffalo Creek 7.5-minute quadrangle.

The proposed project site is within the 6,042-acre SDCPA located within the Sacramento County General Plan Urban Service Boundary and Policy Area. As shown on the September 2004 Developers Map, the proposed project site is also located within the Sunridge Specific Plan area, which provides a more detailed land use plan for development of approximately 2,632 acres within the SDCPA. The SDCPA is located within the headwaters of both the Morrison Creek and Laguna Creek watersheds.

Historically, the SDCPA, including the proposed project site, has been used for dry land farming and grazing. The surrounding land use is predominantly grassland utilized for cattle grazing and related agricultural activities. A few homesteads, including rural residences, barns, and pens, are scattered around this area.

The proposed Sunridge Village J project involves the construction of approximately 346 single-family residential lots, a five-acre neighborhood park, and a landscape corridor along the north and west property boundaries. Required infrastructure (*e.g.*, sewer mains and laterals, water mains, and utility lines) will be developed in association with surrounding projects within the Sunridge Specific Plan area. The proposed land uses for the proposed project site are consistent with the planned land uses set forth in the Sunrise Douglas Community Plan and Sunridge Specific Plan.

The proposed project will adversely affect approximately 2.49 acres of habitat for vernal pool crustaceans. A total of 1.88 acres of vernal pools and 0.22 acre of seasonal wetlands will be directly affected by the proposed project and a total of 0.36 acre of vernal pools and 0.03 acre of seasonal wetlands would be indirectly affected by the proposed project.

It should be noted that the acreages of vernal pool habitat on the proposed project site have fluctuated between documents provided to the Service (see Foothill Associate 2004a, b). These variations can be accounted for by examining the different analyses and assumptions of wetland verification. For example, the Biological Assessment (Foothill Associates 2004a) considered that all depressional seasonal wetlands (potential vernal pool crustacean habitat) extending onto adjacent properties to the east, south, and west would be indirectly affected by the proposed project. Subsequently, the Service indicated that directly and indirectly vernal pool crustacean habitat within the Sunridge Specific Plan (*e.g.*, DJ Enterprises to the west and Sunridge Park to the east) would be addressed through separate section 7 consultations but that directly and indirectly affected vernal pool crustacean habitat extending onto the Sunridge 530 property to the south, which is outside of the Sunridge Specific Plan, would be addressed under the consultation for the proposed project. This approach has been confirmed in recent correspondence from Foothill Associates (2004c), which indicated that the proposed project would directly affect 2.10 acres and indirectly affect 0.39 acres of vernal pool crustacean habitat.

## **Proposed Conservation Measures**

The applicant, Cresleigh Homes, has proposed conservation measures to avoid, minimize, and compensate for effects to vernal pool fairy shrimp and vernal pool tadpole shrimp that result from the implementation of the proposed project.

### **1. Habitat Preservation and Restoration**

- a. Direct effects to 2.10 acres of vernal pool crustacean habitat will be offset through habitat preservation (refer to Tables 1 and 2). Habitat preservation will be achieved through the preservation of four (4) acres of vernal pool habitat for every acre of vernal pool habitat that is directly affected at the Bryte Ranch Conservation Bank, totaling 8.40 acres.
- b. Direct effects to vernal pool crustacean habitat will be further offset through habitat restoration/creation at a 1:1 ratio (refer to Tables 1 and 2). The restoration/creation goal will be to create and enhance wetlands with habitat functions and values equal to, or greater than, the wetland features affected by the implementation of the proposed project. Habitat creation/restoration will be achieved through the restoration of 2.10 acres of vernal pool crustacean habitat at a Service-approved site within Sacramento County that meets the following criteria:
  1. The restoration site's soils will be appropriate vernal pool soil types (*e.g.*, San Joaquin, Redding, Corning);
  2. The restoration site's soil would have been disturbed at some point in the past, either through land leveling, ditching and draining, berming, or other disturbance that has removed or modified edaphic and hydrologic features necessary to support vernal pool habitat; and
  3. The restoration site will have a conservation easement, a preserve management plan, and a long-term funding mechanism in place upon Service approval.
- c. Indirect effects to 0.39 acres of vernal pool crustacean habitat will be offset through habitat preservation (refer to Tables 1 and 2). The Service considers vernal pool habitat located within 250 feet of construction activities to be indirectly affected. Vernal pool crustacean habitat located within 250 feet of the northern and western boundaries of the proposed project site is separated from the proposed project site by two major roadways that act as hydrologic barriers, and, therefore, indirect effects to habitat in these areas are not anticipated. Vernal pool crustacean habitat within 250 feet of the eastern boundary of the site is located on the proposed Sunridge Park project site; project-related effects to this vernal pool



habitat are being reviewed under a separate section 7 consultation by the Service. Vernal pool crustacean habitat within 250 feet of the southern boundary of the proposed project site, however, will be indirectly affected by construction activities associated with the implementation of the proposed project. The applicant has proposed to offset indirect affects to vernal pool crustacean habitat located within 250 feet of the southern and eastern boundaries of the proposed project site through habitat preservation. Habitat preservation will be achieved through the preservation of four (4) acres of vernal pool habitat for every acre of vernal pool habitat that is directly affected at the Bryte Ranch Conservation Bank, totaling 1.56 acres.

**Table 1 – Vernal Pool Crustacean Habitat Effects and Compensation Acreages if Credits Purchased at Bryte Ranch Conservation Bank**

<b>Type</b>	<b>Acres of Direct Effects</b>	<b>Acres of Indirect Effects</b>	<b>4:1 Preservation Compensation (in acres)</b>	<b>1:1 Creation Compensation (in acres)</b>
Seasonal Wetland	0.22	0.03	1.00	0.22
Vernal Pool	1.88	0.36	8.96	1.88
<b>TOTAL</b>	<b>2.10</b>	<b>0.39</b>	<b>9.96</b>	<b>2.10</b>

2. Construction Storm Water Pollution Prevention Plan

- a. Minimize off-site stormwater runoff that might otherwise affect surrounding vernal pool crustacean habitat. Measures, which will be implemented during project construction to avoid adverse affects to the open space/wetland preserve and adjacent properties, include the following:
- b. Incorporate standard construction Best Management Practices (BMPs) into construction designs, plans and specifications. Contractors will be required to implement them during construction.
- c. Prepare a Storm Water Pollution Prevention Plan (SWPPP) for the proposed project with the following objectives:
  - i. Identify pollutant sources, including sources of sediment, that may affect the quality of storm water discharges from the construction of the proposed project;
  - ii. Identify BMPs to reduce or eliminate pollutants in storm water discharges and authorized non-storm water discharges from the proposed project site during construction;
  - iii. Outline and provide guidance for BMP monitoring;

- iv. Identify project discharge points and receiving waters;
  - v. Address post-construction BMP implementation and monitoring; and
  - vi. Address sediment / siltation / turbidity and non-visually detectable pollutant monitoring, and outline a sampling and analysis strategy.
- d. The construction BMPS for the proposed project will include the following specific measures for avoiding adverse impacts to the open space preserve and adjacent properties:
- i. Hydroseeding: All constructed slopes adjacent to the preserve will be hydroseeded with a native grassland mix. The hydroseed mix will be applied with a tackifying agent at a rate of at least two tons/acre and based on manufacturer's recommendations. The tackifying agent will be a hydraulic matrix that when applied, and upon drying, adheres to the soil to form a 100% cover that is biodegradable, promotes vegetation, and prevents soil erosion. The hydroseed mix will not be applied before, during, or immediately after rainfall so that the matrix will have an opportunity to dry for a minimum of 24 hours after installation.
  - ii. Sediment and Erosion Control: Certified weed-free straw wattles will be installed at the base of all slopes along the property lines of the proposed project site. The existing Jaeger Road currently provides additional erosion and sediment control to the west. Road improvement projects will be subject to a SWPPP and BMP monitoring. Prior to installation of the straw wattles, a concave key trench approximately two to four inches deep will be contoured along the proposed installation route. Soil excavated for the trenching will be placed on the uphill or flow side of the straw wattles to prevent water from undercutting the straw wattles. Stakes will be driven in on alternating sides of the straw wattles, to hold them in place. The straw wattles will be maintained for a period of time at least until the native grassland vegetation is fully established and the soil is stabilized.
  - iii. Excavated Material: During construction activities associated with the implementation of the proposed project, all excavated materials will be deposited or stored such that this material cannot be washed into any watercourse, and excess supplies of certified weed-free straw bales and/or sedimentation fencing will be available at the construction site for periodic site-specific use as needed.
  - iv. Staging Areas: Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. All machinery will be properly maintained and cleaned to prevent spills and leaks. All

workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately in accordance with applicable local, state and/or federal regulations. Such spills will be reported in the post-construction compliance reports.

- v. Construction Fencing: Temporary fencing will be installed prior to construction along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto adjacent off-site habitat.
- vi. Construction Monitoring: A Service-approved environmental monitor will be employed to ensure compliance with construction-related avoidance measures. The monitor will report directly to the City of Rancho Cordova Public Works project manager, and based on reports of non-compliance with environmental requirements, will be authorized to stop work orders and to take actions necessary to prevent damage to off-site habitat. Monitoring reports will be provided to the City of Rancho Cordova Department of Public Works project manager on a daily basis during initial ground breaking, and on a weekly basis (or more frequently as needed when problems arise) thereafter until construction is finished.

### Status of the Species

#### *Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp*

The vernal pool tadpole shrimp and vernal pool fairy shrimp were listed as endangered and threatened, respectively, on September 19, 1994. Final critical habitat was designated for these species on August 6, 2003 (68 FR 46684). Complete descriptions of these species are found in 59 FR 48136, the final rule listing these species under the Act. These crustaceans are restricted to vernal pools and swales and other seasonal aquatic habitats in California. Eng *et al.* (1990), Simovich *et al.* (1992), and (Service 1994) provide further details about their life history and ecology. The Service did not designate any critical habitat for the vernal pool crustaceans in Sacramento County. Although the Service designated critical habitat for the vernal pool fairy shrimp in San Joaquin County, none will be affected by the proposed project.

**Life History.** *Vernal pool tadpole shrimp.* The vernal pool tadpole shrimp has dorsal compound eyes, a large shield-like carapace that covers most of its body, and a pair of long cercopods at the end of its last abdominal segment (Linder 1952, Longhurst 1955, Pennak 1989). It is primarily a benthic animal that swims with its legs down. Its diet consists of organic detritus and living organisms, such as fairy shrimp and other invertebrates (Pennak 1989). The females deposit their eggs on vegetation and other objects on the pool bottom. Tadpole shrimp eggs are known as cysts during the summer, when they lie dormant in the dry pool sediments (Lanaway 1974, Ahl 1991).

The life history of the vernal pool tadpole shrimp is linked to the environmental characteristics of its vernal pool habitat. After winter rains fill the pools, the populations are re-established from dormant cysts. A portion of the cysts hatch immediately and the rest remain dormant in the soil to hatch during later rainy seasons (Ahl 1991). The vernal pool tadpole shrimp is a relatively long-lived species (Ahl 1991). Adults are often present and reproductive until the pools dry up in the spring (Ahl 1991, Simovich *et al.* 1992).

*Vernal pool fairy shrimp.* Vernal pool fairy shrimp have delicate elongate bodies, large stalked compound eyes, no carapace, and 11 pairs of swimming legs. They swim or glide gracefully upside-down by means of complex, wavelike beating movements. Fairy shrimp feed on algae, bacteria, protozoa, rotifers, and detritus. The females carry eggs in an oval or elongate ventral brood sac. The eggs are either dropped to the pool bottom or remain in the brood sac until the female dies and sinks. The dormant cysts are capable of withstanding heat, cold, and prolonged desiccation. When the pools refill in the same or subsequent seasons, some, but not all, of the cysts may hatch. The cyst bank in the soil may therefore be comprised of cysts from several years of breeding (Donald 1983). The early stages of the fairy shrimp develop rapidly into adults. The vernal pool fairy shrimp can mature quickly, allowing populations to persist in short-lived shallow pools (Simovich *et al.* 1992).

**Distribution.** *Vernal pool tadpole shrimp.* The vernal pool tadpole shrimp is known from 168 occurrences in the Central Valley, ranging from east of Redding in Shasta County south to Fresno County, and from a single vernal pool complex located in the San Francisco Bay National Wildlife Refuge in Alameda County. It inhabits vernal pools containing clear to highly turbid water, ranging in size from 5 square meters (54 square feet) in the Mather Air Force Base area of Sacramento County, to the 36-hectare (89-acre) Olcott Lake at Jepson Prairie in Solano County.

*Vernal pool fairy shrimp.* The vernal pool fairy shrimp is known from 342 occurrences extending from Shasta County through most of the length of the Central Valley to Pinnacles in San Benito County (Eng *et al.* 1990, Fugate 1992, CNDDDB 2004) and Riverside County. Five disjunctive populations exist: one near Soda Lake in San Luis Obispo County; one in the mountain grasslands of northern Santa Barbara County; one on the Santa Rosa Plateau in Riverside County; one near Rancho California in Riverside County; and one on the Agate Desert near Medford, Oregon. The vernal pool fairy shrimp inhabits vernal pools with clear to tea-colored water, most commonly in grass- or mud-bottomed swales, basalt flow depression pools in unplowed grasslands, or even sandstone rock outcrops or alkaline vernal pools.

The genetic characteristics of these species, as well as ecological conditions, such as watershed continuity, indicate that populations of vernal pool crustaceans are defined by pool complexes rather than by individual vernal pools (Fugate 1992). Therefore, the most accurate indication of the distribution and abundance of these species is the number of inhabited vernal pool complexes. The pools and, in some cases, pool complexes supporting these species are usually small. Human-caused and unforeseen natural catastrophic events such as long-term drought, non-native predators, off-road vehicles, pollution, berming, and urban development, threaten their extirpation at some sites.

**Dispersal.** The primary historic dispersal method for the vernal pool tadpole shrimp and vernal pool fairy shrimp likely was large scale flooding resulting from winter and spring rains which allowed the animals to colonize different individual vernal pools and other vernal pool complexes. This dispersal is currently non-functional due to the construction of dams, levees, and other flood control measures, and widespread urbanization within significant portions of the range of this species. Waterfowl and shorebirds may now be the primary dispersal agents for vernal pool tadpole shrimp and vernal pool fairy shrimp. The eggs of these crustaceans are either ingested (Krapu 1974, Swanson *et al.* 1974, Driver 1981, Ahl 1991) and/or adhere to the legs and feathers where they are transported to new habitats.

## **Environmental Baseline**

### *Vernal Pools*

Historically, vernal pools and vernal pool complexes occurred extensively throughout the Sacramento Valley of California. However, conversion of vernal pools and vernal pool complexes has resulted in a 91 percent loss of vernal pool resources in California (State of California 2003d). By 1973, between 60 and 85 percent of the area within the Central Valley that once supported vernal pools had been destroyed (Holland 1978). In the ensuing 30 years, threats to this habitat type have continued and resulted in a substantial amount of vernal pool habitat being converted for human uses in spite of Federal regulations implemented to protect wetlands. For example, between 1987 and 1992, 467 acres of wetlands within the Sacramento area were filled pursuant to Nationwide Permit 26 (Service 1992). A majority of those wetlands losses involved vernal pools, the endemic habitat of the vernal pool tadpole shrimp, the vernal pool fairy shrimp (shrimp), and slender and Sacramento Orcutt grasses. It is estimated that within 20 years human activities will destroy 60 to 70 percent of the remaining vernal pools (Coe 1988).

In addition to direct habitat loss, the two shrimp populations have been and continue to be highly fragmented throughout their ranges due to conversion of natural habitat for urban and agricultural uses. Fragmentation results in small isolated shrimp populations. Ecological theory predicts that such populations will be highly susceptible to extirpation due to chance events, inbreeding depression, or additional environmental disturbance (Gilpin and Soulé 1988; Goodman 1987a, b). If an extirpation event occurs in a population that has been fragmented, the opportunities for re-colonization would be greatly reduced due to physical (geographic) isolation from other (source) populations.

Human population growth in Sacramento County has steadily increased. On the average, Sacramento County has experienced an annual population increase of 1.38 percent for the period between 1991 and 1999 (Service 2000). For the period between 1990 and 2000, population growth in Sacramento County increased 17.5 percent, with an average annual growth rate of 17.5 percent (State of California 2002). This annual growth appears to be increasing, as demonstrated by the 2.63 percent and 2.2 percent increases in population growth in 2001 and 2002, respectively (State of California 2003a, 2003b). Increased housing demand and urban development accompany the population growth in Sacramento County. Between 1990 and 2000, housing units in Sacramento County increased by 1.37 percent annually (State of California

2000, 2003c). Population growth and concomitant housing demand and subsequent vernal pool resource development are projected to continue. Population projections for Sacramento County are expected to increase above 2000 levels by 19.7 percent in 2010, by 28 percent in 2015, and by 37.5 percent in 2020 (State of California 2001).

Sacramento County represents important, high quality habitat for the two shrimp populations by providing large, nearly contiguous areas of relatively undisturbed vernal pool habitat. Sacramento County contains the greatest number of occurrences of vernal pool tadpole shrimp within the range of the species, and also is one of the two counties with the greatest number of occurrences of vernal pool fairy shrimp within the range of the species. Sacramento County contains 58 (17 percent) out of the total of 342 reported occurrences of vernal pool fairy shrimp, and 58 (34 percent) out of the total of 173 reported occurrences of vernal pool tadpole shrimp (CNDDB 2004). Further, Sugnet and Associates (1993) reported that of 3,092 "discrete populations" checked, only 345 locations, or about 11 percent of all locations checked, were found to support the vernal pool tadpole shrimp. Of these 345 locations supporting the vernal pool tadpole shrimp, 219 (63 percent) were in Sacramento County. Further, of the 3,092 locations checked, 178 locations (6 percent) were found to support the vernal pool fairy shrimp. Of this total, 63 locations (35 percent) were within Sacramento County.

The vernal pool tadpole shrimp and vernal pool fairy shrimp are imperiled by a variety of human-caused activities. Their habitats have been lost through direct destruction and modification due to filling, grading, disking, leveling, and other activities. In addition, vernal pools have been imperiled by a variety of anthropogenic modifications to upland habitats and watersheds. These activities, primarily urban development, water supply/flood control projects, land conversion for agriculture, off-road vehicle use, certain mosquito abatement measures, and pesticide/herbicide use can lead to disturbance of natural flood regimes, changes in water table depth, alterations of the timing and duration of vernal pool inundation, introduction of non-native plants and animals, and water pollution. These indirect effects can result in adverse effects to vernal pool species.

A number of State, local, private, and unrelated Federal actions have occurred within the project area and adjacent region affecting the environmental baseline of these species. Some of these projects have been subject to prior section 7 consultation. Based on an informal review, the Service has issued approximately 157 biological opinions to Federal agencies on proposed projects in Sacramento County that have adversely affected the shrimp species since the two species were proposed to be listed in 1994. This total does not reflect the formal consultations that were withdrawn, those that are suspended, those that have insufficient information to conclude an effects analysis, those that were amended, or ones that the Service issued a conference opinion. No State of California actions have taken place within Sacramento County that have adversely affected the species in the action area. Although these proposed projects in Sacramento County have eliminated vernal pools and vernal pool complexes, the offsetting compensating measures are designed to minimize the effects of take of these species resulting in both negative and positive effects to the species. Thus, the trend for the two vernal pool species within the county is most likely static.



The actions listed above have resulted in both direct and indirect impacts to vernal pools within the region, and have contributed to the loss of vernal pool tadpole shrimp and vernal pool fairy shrimp populations. Although a reduction of the two shrimp populations has not been quantified, the acreage of lost habitat continues to grow.

In south Sacramento County, the Urban Services Boundary (USB) is a planning boundary that coincides with the areas north of the Cosumnes River/Deer Creek drainage system. Between 1993 and 2000, an estimated 14,950 acres were converted to urban development within the USB (pers. comm., D. Gifford, CDFG, 2004), based on an analysis of the California Department of Water Resources mapping data. An independent analysis of urban growth in Sacramento County estimated that an estimated 22,000 acres were converted between 1990 and 2000, averaging 2,200 acres per year (pers. comm., Richard Radmacher, Sacramento County, 2004). As of 1998 (the most recent year for which vernal pool mapping from aerial photographs is available), there remained an estimated 23,533 acres of vernal pool grasslands within the USB, supporting approximately 946 acres of wetted vernal pool acreage (pers. comm., Lora Konde, CDFG, 2003).

Vernal pool complexes, occurring north of the Cosumnes River/Deer Creek drainage and within the USB, contain a high density of occupied pool of both vernal pool tadpole shrimp and vernal pool fairy shrimp. There are 31 known occurrences of vernal pool tadpole shrimp inside the USB, compared to 17 occurrences outside the USB (CNDDDB 2004). There are 25 known occurrences of vernal pool fairy shrimp inside the USB, compared to 18 occurrences outside the USB (CNDDDB 2004). The data from the CNDDDB do not reflect additional reported records in the Sunrise-Douglas area, where 137 occurrences of vernal pool tadpole shrimp and 46 occurrences of vernal pool fairy shrimp, and 2 occurrences of Orcutt grasses (2 slender Orcutt grass and 4 Sacramento Orcutt grass) are reported (pers. comm., Arnold Roessler, Service, 2004). An additional occurrence of slender Orcutt grass has been reported, but not recorded in the CNDDDB (pers. comm., Pete Balfour, ECORP Consulting, 2004).

The vernal pools on the proposed project site are classified as the old-terrace type and are located on soils associated with Laguna geologic formation. Old-terrace is a rapidly disappearing habitat type in Sacramento County that consists of ancient river channel deposits that were laid down from 600,000 to more than one million years ago by the American River. By comparison, young-terrace formation dates from 100,000 to 200,000 years ago. Old-terrace formation generally has a higher density of vernal pools, deeper pools, and a greater number of special status plants and crustaceans than young-terrace formations. Some special status species found in old-terrace pools may have evolved from species inhabiting shores of ancient lakes in the Central Valley. Old-terrace pools may have served as refugia for these species as the lakes disappeared (pers. comm., K. Fuller, Service, 2004). Sacramento County contains an estimated 764 wetted acres of vernal pools on low terrace, 1,390 wetted acres of vernal pools on high terrace, and 189 wetted acres of vernal pools on volcanic mudflow vernal pools.

There are two predominant soil types found within south Sacramento County. The Valley Springs soil type typifies Gill Ranch, located in Sacramento County, approximately 12 miles southeast of the proposed project site. Vernal pools found within the Valley Springs soil type are

the young-terrace formation. Young-terrace formations, because they have a higher slope gradient, tend to have fewer vernal pools that are typically smaller and more shallow. These vernal pools also are inundated for shorter durations. These factors typically result in lower species diversity. Generally, the larger the vernal pool on this soil type, the higher its biotic diversity. Vernal pool fairy shrimp, vernal pool tadpole shrimp, and Sacramento Orcutt grass are less likely to occur in young-terrace formation vernal pools found on Valley Springs soils (pers. comm., Holland, 2004).

The Laguna geologic formation and its associated soils entirely characterizes the Sunrise Douglas Community Plan Area. Vernal pools found within this soil type are old-terrace types. Old-terrace types, because they have a lower slope gradient, tend to have pools that are larger, deeper, and clearer. These pools are inundated for longer periods, but dry and refill less often than the Valley Springs soil type. Generally, the smaller the vernal pool on this soil type, the higher its invertebrate diversity. Although vernal pool fairy shrimp occur in pools on both soil types, but more frequently in pools on Laguna soils. Vernal pool tadpole shrimp are found almost exclusively in old-terrace formation vernal pools found on Laguna soils.

Several areas containing old-terrace formation have been protected for their high quality vernal pool habitat and high concentration of special status species populations by the Sacramento Valley Conservancy (SVC). This potential preserve area, the SVC's Vernal Pool Prairie Preserve, would cover 2,000 to 3,000 acres and supports a variety of special status plants and animals on relatively undisturbed grasslands containing young and old terrace formations and northern hardpan vernal pools. Within the proposed Prairie Preserve, areas already protected include the Arroyo Seco Mitigation Bank, the Excelsior 184 parcel, and the Sacramento County-owned Multi Cultural Park; outside of the proposed Prairie Preserve, the Sunrise Douglas Preservation Bank, and a portion of Howard Ranch are protected. All of these preserves are within proposed critical habitat for the two listed vernal pool crustaceans addressed in this biological opinion.

There are 342 records of vernal pool fairy shrimp and 173 records of vernal pool tadpole shrimp recorded in the CNDDB for the entire state of California (CNDDB 2004). Of these records, 58 vernal pool fairy shrimp records and 58 vernal pool tadpole shrimp records are from Sacramento County (CNDDB 2004). Vernal pool fairy shrimp and vernal pool tadpole shrimp have both been observed in wetlands throughout the Sunrise Douglas area.

*Vernal pool fairy shrimp located within the Sunridge Specific Plan:* There is one record within the Sunridge Specific Plan boundaries, and another 17 records located within five miles of the Sunridge Specific Plan area boundaries. The nearest occurrence (# 43) of this species, observed in March 1996, is a half of a mile southwest of the proposed project site (CNDDB 2004).

*Vernal pool tadpole shrimp within the Sunridge Specific Plan:* There are two records within the Sunridge Specific Plan boundaries, and another 23 records within five miles of these boundaries. The nearest two occurrences (# 54 and # 23) of this species are within 1.5 miles of the proposed project site. One of these recorded occurrences (# 54), located to the west of the site, was

observed in February of 1993; and the other recorded occurrence (# 23), located to the east of the site, was observed in 1996 (CNDDDB 2004).

The proposed Sunridge Village J project site has not been surveyed for the presence of either of these vernal pool crustaceans. All of the vernal pools and seasonal wetlands on the proposed project site, however, provide appropriate habitat for both vernal pool fairy shrimp and vernal pool tadpole shrimp. Because these species are known from other parcels within the SDCPA and vicinity, and it is likely the vernal pool crustaceans would disperse within the watershed between the project sites, the applicant assumes presence of vernal pool fairy shrimp and vernal pool tadpole shrimp in all suitable habitat on the proposed project site (Foothill Associates 2004a).

### **Effects of the Proposed Action**

Although vernal pool fairy shrimp and vernal pool tadpole shrimp exhibit slightly differing habitat requirements and life cycles, they often inhabit the same vernal pool complexes and have been known to co-occur in individual vernal pools. These species are supported by similar habitat types, including vernal pools, seasonally ponded areas within vernal swales, rock outcrop ephemeral pools, playas, alkali flats, and other depressions that hold water of similar volume, depth, area, and duration. Therefore, both species are subject to a common set of threats and considerations.

Both vernal pool fairy shrimp and vernal pool tadpole shrimp have been documented to occur within the Sunridge Specific Plan area. Focused surveys for vernal pool crustaceans were conducted on the proposed project using the Service's current Dip Net protocol between February and March of 1993 by Sugnet and Associates (1993). The results of these surveys indicated the presence of California linderiella (*Linderiella occidentalis*) from four discrete locations and vernal pool fairy shrimp from one location. All of the vernal pools and seasonal wetlands on the proposed project site, however, provide appropriate habitat for both vernal pool fairy shrimp and vernal pool tadpole shrimp. Because these species are known from other parcels within the SDCPA and vicinity, and it is likely the vernal pool crustaceans would disperse within the watershed between the project sites, the applicant assumes presence of vernal pool fairy shrimp and vernal pool tadpole shrimp in all suitable habitat on the proposed project site. Therefore, construction of the proposed project in any portion of the proposed project site that supports suitable habitat is likely to adversely affect populations of vernal pool fairy shrimp and vernal pool tadpole shrimp.

### **Direct Effects**

Direct effects are the immediate effects of the proposed project on the species or its habitat and include the effects of interrelated action and interdependent actions. Interrelated actions are those actions that are part of a larger action and depend on the larger action for their justification.

Interdependent actions are those actions that have not independent utility apart from the proposed action (50 CFR §402.02). Our analysis is based on the assumption that the proposed project will be implemented within two (2) calendar years of the date of the issuance of this biological opinion.

The proposed project would result in fill of 1.88 acres of vernal pools and 0.22 acres of seasonal wetlands that provide suitable habitat for and may be potentially occupied by vernal pool fairy shrimp and vernal pool tadpole shrimp. The Service considers an entire vernal pool or seasonal wetland to be directly affected when even a portion of it is filled or subject to similar direct affects. Therefore, although 0.07 acre of the directly affected vernal pools extends beyond the proposed project site onto an adjacent property, the Service considers these portions to also be directly affected.

#### Interrelated and Interdependent Actions

Additional effects from interrelated and interdependent actions are expected from the proposed project. Approximately 115 acres of vernal pools are present in the entire Sunridge Specific Plan area (Foothill Associates 2004a). The Corps issued a permit for the largest project in this area, the approximately 1,225-acre Anatolia I,II, III property that included approximately 71 acres of vernal pools (Corps file number 190110021). This Corps permit authorized fill of approximately 27 acres of vernal pool crustacean habitat, and required the preservation of 44 acres of vernal pools within a 482-acre on-site preserve. With the exception of this preserve and a designated open space area along Laguna Creek near Grant Line Road, the Sunridge Specific Plan land use designations and zoning provide for urban land use throughout the plan's areas.

Development of the SDCPA will require the extension of certain utilities and the enlargement of certain roads in areas outside of the SDCPA boundary. Utility improvements include the development of a well field, water supply lines, and water treatment facilities and sewer lines. Well locations have all been sited to avoid affects to aquatic habitats. The water treatment facility will be located on land permitted for take in the Anatolia I, II, III project (Service file number 1-1-96-F-0062) within the SDCPA boundary. All offsite road improvements and the sewer and water lines will be constructed in existing rights-of-way with affects to aquatic resources totaling less than one-half of an acre (Foothill Associates 2004a).

All infrastructure improvements are required to serve the already permitted Anatolia project. Affects resulting from offsite infrastructure development and road widening to Sunrise Boulevard from White Rock Road, to Pyramid Road, to Douglas Road from Sunrise Boulevard, and to Americanos Road, are covered under separate Nationwide14 Permits (Corps file number 200300697), which are currently in review by the Service. Two additional road improvement projects will be permitted under Phase I and will provide service to Anatolia and the remaining projects within the SDCPA. Jaeger Road, an existing two-lane, partially paved road, will be paved from Douglas Road south to Pyramid Road. Pyramid Road, an existing dirt road, will be improved from Sunrise Boulevard to Jaeger Road. The two road improvements will affect less than one-tenth an acre (Foothill Associates 2004a).

Continuing development in southern Sacramento County requires the installation of supporting infrastructure, such as sewer interceptors. The proposed Laguna Creek Interceptor would carry waste from developments that are scheduled for the Laguna area. The exact route of the proposed Laguna Creek Interceptor is not known at this time; however the proposed project could have both direct and indirect effects on listed vernal pool crustaceans, and other listed

species. The proposed Laguna Creek Interceptor, approximately 87,000 feet in length, would extend eastward from the Sacramento Regional Water Treatment Plant (SRWTP) to east of Sunrise Boulevard (SRCSD 2000). The proposed Laguna Creek Interceptor would service an area which extends northwest from the intersection of Bradshaw and Calvin Roads nearly to the intersection of White Rock and Scott Roads, including the entire proposed Sunrise-Douglas development. This proposed interceptor would also provide tie-ins for the future Deer Creek Interceptor, approximately 90,000 feet in length, which is proposed for construction between 2021 and 2032, and the Aerojet Interceptor, approximately 55,000 feet in length, which is proposed for construction between 2014 through 2033 (SRCSD 2000). These two interceptors would eventually service areas east of Grant Line Road and northeast of Sunrise Road, respectively. Construction for the proposed Laguna Creek Interceptor is proposed for 2010 through 2024.

These future projects may adversely affect several federally-listed species, including the vernal pool crustaceans, the giant garter snake (*Thamnophis gigas*), the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), the California tiger salamander (*Ambystoma californiense*), the California red-legged frog (*Rana aurora draytonii*), the delta smelt (*Hypomesus transpacificus*) and its designated critical habitat, and the slender Orcutt grass (*Orcuttia tenuis*).

Currently, a South Sacramento Habitat Conservation Plan (SSHCP) is being developed. So therefore, while development activities in south Sacramento County may negatively affect vernal pool crustaceans and other listed species and their habitats, if completed, the SSHCP may eventually ensure that development activities would avoid, minimize, and compensate for take of listed species to the greatest extent possible. The SSHCP would address the indirect affects of facilitated planned development that results from the interrelated and interdependent actions that result from the proposed project. At minimum, the SSHCP will address the Federal and State listed species known at this time that may be affected by actions that are reasonably foreseeable as a result of the proposed action. Additional HCP-covered species may be added as the HCP is being developed. The SSHCP will be coordinated with CDFG and will include any appropriate State listed species. The SSHCP will address actions that are within the land use authority of Sacramento County and are reasonably foreseeable as a result of the proposed action, including land use approvals that are related to entitlements. Additional activities may be added as the SSHCP is developed. The SSHCP will cover a cumulative effects boundary area that is reasonably foreseeable as a result of the proposed project and the future projects.

### Indirect Effects

Indirect effects are caused by or result from the proposed action, are later in time, and are reasonably certain to occur. Indirect effects may occur outside of the area directly affected by the action (50 CFR §402.02).

Indirect effects to vernal pools in the project vicinity that could result from the implementation of the proposed project include hydrologic alteration, habitat fragmentation, disturbances from construction equipment, non-point source pollution, and impacts from human encroachment.

The Service considers all vernal pool crustacean habitat not considered to be directly affected but within 250 feet of proposed construction activities to be indirectly affected by project implementation. Indirectly affected habitat includes all habitat supported by future destroyed areas and swales, and all habitat otherwise damaged by loss of watershed, human intrusion, introduced species, and pollution that will be caused by the proposed project.

The proposed project activities will indirectly affect 0.39 acres of vernal pool crustacean habitat, including 0.36 acres of vernal pools and 0.03 acres of seasonal wetlands. Although these features exist on land that is proposed for future development, (*i.e.*, Sunridge 530), assurance is not given to the timing of groundbreaking on the proposed Sunridge 530 project, and therefore, effects must be accounted for as they occur. These features will be indirectly affected by construction activities occurring within 250 feet of them. Individual crustaceans and their cysts, which may inhabit these vernal pools and seasonal wetlands, may be injured or killed by any of the following indirect effects:

*Erosion* - The ground disturbing activities in the watershed of vernal pools associated with the proposed project action area are expected to result in siltation when pools fill during the wet season following construction. Siltation in pools supporting listed crustaceans may result in decreased cyst viability, decreased hatching success, and decreased survivorship among early life history stages, thereby reducing the number of mature adults in future wet seasons. The proposed project construction activities could result in increased sedimentation transport into vernal pool crustacean habitats during periods of heavy rains.

*Changes in hydrology* - The biota of vernal pools and swales can change when the hydrologic regime is altered (Bauder 1986, 1987). Survival of aquatic organisms like the vernal pool fairy shrimp and vernal pool tadpole shrimp are directly linked to the water regime of their habitat (Zelder 1987). Therefore, construction near vernal pool areas will, at times, result in the decline of local sub-populations of vernal pool organisms, including fairy shrimp and tadpole shrimp.

*Introduction of non-natives* - There is an increased risk of introducing weedy, non-native plants into the vernal pools both during and after project construction due to the soil disturbance from clearing and grubbing operations, and general vegetation disturbance associated with the use of heavy equipment.

*Chemical contamination* - The runoff from chemical contamination can kill listed species by poisoning. Oils and other hazardous materials associated with construction equipment could be conveyed into the vernal pool crustacean habitats by overland runoff during the rainy season, thereby adversely affected water quality. Many of these chemical compounds are thought to have adverse affects on all of the listed vernal pool crustaceans and/or their cysts. Individuals may be killed directly or suffer reduced fitness through physiological stress or a reduction in their food base due to the presence of these chemicals.

In addition to the adverse effects detailed above, the proposed project will contribute to a local and range-wide trend of habitat loss and degradation, the principal reasons that the vernal pool



fairy shrimp and vernal pool tadpole shrimp have declined. The proposed project will contribute to the fragmentation and reduction of the acreage of the remaining listed vernal pool crustacean habitat located in south Sacramento County and throughout the range of these two listed vernal pool crustaceans.

### **Cumulative Effects**

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Large areas within south Sacramento County, including the SDCPA, have been designated for development in the next 20 years under the Sacramento General Plan. The timeline for development in these areas began in the early 1990s and is expected to continue for the next 5 to 10 years. This growth and conversion would contribute to several potentially significant affects to listed species, including loss, alteration, or degradation of habitat, particularly of wetlands, degradation of water quality, and increases in the frequency and intensity of flooding.

A number of on-going and proposed projects could contribute to adverse affects to vernal pool crustaceans within Sacramento County, particularly in the vicinity of the proposed project. In most cases, however, these actions would be subject to Federal review and would, therefore, not be considered cumulative to the proposed project. For instance, several large highway and light rail construction, road improvement, water transfer, and utility and interceptor installation projects are currently planned or underway in south Sacramento County. These projects will contribute to the loss and degradation of habitats of listed species across their range, particularly in south Sacramento County. These activities may alter vernal pool crustacean habitats and can potentially harass, harm, injure, or kill these species. Because these activities have a Federal nexus, the Service will analyze these projects to determine if they will result in the jeopardy of federally-listed species and/or adverse modification and destruction of critical habitat for these species. An undetermined number of future projects that alter the habitat of vernal pool crustaceans, however, could go forward without the need for a Corps 404 permit. Activities that would potentially affect listed vernal pool crustaceans include development associated with urban, water, flood control, highway/roadway and utility projects, application of herbicides/pesticides, conversion to agricultural use, and indirect effects of adjacent development such as urban run-off altering the hydrologic regime.

The Service is aware of other projects currently under review by the State, County, and local authorities where biological surveys have documented the occurrence of federally-listed species. These projects include such actions as urban expansion, water transfer projects that may not have a Federal nexus, and continued agricultural development. The cumulative effects of these known actions pose a significant threat to the eventual recovery of these species. Because the vernal pool tadpole shrimp and vernal pool fairy shrimp are endemic to vernal pools in the Central Valley, coastal ranges, and a limited number of sites in the transverse range and Santa Rosa plateau of California, the Service anticipates that a wide range of activities will affect these

species. Such activities include, but are not limited to: (1) urban development, (2) water projects, (3) flood control projects, (4) highway projects, (5) utility projects, (6) chemical contaminants, and (7) conversion of vernal pools to agricultural use. Many of these activities will be reviewed under section 7 of the Act as a result of the Federal nexus provided by section 404 of the Federal Water Pollution Control Act, as amended (Clean Water Act).

The proposed project is located in a region where future destruction and modification of vernal pool crustacean habitat is anticipated. Sacramento County will continue to develop within the County's sphere of influence. This development will result in increased direct loss of habitats for these listed species. Continued loss of these habitats throughout the region could conceivably affect the genetic diversity of the local population(s) of listed vernal pool crustaceans. Any loss of genetic diversity can have significant effects on a population's ability to respond to environmental change over time (Frankel and Soulé 1981). Within the proposed action area, the predominant types of non-federal actions that might affect the listed vernal pool crustaceans consist of residential and commercial development.

### **Conclusion**

After reviewing the current status of the vernal pool fairy shrimp and vernal pool tadpole shrimp, the environmental baselines for the area covered by this biological opinion, the effects of the proposed project, and the cumulative effects, it is the Service's biological opinion that Sunridge Village J project, as proposed, is not likely to jeopardize the continued existence of these species. Critical habitat has not been designated in Sacramento County for either the vernal pool fairy shrimp or the vernal pool tadpole shrimp. Therefore, the proposed project is not likely to destroy or adversely modify designated critical habitat for the vernal pool fairy shrimp and the vernal pool tadpole shrimp.

### **INCIDENTAL TAKE STATEMENT**

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by the Corps so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to require any entity participating in the project to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

### **Amount or Extent of Take**

The implementation of the proposed project will directly affect 2.10 acres and indirectly affect 0.39 acre of vernal pool crustacean habitat. The Service anticipates incidental take of vernal pool tadpole shrimp and vernal pool fairy shrimp will be difficult to detect or quantify for the following reasons: the aquatic nature of the organisms and their relatively small body size make the finding of a dead specimen unlikely; losses may be masked by seasonal fluctuations in numbers and other causes; and the species occurs in habitat that makes them difficult to detect. Due to the difficulty in quantifying the number of vernal pool fairy shrimp and vernal pool tadpole shrimp that will be killed as a result of the proposed action, the Service is quantifying take incidental to the project as the number of acres of vernal pool crustacean habitat that will become unsuitable for the listed species due to direct or indirect effects as a result of the proposed project. Therefore, the Service estimates that all vernal pool fairy shrimp and vernal pool tadpole shrimp inhabiting 2.49 acres of vernal pool crustacean habitat will harassed, harmed, injured, or killed, as a result of the proposed project.

Upon implementation of the following reasonable and prudent measures, all vernal pool fairy shrimp and vernal pool tadpole shrimp inhabiting 2.49 acres of vernal pool crustacean habitat will become exempt from the prohibitions described under section 9 of the Act for direct and indirect effects associated with the proposed Sunridge Park project. The listed vernal pool crustaceans may be harmed, harassed or killed in association with the acres exempted under Section 9 of the Act. No other forms of take are authorized under this opinion.

### **Effect of the Take**

In the accompanying biological opinion, the Service has determined that this level of anticipated take is not likely to result in jeopardy to the vernal pool tadpole shrimp and vernal pool fairy shrimp. The proposed project is not likely to result in destruction or adverse modification of designated critical habitat for the vernal pool fairy shrimp and vernal pool tadpole shrimp because no critical habitat for these species has been designated in the proposed action area.

Upon implementation of the following reasonable and prudent measures, incidental take associated with the proposed project on the vernal pool fairy shrimp and vernal pool tadpole shrimp in the form of harm, harassment, and mortality in the form of habitat degradation will become exempt from the prohibitions described under section 9 of the Act for direct and indirect effects.

### **Reasonable and Prudent Measures**

The Service has determined that the following reasonable and prudent measure is necessary and appropriate to minimize the effects of the proposed project on the vernal pool tadpole shrimp and vernal pool fairy shrimp.

1. Minimize the direct and indirect impacts to federally listed vernal pool crustaceans resulting from habitat modification and habitat loss in the Sunrise Douglas Community Plan Area.

### **Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the Act, the Corps must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

1. The Corps shall fully implement the principles and standards outlined in the document titled, "June 2004 Conceptual Strategy for Avoiding Minimizing and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area", for this project.
2. The Corps shall fully implement the March 2004 map titled, "Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection" for this project.
3. The Corps shall assure all conservation measures as proposed by the project proponent (pages 10-12 of the *Sunrise Village J Section 7 Biological Assessment* (Foothill Associates 2004a), in the September 21, 2004, letter from Foothill Associates to the Service, in the October 14, 2004, letter from Foothill Associates to the Service, and in the November 2, 2004, letter from Foothill Associates to the Service), and identified by the Service in the project description of our biological opinion are fully implemented.
4. The Corps shall assure the following "Best Management Practices" are implemented during project construction:
  - a. The project proponent shall include a copy of this biological opinion within its solicitations for construction of the proposed project, making the prime contractor responsible for implementing all requirements and obligations included within the biological opinion, and to educate and inform all other contractors involved in the project as to the requirements of the biological opinion. The project proponents shall make the terms and conditions in this biological opinion a required item in all contracts for the project that are issued by the County to all contractors. The project proponents shall provide the Division Chief of Endangered Species (Central Valley) at the Sacramento Fish and Wildlife Office with a hardcopy of the contract(s) for this project at least ten (10) working days before it is accepted or awarded.

- b. At least 30 calendar days prior to initiating construction activities, the project proponents shall submit the names and curriculum vitae of the biological monitor(s) for the project.
- c. A Service-approved biologist must be on-site during all construction-related activities that occur within 250 feet of vernal pool crustacean habitat, and that could result in the take of these federally-listed species. The biologist will have the authority to halt any action that might result in take of listed species. If the biologist exercises this authority, the Service and the CDFG shall be notified by telephone and letter within one (1) working day.
- d. A Worker Environmental Awareness Training Program for construction personnel shall be conducted before the commencement of construction. The program shall provide workers with information on their responsibilities with regard to the listed vernal pool crustaceans, an overview of the life-history of the species, information on take prohibitions, and an explanation of the relevant terms and conditions of this biological opinion. Written documentation of the training must be submitted to the Sacramento Fish and Wildlife Office within three (3) working days of the completion of instruction.
- e. Prior to groundbreaking, high-visibility fencing that is at least 5 feet tall shall be placed along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto adjacent off-site habitat. Such fencing will be inspected by the on-site biologist at the beginning of each work day and maintained in good condition. The fencing may be removed only when the construction of the project is completed.
- f. During construction operations, the number of access routes, number and size of staging areas, and the total area of the proposed project activity will be limited to the minimum necessary. Routes and boundaries will be clearly demarcated. Movement of heavy equipment to and from the project site will be restricted to established roadways to minimize habitat disturbance, and all vehicle traffic on access road will observe a speed limit of 20 miles per hour. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the wetland avoidance areas. All fueling, cleaning, and maintenance of vehicles and other equipment will occur only within designated areas and at least 250 feet away from any wetland habitats. The applicant will ensure contamination of habitat does not occur during such operations. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately. Such spills will be reported in the post-construction compliance reports.
- g. To control erosion during and after implementation of the project, the applicant will implement best management practices (BMPs), as identified by the Central Valley

Regional Water Quality Control Board. Erosion control measures and BMPs, which retain soil or sediment, runoff from dust control, and hazardous materials on the construction site and prevent these from entering the vernal pool complexes, will be placed, monitored, and maintained throughout the construction operations. These measures and BMPs may include, but are not limited to, silt fencing, sterile hay bales, vegetative strips, hydroseeding, and temporary sediment disposal. The Stormwater Pollution Prevention Plan (SWPPP) described in the Description of the Proposed Action section of this Biological Opinion shall include these and any other measures necessary to prevent the discharge of contaminated runoff onto the adjacent offsite wetland habitats.

- h. All heavy equipment, vehicles, and supplies will be stored at the designated staging area at the end of each work period. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the open space/wetland preserve and offsite wetland avoidance areas. Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. All fueling, cleaning, maintenance, and staging of vehicles and other equipment will occur only within designated areas and at least 250 feet away from the open space/wetland preserve and any off-site vernal pool crustacean habitats. All machinery will be properly maintained and cleaned to prevent spills and leaks. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately in accordance with applicable local, state and/or federal regulations. Such spills will be reported in the post-construction compliance reports.
  - i. No clearing of vegetation and scraping, or digging, of soil in the avoided/preserve area
- 6. The Corps shall ensure the applicant complies with the *Reporting Requirements* of this biological opinion.
- 7. The applicant has proposed to offset direct and/or indirect effects of vernal pool crustacean habitat loss through habitat preservation offsite. Prior to any fill of wetlands on the proposed project site, credits commensurate with acreage commitment shall be dedicated within a Service-approved habitat preservation bank and documentation provided to the Service. If the applicant chooses not to use an approved preservation bank, then at least 120 days prior to construction, the applicant shall submit documentation of the preservation habitat including conservation easement, management plan, funding instrument, easement holder etc. for our approval.
- 8. The applicant has proposed to offset direct and/or indirect effects of vernal pool crustacean habitat through habitat restoration or creation. Prior to any fill of wetlands on the proposed project site, credits commensurate with acreage commitment shall be



dedicated within a Service-approved habitat restoration/creation bank. If the applicant chooses not to use an approved creation/restoration bank, then at least 90 days prior to construction, the applicant shall submit documentation of the creation/restoration habitat including: construction plan, conservation easement, management plan, funding instrument, easement holder etc. for our approval. The following criteria will be used by the Service when approving a restoration/creation site:

- a. The restoration site's soils will be appropriate vernal pool soil types (*e.g.*, San Joaquin, Redding, Corning);
- b. The restoration site's soil would have been disturbed at some point in the past, either through land leveling, ditching and draining, berming, or other disturbance that has removed or modified edaphic and hydrologic features necessary to support vernal pool habitat; and
- c. The restoration site will have a Service-approved conservation easement, a preserve management plan, and a long-term funding mechanism in place upon Service approval.

### **Reporting Requirements**

The Service-approved biologist shall notify the Service immediately if any listed species are found on site, and shall submit a report including the date(s), location(s), habitat description, and any corrective measures taken to protect the species found. The Service-approved biologist shall submit locality information to the CDFG, using completed California Native Species Field Survey Forms, no more than 30 calendar days after completing the last field visit of the project site. Each form shall have an accompanying scale map of the site, such as a photocopy of a portion of the appropriate 7.5-minute U.S. Geological Survey map and shall provide at least the following information: township, range, and quarter section; name of the 7.5-minute or 15-minute quadrangle; dates (day, month, year) of field work; number of individuals and life stage, where appropriate, encountered; and a description of the habitat by community-vegetation type. The Service-approved biologist shall also provide a high quality copy of this information to the staff zoologist, California Department of Fish and Game, 1807 13<sup>th</sup> Street #202, Sacramento, California, 95814, phone (916) 445-0045.

Any contractor or employee who, during routine operations and maintenance activities, inadvertently kills or injures a listed wildlife species must immediately report the incident to their representative. The Service is to be notified within one (1) working day of the finding of any dead or injured listed wildlife species or any unanticipated take of the species addressed in this biological opinion. The Service contact persons for this are the Division Chief, Endangered Species Division (Central Valley) at (916) 414-6600 and Resident Agent-in-charge Scott Heard at (916) 414-6660.

The project proponents shall submit a post-construction compliance report prepared by the monitoring biologists to the Sacramento Fish and Wildlife Office (SFWO) within 30 calendar

days of the completion of construction activity. This report shall detail the following: (1) dates that construction occurred; (2) pertinent information concerning the success of the project in meeting conservation measures; (3) an explanation of failure to meet such measures, if any; (4) known project effects on the snake, if any; (5) occurrence of incidental take of vernal pool crustaceans and snakes, if any; and (6) other pertinent information.

### **CONSERVATION RECOMMENDATIONS**

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases.

1. The Corps should work with the Service to address significant, unavoidable environmental effects resulting from projects proposed by non-Federal parties.
2. As recovery plans for listed vernal pool crustacean species are developed, the Corps should assist the Service in their implementation.
3. The Corps should work with the Service to ensure that its wetland delineation techniques fully assess the affects of proposed projects on listed vernal pool crustacean species.
4. The Corps, in partnership with the Service, should develop maintenance guidelines for the Corps projects that will reduce adverse effects of routine maintenance on vernal pool crustaceans and their habitats. Such action may contribute to the delisting and recovery of the species by preventing degradation of existing habitat and increasing the amount and stability of suitable habitat.
5. The Corps should conduct a study of cumulative loss of wetlands habitat, including habitat of listed crustaceans, in Sacramento County.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

### **REINITIATION--CLOSING STATEMENT**

This concludes formal consultation with the Corps on the proposed Sunridge Village J project. As provided in 50 CFR §402.16, re-initiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new


Mr. Justin Cutler

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information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending re-initiation.

Please contact this office at (916) 414-6645 if you have any questions regarding the proposed Sunridge Village J project.

Sincerely,

for   
Susan Moore  
Acting Field Supervisor

cc:

ARD (ES), Portland, OR

Ms. Terry Roscoe, California Dept. of Fish and Game, Rancho Cordova, CA

Ms. Elizabeth Goldman, Environmental Protection Agency, San Francisco, CA

Table 1 – In Text

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## **A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area**

June 2004

In March through May 2004, representatives of the US Fish and Wildlife Service, US Environmental Protection Agency, and the US Army Corps Engineers (Agencies) met to formulate a conceptual-level strategy for avoiding, minimizing, and preserving aquatic resource habitat in the Sunrise-Douglas Community Plan Area (SDCPA). The intended result of this effort was to achieve reasonable protection and conservation of federally threatened and endangered species under the Endangered Species Act, while taking a regional approach to avoidance and minimization of impacts to waters of the US, including wetlands, in accordance with Section 404 (b)(1) guidelines under the Clean Water Act. The strategy also endeavors to ensure a viable South Sacramento County Habitat Conservation Plan (HCP) can be developed, given that a large proportion of vernal pool habitat under consideration by the HCP planners is at risk in the SDCPA.

The conceptual-level strategy is represented by preserve areas shown on the map titled Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection dated March 2004 (see attached). To meet the goals of ESA and the Clean Water Act, the Agencies arrived at the boundaries of the "Preserve Areas" based on best professional judgment and a limited amount of information regarding regional and site-specific biology and hydro-geomorphology (such as wetland delineations, species accounts, and environmental impact reports), while recognizing that development is planned in the area. Of particular focus is the preservation of vernal pool complexes and corridors for Morrison Creek and Laguna Creek. The mapped boundaries are the smallest that would be acceptable to the Agencies and are predicated on ten principles and standards that would be followed by developers and planners as each element of the overall development proceeds.

The conceptual level strategy should be used by developers and planners to design and plan projects in the SDCPA. The Agencies will use the strategy to aid in the review of proposed development and evaluate the probable individual and cumulative effects on aquatic resources and sensitive species.

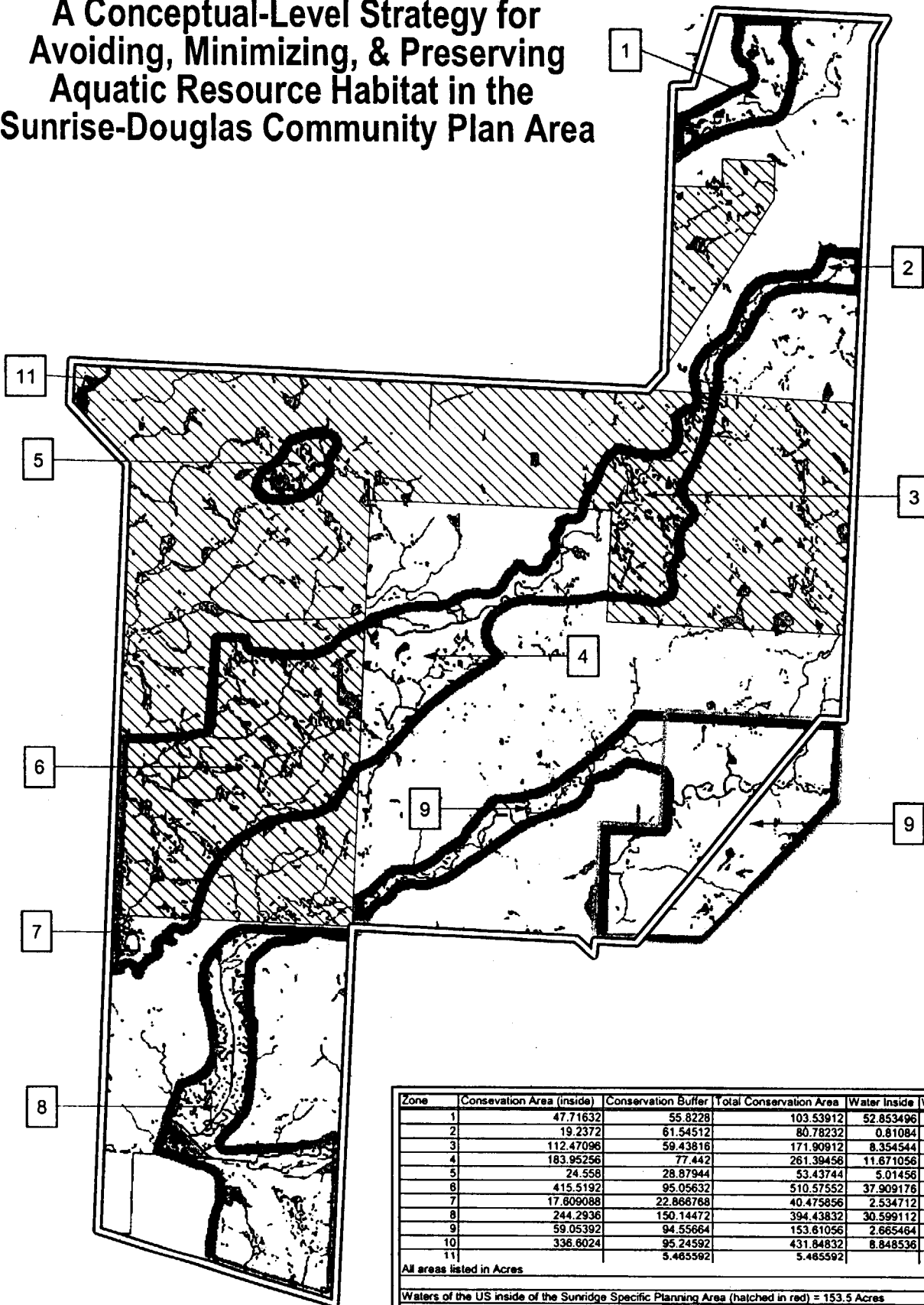
The Agencies anticipate that permit decisions and biological opinions will be completed on a case-by-case basis, using site-specific project and aquatic resource habitat information. Each proposed project would be evaluated on its own merits within the larger context of the SDCPA. Depending on the particular hydrology, habitat features, and development plans for a particular parcel, the conceptual preserve boundaries may need to be adjusted to minimize direct and indirect impacts to aquatic resources. Appropriate compensatory mitigation will be developed following demonstrated avoidance and minimization of project impacts.

### **Strategy Principles and Standards:**

1. Maintain natural (existing) watershed integrity and flows to downstream reaches (distribution, frequency and duration), including restricting summer nuisance flows.
2. Maintain corridors and large areas for wildlife and the propagation of flora. Preserve vernal pool hydrology and integrity to benefit listed plants and invertebrates. Establish interconnected conservation areas that are managed in perpetuity and tie into existing local and regional planning efforts. Provide for meaningful conservation of sensitive plant habitats for species integrity and long-term survival.

3. Manage stormwater to retain the natural flow regime and water quality including not altering baseline flows in the receiving waters, not allowing untreated discharges to occur into existing aquatic resources, and not using existing aquatic resources for detention or transport of flows above current hydrology, duration, and frequency. All stormwater flows generated on-site and entering preserve boundaries would be pre-treated to reduce oil, sediment, and other contaminants.
4. Use elevated roads, arched crossings and other practices for transportation corridors that must traverse Preserve Areas to minimize direct and indirect impacts to aquatic resources and maintain the integrity of Preserve Areas. Hydrologic and biologic functions and values of the Preserve Areas would not be significantly impacted by road crossings.
5. Use conservation design elements. These elements include construction techniques such as using single-loaded roads where housing abuts Preserve Areas, designing roadside landscaping to drain (surface and subsurface) toward urban features and not toward the preserve boundary, and orienting houses such that the front living area faces the Preserve Area. Fences would be low and not restrict visibility into the Preserve Area. Impervious surfaces would be minimized. Stormwater/water runoff plans would be designed to maintain watershed integrity by employing such means as vegetated swales, infiltration trenches, and constructed wetland filter strips to treat stormwater and water runoff from the large increases in impervious surfaces.
6. Locate compatible land uses next to preserves. Acceptable land uses include parks, hiking trails, athletic fields, and other forms of open space. Developed trails would be outside the preserve boundary. Any irrigated fields or landscaping must not drain toward preserves. Cut and fill activities adjacent to the preserve boundaries would be minimized.
7. Mow-only firebreaks may be located at the outer edges of Preserve Areas. Mowing within the Preserve Areas should be conducted consistent with achieving the goals of the preserve management plan, including promoting native/discouraging non-native species. Firebreaks that necessitate herbicide application or tilling, plowing or other soil disturbance would be located outside of the Preserve Areas.
8. Ensure Preservation Areas are protected in perpetuity. This includes establishing buffers and not locating lot lines within the preserve boundary. Areas would be protected in perpetuity through conservation easement that is adequately funded for maintenance and managed by a conservation-oriented third-party. Preserve Areas would be fenced and signed.
9. Implement mitigation measures (avoidance, minimization, and compensation) that adequately offset direct and indirect impacts to aquatic resources and listed species. In general, establishing the Preserve Areas is considered a regional measure to achieve impact avoidance and minimization. Vernal pools that are directly impacted by projects should be mitigated at ratios equal to or greater than 2:1 for preservation and 1:1 for creation/restoration. Vernal pools indirectly affected should be mitigated at ratios equal to or greater than 1:1 for preservation and 1:1 for creation/restoration. Preservation and creation/restoration will generally be completed in the same watershed but not within, or in a way that would affect, existing wetland complexes. On a case-by-case basis, preservation credit may be given for vernal pools in the Preserve Areas (except for the 250-foot wide indirect impact zone). Excellent opportunities exist in or near the SDCPA for the establishment of a vernal pool conservation bank(s) and a wetland compensatory (i.e., restoration/creation) mitigation bank(s).
10. Recognize the realities and constraints placed on construction design due to infrastructure and market-driven forces.

# A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area



Zone	Conservation Area (inside)	Conservation Buffer	Total Conservation Area	Water Inside	Water Buffer	Water Total
1	47.71632	55.8228	103.53912	52.853496	1.840584	54.69408
2	19.2372	61.54512	80.78232	0.81084	1.897824	2.708664
3	112.47096	59.43816	171.90912	8.354544	3.8868504	12.2413944
4	183.95256	77.442	261.39456	11.671056	2.559408	14.230464
5	24.556	28.87944	53.43744	5.01456	0.858792	5.873352
6	415.5192	95.05632	510.57552	37.909176	8.056104	45.96528
7	17.609088	22.866768	40.475856	2.534712	3.708096	6.242808
8	244.2936	150.14472	394.43832	30.599112	11.204736	41.803848
9	59.05392	94.55664	153.61056	2.665464	2.604624	5.270088
10	336.6024	95.24592	431.84832	8.848536	2.31948	11.168016
11		5.465592	5.465592		2.511072	2.511072
All areas listed in Acres						
Waters of the US inside of the Sunridge Specific Planning Area (hatched in red) = 153.5 Acres						
Waters of the US within the preserve areas inside of the Sunridge Specific Planning Area (hatched in red) = 68.56 Acres						
Sources: Foothill Associates, Ecop Consulting and USGS Projection: Region 9 Albers						
0 1000 2000 3000 4000 Feet						



## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825-1846



In reply refer to:  
1-1-05-F-0305

MAY 18 2006

Mr. Will Ness  
Chief, Sacramento Office  
U.S. Army Corps of Engineers District, Sacramento  
1325 J Street  
Sacramento, California 95814-29223

MAY 22 2006

Subject: Section 7 Consultation for the Proposed Grantline 208 Project [Corps file number 199400365], Sacramento County, California

Dear Mr. Ness:

This is in response to the U.S. Army Corps of Engineers' (Corps) request for formal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Grantline 208 project (proposed project) in Sacramento County, California. Your September 27, 2005, request was received in our office on September 28, 2005. This document represents the Service's biological opinion on the effects of the action on the federally endangered vernal pool tadpole shrimp (*Lepidurus packardii*) and the federally threatened vernal pool fairy shrimp (*Branchinecta lynchei*) (vernal pool crustaceans), in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act).

In your letter to the Service, you requested formal consultation on the federally-listed California tiger salamander (*Ambystoma californiense*), slender Orcutt grass (*Orcuttia tenuis*) and the Sacramento Orcutt grass (*Orcuttia viscida*) (listed plant species). The proposed Grantline 208 project site and the entire Sunridge Specific Plan are outside of the range of the California tiger salamander. Surveys conducted of the proposed project site in October 2003, and August 2004, did not indicate the presence of slender Orcutt grass or Sacramento Orcutt grass. Therefore, the proposed project will not affect the California tiger salamander or these listed plant species.

The findings and recommendations in this consultation are based on: (1) letters from Foothill Associates to the Service, dated January 25, 2005, and March 10 and 24, 2006; (2) the April 11, 2005, *Grantline 208 Section 7 Biological Assessment* (Biological Assessment), prepared by Foothill Associates; (3) a September 27, 2005, letter from Corps to the Service requesting initiation of formal consultation on proposed project; (4) site visits; (5) meetings.

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electronic mail (email) correspondence, and telephone conversations between representatives of the Service, Corps, Riverwest Investments (RWI), and Foothill Associates (consultant); and (6) other information available to the Service.

### **Consultation History**

Beginning on May 10, 2002, the Planning Department of the County of Sacramento initiated and facilitated a series of meetings to discuss and develop potential wetlands and endangered species permitting strategies for the Sunrise Douglas Community Planning Area (SDCPA). These meetings were attended by landowners, developers, and their representatives, staff from Congressman Doug Ose's office, California Department of Fish and Game (CDFG), the Service, the Corps, and the Environmental Protection Agency (EPA). The entire group met at least twelve times between May 10th and November 22, 2002, in an attempt to develop a strategy to address issues relating to endangered species and wetland protection within the SDCPA. By November of 2002, a resolution was not reached and discussions ceased at that time.

On July 17, 2002, during this initial phase of meetings, the Sacramento County Board of Supervisors approved both the larger SDCPA and the SunRidge Specific Plan. On July 1, 2003, with the incorporation of the City of Rancho Cordova ("City"), the SDCPA came under the City's land use jurisdiction.

A smaller group of project proponents representing the property owners in the Sunridge Specific plan area initiated several meetings with the Fish and Wildlife Service during mid-2003. Discussions focused on avoidance of endangered species habitats in the SDCPA and specific plan areas. Again, no resolution with the Service was reached.

In March 2004, Congressman Doug Ose initiated meetings with the Federal Agencies, local agencies, and the landowners/developer representatives to facilitate resolution of the issues that had emerged during the previous meetings. Congressman Ose urged the Federal Agencies to develop a conceptual strategy that would meet the requirements of the Federal Agencies respective statutes. Congressman Ose urged the regulated parties to work cooperatively with the Federal Agencies to explore mechanisms to accommodate the agencies' obligations to comply fully with pertinent Federal laws and regulations, which place a premium on the avoidance of on-site wetlands resources to the extent practicable and the need to avoid jeopardizing the continued existence of threatened and endangered species. In short, the Congressman encouraged the parties to work cooperatively with one another to develop a conceptual onsite avoidance and offsite compensation strategy that reached a proper and workable balance between and amongst the following: the mandates of Federal law; the need to preserve ecosystem integrity and the habitat of endangered and threatened species; the need to acknowledge the planning policies and objectives of the City of Rancho Cordova; and the need to account for the economic realities facing private sector developers. These meetings continued through September 2004.

In June of 2004, the Federal Agencies developed two documents ("A Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area"; and the accompanying planning map) that outline our strategies for conserving threatened and endangered species and wetland habitats and to provide a framework



for development proposals. In addition, our strategy would provide some conceptual guidelines for permitting.

#### Service Correspondence

April 2, 1996, To: A. Champ-Corps of Engineers, Re: Formal Section 7 Consultation on Issuance of 404 Permit for the Sunrise Douglas Project (AKA Anatolia I, II, III), Service File #1-1-96-1-0062, Corps PN 190110021

November 22, 2002, To: M. Finan-Corps of Engineers, Re: Request for additional information on the Sunridge Specific Plan/Sunrise Douglas Community Plan, Service file #1-1-03-I-0411

July 18, 2002, To: D. Nottoli-Sacramento County Board of Supervisors, Re: Sunrise Douglas Community Plan and SunRidge Specific Plan-Service File #1-1-02-CP-2579

April 26, 2004, To: Col. Conrad-Corps of Engineers, Re: SunRidge Specific Plan, Service file #/Corps PN 200000336

#### Consultation History Specific to the Proposed Project

January 25, 2005. Foothill Associates submitted a letter to the Service, providing information about the proposed project. Enclosed was a January 25, 2005, *Draft Grantline 208 Section 7 Biological Assessment*, prepared by Foothill Associates. The Service received this letter and enclosure on January 26, 2005.

September 27, 2005. The Corps submitted a letter to the Service, requesting the initiation of formal consultation on the proposed project. Enclosed was an April 11, 2005, *Grantline 208 Section 7 Biological Assessment*, prepared by Foothill Associates. The Service received this letter and enclosure on September 28, 2005.

February 13, 2006. The Service issued a letter to the Corps, requesting additional information about surveys conducted for federally-listed plant species on the proposed project site (Service file #1-1-05-I-2111).

March 1, 2006. Kelly Fitzgerald and Ken Fuller of the Service met with Ken Whitney and Kyrsten Shields of Foothill Associates during a site visit for another proposed project. During this site visit, Ms. Fitzgerald and Mr. Fuller discussed with Mr. Whitney outstanding informational needs for the consultation on the proposed Grantline 208 project. Mr. Whitney indicated that he would submit the additional information to the Service.

March 11, 2006. Foothill Associates submitted a letter to the Service, providing the results of a focused plant survey on the proposed project site that was conducted in August 2004. Enclosed with this letter were also a copy of the October 2003 focused plant survey report for the proposed project site and the resumes of the botanists who conducted these surveys. The Service received this letter and enclosures on March 13, 2006.

March 24, 2006. Foothill Associates submitted a letter to the Service, providing additional information about the focused plant surveys conducted on the proposed project in 2003 and 2004. The Service received this letter on March 27, 2006.

April 11, 2006. Ellen Berryman of Berryman Ecological emailed additional information about the proposed project's conservation measures to Ms. Fitzgerald.

## BIOLOGICAL OPINION

### Description of the Proposed Action

The following is taken from the June 2004, document titled *A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area*, prepared by the Service, the Corps, and the EPA. This document and the accompanying planning map (Agency map) developed by the three Federal Agencies are hereby incorporated by reference into the project description. Thus, our biological opinion on this proposed action, the Grantline 208 project, is based on application and full implementation of the Federal Agencies' conservation strategy outlined in this document and map, on all future projects in the SDCPA.

"In March through May 2004, representatives of the US Fish and Wildlife Service, US Environmental Protection Agency, and the US Army Corps Engineers (Agencies) met to formulate a conceptual-level strategy for avoiding, minimizing, and preserving aquatic resource habitat in the Sunrise-Douglas Community Plan Area (SDCPA). The intended result of this effort was to achieve reasonable protection and conservation of federally threatened and endangered species under the Endangered Species Act (ESA), while taking a regional approach to avoidance and minimization of impacts to waters of the US, including wetlands, in accordance with Section 404 (b)(1) guidelines under the Clean Water Act. The strategy also endeavors to ensure a viable South Sacramento County Habitat Conservation Plan (HCP) can be developed, given that a large proportion of vernal pool habitat under consideration by the HCP planners is at risk in the SDCPA.

The conceptual-level strategy is represented by preserve areas shown on the map titled Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection dated March 2004. To meet the goals of ESA and the Clean Water Act, the Agencies arrived at the boundaries of the "Preserve Areas" based on best professional judgment and a limited amount of information regarding regional and site-specific biology and hydro-geomorphology (such as wetland delineations, species accounts, and environmental impact reports), while recognizing that development is planned in the area. Of particular focus is the preservation of vernal pool complexes and corridors for Morrison Creek and Laguna Creek. The mapped boundaries are the smallest that would be acceptable to the Agencies and are predicated on ten principles and standards that would be

followed by developers and planners as each element of the overall development proceeds.

The conceptual level strategy should be used by developers and planners to design and plan projects in the SDCPA. The Agencies will use the strategy to aid in the review of proposed development and evaluate the probable individual and cumulative effects on aquatic resources and sensitive species.

The Agencies anticipate that permit decisions and biological opinions will be completed on a case-by-case basis, using site-specific project and aquatic resource habitat information. Each proposed project would be evaluated on its own merits within the larger context of the SDCPA. Depending on the particular hydrology, habitat features, and development plans for a particular parcel, the conceptual preserve boundaries may need to be adjusted to minimize direct and indirect impacts to aquatic resources. Appropriate compensatory mitigation will be developed following demonstrated avoidance and minimization of project impacts.”

The approximately 208-acre proposed Grantline 208 development site is located in southeastern Sacramento County, approximately five miles south of Highway 50, east of Sunrise Boulevard and the Folsom South Canal, and north of Jackson Road (Highway 16), in the City of Rancho Cordova. The proposed project site is situated west of and adjacent to Grantline Road, south of Douglas Road, and north of the proposed Pyramid Boulevard. The proposed Americanos Boulevard bisects the site north to south. The site is located in Section 15 of Township 8 North, Range 7 East, on the U.S. Geological Survey’s (USGS) Buffalo Creek 7.5-minute quadrangle.

The proposed project site is within the 6,042-acre SDCPA located within the Sacramento County General Plan Urban Service Boundary and Policy Area. As shown on the September 2004, Developers Map, the proposed project site is also located within the Sunridge Specific Plan area, which provides a more detailed land use plan for development of approximately 2,632 acres within the SDCPA. The SDCPA is located within the headwaters of both the Morrison Creek and Laguna Creek watersheds. Land uses anticipated in the SDCPA and the Sunridge Specific Plan area, including the proposed project site, include low-, medium-, and high-density residential development, commercial mixed uses (e.g., retail, office, and retail professional) and neighborhood parks. Other planned land uses in the vicinity include elementary, junior and senior high schools.

Historically, the SDCPA, including the proposed project site, has been used for dry land farming and grazing. The surrounding land use is predominantly grassland utilized for cattle grazing and related agricultural activities. A few homesteads, including rural residences, barns, and pens, are scattered around this area. The proposed project site is currently utilized as rangeland for the grazing of cattle.

The proposed Grantline 208 project involves the construction of approximately 111 acres of residential development, an 11.4-acre school site, 0.2 acre of commercial development, and an approximately 68-acre open space wetland preserve, which would be protected in perpetuity. An

additional 9.4 acres of land would be dedicated to roads, easements, and landscaped areas. Required infrastructure (e.g., sewer mains and laterals, water mains, and utility lines) will be developed in association with surrounding projects within the Sunridge Specific Plan area. The proposed land uses for the proposed project site are consistent with the planned land uses set forth in the Sunrise Douglas Community Plan and Sunridge Specific Plan.

The proposed 68-acre wetland preserve would be located in the western third of the proposed project site. Approximately 4.85 acres of vernal pools and 0.26 acre of riverine seasonal wetland would be located within this wetland preserve. While the shape of the proposed wetland preserve is slightly different from the design shown on the Agency map, it appears to be consistent with Service principles.

The proposed project will directly affect approximately 5.55 acres of habitat for vernal pool crustaceans, including 5.22 acres of vernal pools, 0.30 acre of seasonal wetlands, and 0.03 acre of ephemeral drainage. A total of 0.45 acre of vernal pool crustacean habitat, including features located within the proposed 68-acre wetland preserve that are within 250 of the proposed development, would be indirectly affected by the proposed project.

### **Proposed Conservation Measures**

The applicant has proposed conservation measures to avoid, minimize, and compensate for effects to vernal pool fairy shrimp and vernal pool tadpole shrimp that result from the implementation of the proposed project.

#### **1. Habitat Preservation and Restoration**

- a. A total of 6.0 acres of vernal pool crustacean habitat would be directly (5.55 acres) and indirectly (0.45 acre) affected by the proposed project. These direct and indirect effects will be offset through habitat preservation (refer to Tables 1 and 2). Habitat preservation to compensate for direct affects will be achieved partially through the on-site preservation of 4.65 acres of vernal pool crustacean habitat in the proposed 68-acre wetland preserve. The on-site preservation of 4.65 acres would compensate for direct effects to 2.325 acres of vernal pool crustacean habitat (at a ratio of two (2) acres preserved for every one (1) acre directly affected). Additional habitat preservation to compensate for the remaining vernal pool crustacean habitat that would be directly (3.225 acres) and indirectly (0.45 acre) affected will be achieved through either:
  - i. The preservation of an additional 6.90 acres of vernal pool crustacean habitat either at a 158.59-acre parcel known as the "Town Center" property located at the southeast corner of Grantline Road and Jackson Highway, or at the Anatolia Conservation Bank. This would effectively preserve two (2) acres of vernal pool crustacean habitat for every one (1) acre of vernal pool habitat that is directly affected and one (1) acre of habitat for every one (1) acre of habitat that is indirectly affected; or

- ii. The preservation of an additional 13.80 acres of vernal pool crustacean habitat at the Bryte Ranch Conservation Bank or other Service-approved location. This would effectively preserve four (4) acres of vernal pool habitat for every one (1) acre of vernal pool habitat that is directly affected and two (2) acres of habitat for every one (1) acre that is indirectly affected.
- b. At least 90 days prior to any fill of wetlands on the proposed project site, the Service must receive the following for review and approval:
  - i. A Service-approved Perpetual Conservation Easement for the on-site wetland preservation area;
  - ii. A description of the mechanism for funding the monitoring, maintenance, and management of the on-site wetland preservation area; and
  - iii. A Monitoring, Maintenance, and Management Plan for the on-site wetland preservation area.
  - iv. The funding instrument shall be in place and Perpetual Conservation Easement shall be recorded within 90 days following the commencement of filling wetlands on the proposed project site.
- c. Direct and indirect effects to vernal pool crustacean habitat will be further offset through habitat restoration/creation at a 1:1 ratio (refer to Tables 1 and 2). The restoration/creation goal will be to create and enhance wetlands with habitat functions and values equal to, or greater than, the wetland features affected by the implementation of the proposed project. Habitat creation/restoration will be achieved through the restoration of 6.0 acres of vernal pool crustacean habitat at a Service-approved site within Sacramento County that meets the following criteria:
  - i. The restoration site's soils will be appropriate vernal pool soil types (*e.g.*, San Joaquin, Redding, Corning);
  - ii. The restoration site's soil would have been disturbed at some point in the past, either through land leveling, ditching and draining, berming, or other disturbance that has removed or modified edaphic and hydrologic features necessary to support vernal pool habitat; and
  - iii. The restoration site will have a conservation easement, a preserve management plan, and a long-term funding mechanism in place upon Service approval.

**Table 1 – Vernal Pool Crustacean Habitat Effects and Compensation Acreages if Habitat Preservation Occurs at the Town Center Property or at the Anatolia Conservation Bank**

	<b>Acres of Effects</b>	<b>Preservation Compensation (in acres) [2:1 Direct/1:1 Indirect]</b>	<b>Creation Compensation (in acres) [1:1 Direct &amp; Indirect]</b>
Direct Effects	5.55	11.10	5.55
Indirect Effects	0.45	0.45	0.45
<b>TOTAL</b>	<b>6.00</b>	<b>11.55</b>	<b>6.00</b>
On-site Preserve		4.65	
Town Center Property/ Anatolia Conservation Bank		6.90	

**Table 2 – Vernal Pool Crustacean Habitat Effects and Compensation Acreages if Habitat Preservation Credits Purchased at the Bryte Ranch Conservation Bank**

	<b>Acres of Effects</b>	<b>On-site Preservation [2:1 portion of direct]</b>	<b>Off-site Preservation Compensation (in acres) [4:1 Direct/2:1 Indirect]</b>	<b>Creation Compensation (in acres) [1:1 Direct &amp; Indirect]</b>
Direct Effects	5.55	4.65	12.90	5.55
Indirect Effects	0.45	0	0.90	0.45
<b>TOTAL</b>	<b>6.00</b>	<b>4.65</b>	<b>13.80</b>	<b>6.00</b>

*\*Note: These tables do not include portions of directly and indirectly affected vernal pools/wetlands that extend onto adjacent properties north (Douglas 98 and Douglas 103), south (Arista del Sol) of the proposed project site. Those that extend to east are excluded from consideration due to the presence of Grant Line Road.*

## 2. Construction Storm Water Pollution Prevention Plan

- a. Minimize off-site storm water runoff that might otherwise affect surrounding vernal pool crustacean habitat. Measures, which will be implemented during project construction to avoid adverse affects to the open space/wetland preserve and adjacent properties, include the following:
- b. Incorporate standard construction Best Management Practices (BMPs) into construction designs, plans and specifications. Contractors will be required to implement them during construction.
- c. Prepare a Storm Water Pollution Prevention Plan (SWPPP) for the proposed project with the following objectives:



- i. Identify pollutant sources, including sources of sediment, that may affect the quality of storm water discharges from the construction of the proposed project;
  - ii. Identify BMPs to reduce or eliminate pollutants in storm water discharges and authorized non-storm water discharges from the proposed project site during construction;
  - iii. Outline and provide guidance for BMP monitoring;
  - iv. Identify project discharge points and receiving waters;
  - v. Address post-construction BMP implementation and monitoring; and
  - vi. Address sediment / siltation / turbidity and non-visually detectable pollutant monitoring, and outline a sampling and analysis strategy.
- d. The construction BMPS for the proposed project will include the following specific measures for avoiding adverse impacts to the open space preserve and adjacent properties:
- i. Hydroseeding: All constructed slopes adjacent to the preserve will be hydroseeded with a native grassland mix. The hydroseed mix will be applied with a tackifying agent at a rate of at least two tons/acre and based on manufacturer's recommendations. The tackifying agent will be a hydraulic matrix that when applied, and upon drying, adheres to the soil to form a 100% cover that is biodegradable, promotes vegetation, and prevents soil erosion. The hydroseed mix will not be applied before, during, or immediately after rainfall so that the matrix will have an opportunity to dry for a minimum of 24 hours after installation.
  - ii. Sediment and Erosion Control: Certified weed-free straw wattles will be installed at the base of all slopes adjacent to the open space/wetland preserve and along the property lines of the proposed project site. Prior to installation of the straw wattles, a concave key trench approximately two to four inches deep will be contoured along the proposed installation route. Soil excavated for the trenching will be placed on the uphill or flow side of the straw wattles to prevent water from undercutting the straw wattles. Stakes will be driven in on alternating sides of the straw wattles, to hold them in place. The straw wattles will be maintained for a period of time at least until the native grassland vegetation is fully established and the soil is stabilized.
  - iii. Excavated Material: During construction activities associated with the implementation of the proposed project, all excavated materials will be deposited or stored such that this material cannot be washed into any

watercourse, and excess supplies of certified weed-free straw bales and/or sedimentation fencing will be available at the construction site for periodic site-specific use as needed.

- iv. **Staging Areas:** Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. No refueling, storage, servicing, or maintenance of equipment will take place within 100 feet of the open space preserve or adjacent off-site habitat. All machinery will be properly maintained and cleaned to prevent spills and leaks. Any spills or hazardous materials will be reported and cleaned up immediately in accordance with applicable local, state and/or Federal regulations.
- v. **Construction Fencing:** Temporary fencing will be installed prior to construction along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto the open space wetland preserve and adjacent off-site habitat.
- vi. **Construction Monitoring:** A Service-approved environmental monitor will be employed to ensure compliance with construction-related avoidance measures. The monitor will report directly to the City of Rancho Cordova Public Works project manager, and based on reports of non-compliance with environmental requirements, will be authorized to stop work orders and to take actions necessary to prevent damage to the open space wetland preserve and off-site habitat. Monitoring reports will be provided to the City of Rancho Cordova Department of Public Works project manager on a daily basis during initial ground breaking, and on a weekly basis (or more frequently as needed when problems arise) thereafter, until the open space wetland preserve construction is finished.

### **Status of the Species**

The vernal pool tadpole shrimp and vernal pool fairy shrimp were listed as endangered and threatened, respectively, on September 19, 1994 (59 **FR** 48136). The final rule to designate critical habitat for 15 vernal pool species, including these two crustaceans, was published on August 6, 2003 (68 **FR** 46684), with further clarifications on critical habitat designations for listed vernal pool species published in an August 11, 2005, final rule (70 **FR** 46923). Further information on the life history and ecology of the vernal pool fairy shrimp and vernal pool tadpole shrimp may be found in the final listing rule, the final rule to designate critical habitat, Eng *et al.* (1990), Helm (1998), and Simovich *et al.* (1992). The Service's reevaluation of Critical Habitat in 2005 designated several critical habitat units in Sacramento County within Unit 11, but the proposed project is not located in any critical habitat units.

*Life History.* The vernal pool tadpole shrimp has dorsal compound eyes, an approximately one-inch long large shield-like carapace that covers most of its body, and a pair of long cercopods at the end of its last abdominal segment (Linder 1952; Longhurst 1955; Pennak 1989). It is primarily a benthic animal that swims with its legs down. Vernal pool tadpole shrimp climb or scramble over objects, and plow along bottom sediments as they forage for food. Its diet consists of organic detritus and living organisms, such as fairy shrimp and other invertebrates (Pennak 1989; Fryer 1987). The females deposit their eggs on vegetation and other objects on the pool bottom. Tadpole shrimp eggs are known as cysts, and during the dry months of the year, they lie dormant in the dry pool sediments (Lanaway 1974; Ahl 1991).

The life history of the vernal pool tadpole shrimp is linked to the environmental characteristics of its vernal pool habitat. After winter rains fill the pools, its dormant cysts may hatch in as little as four days (Ahl 1991; Rogers 2001), and the animals may become sexually mature within three to four weeks after hatching (Ahl 1991; Helm 1998; King 1996). A portion of the cysts hatch immediately and the rest remain dormant in the soil to hatch during later rainy seasons (Ahl 1991). The vernal pool tadpole shrimp is a relatively long-lived species (Ahl 1991), and will generally survive for as long as its habitat remains inundated, sometimes for six months or more (Ahl 1991; Gallagher 1996; Helm 1998). Adults are often present and reproductive until the pools dry up in the spring (Ahl 1991; Gallagher 1996; Simovich *et al.* 1992).

Vernal pool fairy shrimp have delicate elongate bodies, large stalked compound eyes, no carapace, and 11 pairs of phyllopods, or gill-like structures that also serve as legs. Typically less than one-inch long, they swim or glide gracefully upside-down by means of complex, wavelike beating movements. Fairy shrimp feed on algae, bacteria, protozoa, rotifers, and detritus. The second pair of antennae in adult male fairy shrimp are greatly enlarged and specialized for clasping the females during copulation. The females carry eggs in an oval or elongate ventral brood sac. The eggs are either dropped to the pool bottom or remain in the brood sac until the female dies and sinks. The dormant cysts are capable of withstanding heat, cold, and prolonged desiccation, and they can remain viable in the soil for decades after deposition. When the pools refill in the same or subsequent seasons, some, but not all, of the cysts may hatch. The cyst bank in the soil may therefore be comprised of cysts from several years of breeding (Donald 1983). The early stages of the fairy shrimp develop rapidly into adults and may become sexually mature within two weeks after hatching (Gallagher 1996; Helm 1998). Such quick maturation permits populations to persist in short-lived shallow bodies of water (Simovich *et al.* 1992). In pools that persist for several weeks to a few months, fairy shrimp may have multiple hatches during a single season (Helm 1998; Gallagher 1996).

*Distribution.* Vernal pool tadpole shrimp are found only in ephemeral freshwater habitats, including alkaline pools, clay flats, vernal lakes, vernal pools, vernal swales, and other seasonal wetlands in California (Helm 1998). The vernal pool tadpole shrimp is known from 219 occurrences in the Central Valley (CNDDDB 2005), ranging from east of Redding in Shasta County south to Fresno County, and from a single vernal pool complex located in the San Francisco Bay National Wildlife Refuge in Alameda County. It inhabits vernal pools containing clear to highly turbid water, ranging in size from 54 square feet in the Mather Air Force Base area of Sacramento County, to the 89-acre Olcott Lake at Jepson Prairie in Solano County; the potential ponding depth of occupied habitat ranges from 1.5 inches to 59 inches. Although

vernal pool tadpole shrimp are found on a variety of geologic formations and soil types, Helm (1998) found that over 50 percent of vernal pool tadpole shrimp occurrences were on High Terrace landforms and Redding and Corning soils. Vernal pool tadpole shrimp are uncommon even where vernal pool habitat occurs (Service 2005b). The largest concentration of vernal pool tadpole shrimp occurrences are found in the Southeastern Sacramento Valley Vernal Pool Region, as defined in the Service's *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (2005b). In this vernal pool region, this species occurs on a number of public and private lands in Sacramento County, and from a few locations in Yuba and Placer Counties, including Beale Air Force Base.

Vernal pool fairy shrimp are found only in ephemeral freshwater habitats, including alkaline pools, ephemeral drainages, rock outcrop pools, vernal pools, and vernal swales in California and Southern Oregon (Eriksen and Belk 1999). Occupied habitats range in size from rock outcrop pools as small as 11 square feet to large vernal pools up to 12 acres; the potential ponding depth of occupied habitat ranges from 1.2 inches to 48 inches. The vernal pool fairy shrimp is known from 363 occurrences extending from the Stillwater Plain in Shasta County through most of the length of the Central Valley to Pinnacles in San Benito County (Eng *et al.* 1990; Fugate 1992; Sugnet and Associates 1993; CNDDDB 2005). Five additional, disjunct populations exist: one near Soda Lake in San Luis Obispo County; one in the mountain grasslands of northern Santa Barbara County; one on the Santa Rosa Plateau in Riverside County; one near Rancho California in Riverside County; and one on the Agate Desert near Medford, Oregon (CNDDDB 2005; Helm 1998; Eriksen and Belk 1999; Service 2003). Three of these isolated populations each contain only a single pool known to be occupied by the vernal pool fairy shrimp. Although the vernal pool fairy shrimp is distributed more widely than most other fairy shrimp species, it is generally uncommon throughout its range, and rarely abundant where it does occur (Eng *et al.* 1990; Eriksen and Belk 1999). The greatest number of known occurrences of the vernal pool fairy shrimp are found in the Southeastern Sacramento Vernal Pool Region (see Service 2005b), where it is found in scattered vernal pool habitats in Placer, Sacramento, and San Joaquin Counties, in the vicinity of Beale Air Force Base in Yuba County, and at a single location in El Dorado County.

Although the vernal pool crustaceans addressed in this biological opinion are not often found in the same vernal pool at the same time, when coexistence does occur, it is generally in deeper, longer lived pools (Eng *et al.* 1990; Thiery 1991; Gallagher 1996). In larger pools, vernal pool crustacean species may be able to coexist by utilizing different physical portions of the vernal pool or by eating different food sources (Daborn 1978; Mura 1991; Thiery 1991), or by hatching at different temperatures or developing at different rates (Thiery 1991; Hathaway and Simovich 1996).

*Dispersal.* The primary historic large-scale dispersal method for the vernal pool tadpole shrimp and vernal pool fairy shrimp likely was large scale flooding resulting from winter and spring rains which allowed colonization of different individual vernal pools and other vernal pool complexes (King 1996). This dispersal is currently non-functional due to the construction of dams, levees, and other flood control measures, and widespread urbanization within significant portions of the range of this species. Waterfowl and shorebirds may now be the primary dispersal agents for vernal pool tadpole shrimp and vernal pool fairy shrimp (King 1996;

Simovich *et al.* 1992). The eggs of these branchiopods are either ingested (Krapu 1974; Swanson *et al.* 1974; Driver 1981; Ahl 1991) and/or adhere to the legs and feathers where they are transported to new habitats. Cysts may also be dispersed by a number of other species, such as cattle and humans (Eriksen and Belk 1999).

At the local level, vernal pool crustaceans are often dispersed from one pool to another through surface swales that connect one vernal pool to another. These dispersal events allow for genetic exchange between pools and create a population of animals that extends beyond the boundaries of a single pool. These dispersal events also allow vernal pool crustaceans to move into pools with a range of sizes and depths. In dry years, animals may only hatch in the largest and deepest pools. In wet years, animals may be present in all pools. The movement of vernal pool crustaceans into vernal pools of different sizes and depths allows these species to survive the environmental variability that is characteristic of their habitats.

The genetic characteristics of these species, as well as ecological conditions, such as watershed continuity, indicate that populations of vernal pool crustaceans are defined by pool complexes rather than by individual vernal pools (Fugate 1992). Therefore, the most accurate indication of the distribution and abundance of these species is the number of inhabited vernal pool complexes. The pools and, in some cases, pool complexes supporting these species may be small. Human-caused and unforeseen natural catastrophic events such as long-term drought, non-native predators, off-road vehicles, pollution, berming, and urban development, threaten their extirpation at some sites. Vernal pool fairy shrimp and vernal pool tadpole shrimp continue to be threatened by all of the factors which led to the original listing of this species, primarily habitat loss through agricultural conversion and urbanization (CNDDB 2005).

*Reasons for Decline and Threats to Survival.* The vernal pool tadpole shrimp and vernal pool fairy shrimp are imperiled by a variety of human-caused activities. Their habitats have been lost through direct destruction and modification due to filling, grading, disking, leveling, and other activities. In addition, vernal pools have been imperiled by a variety of anthropogenic modifications to upland habitats and watersheds. These activities, primarily urban development, water supply/flood control projects, land conversion for agriculture, off-road vehicle use, certain mosquito abatement measures, and pesticide/herbicide use can lead to disturbance of natural flood regimes, changes in water table depth, alterations of the timing and duration of vernal pool inundation, introduction of non-native plants and animals, and water pollution. These can result in adverse effects to vernal pool species.

In addition to direct loss, the habitats of the vernal pool tadpole shrimp and the vernal pool fairy shrimp have been and continue to be highly fragmented throughout their ranges due to conversion of natural habitat for urban and agricultural uses. Fragmentation results in smaller isolated shrimp populations. Ecological theory predicts that such populations will be highly susceptible to extirpation due to chance events, inbreeding depression, or additional environmental disturbance (Gilpin and Soulé 1988; Goodman 1987a, 1987b). If an extirpation event occurs in a population that has been fragmented, the opportunities for re-colonization would be greatly reduced due to geographic isolation from other source populations. Historically, vernal pools and vernal pool complexes occurred extensively throughout the Sacramento Valley of California. Conversion of vernal pools and vernal pool complexes.

however, has resulted in a 91 percent loss of vernal pool resources in California (State of California 2003d). By 1973, between 60 and 85 percent of the area within the Central Valley that once supported vernal pools had been destroyed (Holland 1978). In subsequent years, threats to this habitat type have continued and resulted in a substantial amount of vernal pool habitat being converted for human uses in spite of Federal regulations implemented to protect wetlands. The Corps' Sacramento District has several thousand vernal pools under its jurisdiction (Coe 1988), which includes most of the known populations of these listed species. Between 1987 and 1992, 467 acres of wetlands within the Sacramento area were filled pursuant to the Corps' Nationwide Permit 26 (Service 1992). A majority of those wetlands losses involved vernal pools, the endemic habitat of the vernal pool tadpole shrimp and the vernal pool fairy shrimp. King (1996) has estimated that approximately 15 to 33 percent of the original biodiversity of Central Valley vernal pool crustaceans has been lost since the 1800s. On-going and increasing amounts of human activities are expected to contribute to the extensive loss upwards of 60 to 70 percent—of remaining vernal pools (Coe 1988).

### **Environmental Baseline**

*Status of the Species in the Action Area.* Sacramento County represents important, high quality habitat for the two shrimp populations by providing large, nearly contiguous areas of relatively undisturbed vernal pool habitat. Sacramento County contains the greatest number of occurrences of vernal pool tadpole shrimp within the range of the species, and also is one of the two counties with the greatest number of occurrences of vernal pool fairy shrimp within the range of the species. Sacramento County contains 58 (17 percent) out of the total of 375 reported occurrences of vernal pool fairy shrimp, and 59 (33 percent) out of the total of 175 reported occurrences of vernal pool tadpole shrimp (CNDDB 2005). Further, Sugnet and Associates (1993) reported that of 3,092 “discrete populations” checked, only 345 locations, or about 11 percent of all locations checked, were found to support the vernal pool tadpole shrimp. Of these 345 locations supporting the vernal pool tadpole shrimp, 219 (63 percent) were in Sacramento County. Further, of the 3,092 locations checked, 178 locations (6 percent) were found to support the vernal pool fairy shrimp. Of this total, 63 locations (35 percent) were within Sacramento County.

Throughout the Central Valley, approximately 13,000 acres of vernal pool habitats, including mitigation banks, have been set aside for the vernal pool fairy shrimp specifically as terms and conditions of section 7 consultations (Service 2005b). In the Southeastern Sacramento Valley Vernal Pool Region, vernal pool fairy shrimp occurrences are protected from development at a number of private mitigation areas, compensation banks, private ranches with conservation easements, and the Beale Air Force Base in Yuba County. Very few actions have been taken specifically to benefit the vernal pool tadpole shrimp, although several Habitat Conservation Plans are developing vernal pool conservation plans in the region, including Sacramento and Placer Counties (Service 2005b).

The vernal pools on the proposed project site are classified as the old-terrace type and are located on soils associated with Laguna geologic formation. Old-terrace is a rapidly disappearing habitat type in Sacramento County that consists of ancient river channel deposits that were laid down from 600,000 to more than one million years ago by the American River. By comparison, young



terrace formation dates from 100,000 to 200,000 years ago. Old-terrace formation generally has a higher density of vernal pools, deeper pools, and a greater number of special status plants and crustaceans than young-terrace formations. Some special status species found in old-terrace pools may have evolved from species inhabiting shores of ancient lakes in the Central Valley. Old-terrace pools may have served as refugia for these species as the lakes disappeared (pers. comm., K. Fuller, Service, 2004). Sacramento County contains an estimated 764 wetted acres of vernal pools on low terrace, 1,390 wetted acres of vernal pools on high terrace, and 189 wetted acres of vernal pools on volcanic mudflow.

There are two predominant soil types found within south Sacramento County. The Valley Springs soil type typifies Gill Ranch, located in Sacramento County, approximately 12 miles southeast of the proposed project site. Vernal pools found within the Valley Springs soil type are the young-terrace formation. Young-terrace formations, because they have a higher slope gradient, tend to have fewer vernal pools that are typically smaller and shallower. These vernal pools also are inundated for shorter durations. These factors typically result in lower species diversity. Generally, the larger the vernal pool on this soil type, the higher its biotic diversity. Vernal pool fairy shrimp, vernal pool tadpole shrimp, and Sacramento Orcutt grass are less likely to occur in young-terrace formation vernal pools found on Valley Springs soils. (pers. comm., R. Holland, 2004).

The Laguna geologic formation and its associated soils entirely characterize the SDCPA. Vernal pools found within this soil type are old-terrace types. Old-terrace types, because they have a lower slope gradient, tend to have pools that are larger, deeper, and clearer. These pools are inundated for longer periods, but dry and refill less often than the Valley Springs soil type. Generally, the smaller the vernal pool on this soil type, the higher its invertebrate diversity. Although vernal pool fairy shrimp occur in pools on both soil types, they are more frequently found in pools on Laguna soils. Vernal pool tadpole shrimp are found almost exclusively in old-terrace formation vernal pools found on Laguna soils.

Several areas containing old-terrace formation have been protected for their high quality vernal pool habitat and high concentration of special status species populations by the Sacramento Valley Conservancy (SVC). The proposed contiguous preserve area, the SVC's Vernal Pool Prairie Preserve, would cover 2,000 to 3,000 acres and supports a variety of special status plants and animals on relatively undisturbed grasslands containing young and old terrace formations and northern hardpan vernal pools. Within the proposed Prairie Preserve, areas already protected include the Arroyo Seco Mitigation Bank, the Excelsior 184 parcel, and the Sacramento County owned Multi-Cultural Park; outside of the proposed Prairie Preserve, the Sunrise Douglas Preservation Bank, and a portion of Howard Ranch are protected. All of these preserves are within proposed critical habitat for the two listed vernal pool crustaceans addressed in this biological opinion.

*Factors Affecting the Species within the Action Area.* A number of State, local, private, and unrelated Federal actions have occurred within the project area and adjacent region affecting the environmental baseline of these species. Some of these projects have been subject to prior section 7 consultation. Based on an informal review, the Service has issued, to date, approximately 195 biological opinions to Federal agencies on proposed projects in Sacramento

County that have adversely affected the shrimp species since the two species were proposed to be listed in 1994. This total does not reflect the formal consultations that were withdrawn, those that are suspended, those that have insufficient information to conclude an effects analysis, those that were amended, or conference opinions. No State of California actions that have taken place within Sacramento County have adversely affected the species in the action area. Although these proposed projects in Sacramento County have eliminated vernal pools and vernal pool complexes, the offsetting compensating measures are designed to minimize the effects of take of these species resulting in both negative and positive effects to the species. The trend for the two vernal pool species within the county, however, is most likely downward as the current rate of habitat preservation is less than the rate of historical and current habitat loss.

On-going residential and commercial developments within Sacramento County also affect the listed vernal pool crustaceans and their habitats. Human population growth in Sacramento County has steadily increased. For the period between 1990 and 2000, population growth in Sacramento County increased 17.5 percent, with an average annual growth rate of 17.5 percent (State of California 2002). The annual growth appears to be increasing, as demonstrated by the 2.63 percent and 2.2 percent increases in population growth in 2001 and 2002, respectively (State of California 2003a, 2003b). Increased housing demand and urban development accompany the population growth in Sacramento County. Between 1990 and 2000, housing units in Sacramento County increased by 1.37 percent annually (State of California 2000, 2003c). Population growth and concomitant housing demand and subsequent loss of vernal pool habitat are projected to continue. Population projections for Sacramento County are expected to increase above 2000 levels by 19.7 percent in 2010, by 28 percent in 2015, and by 37.5 percent in 2020 (State of California 2001).

In south Sacramento County, the Urban Services Boundary (USB) is a planning boundary that coincides with the areas north of the Cosumnes River/Deer Creek drainage system. Between 1993 and 2000, an estimated 14,950 acres were converted to urban development within the USB (pers. comm. D. Gifford, CDFG, 2004), based on an analysis of California Department of Water Resources mapping data. An independent analysis of urban growth in Sacramento County estimated that 22,000 acres were converted between 1990 and 2000, averaging 2,200 acres per year (pers. comm. R. Radmacher, Sacramento County, 2004). As of 1998 (the most recent year for which vernal pool mapping from aerial photographs is available), there remained an estimated 23,533 acres of vernal pool grasslands within the USB, supporting approximately 946 acres of wetland vernal pool acreage (pers. comm. L. Kondc, CDFG, 2003).

The actions listed above have resulted in both direct and indirect impacts to vernal pools within the region, and have contributed to the loss of vernal pool tadpole shrimp and vernal pool fairy shrimp populations. Although a reduction of the two shrimp populations has not been quantified, the acreage of lost habitat continues to grow.

*Vernal Pool Crustacean Presence in the Proposed Action Area.* Vernal pool complexes, occurring north of the Cosumnes River/Deer Creek drainage and within the USB, contain a high density of occupied pools of both vernal pool tadpole shrimp and vernal pool fairy shrimp. There are 31 known occurrences of vernal pool tadpole shrimp inside the USB, compared to 17 occurrences outside the USB (CNDDDB 2005). There are 25 known occurrences of vernal

pool fairy shrimp inside the USB, compared to 18 occurrences outside the USB (CNDDDB 2005). The data from the CNDDDB do not reflect additional reported records in the Sunrise-Douglas area, where 137 occurrences of vernal pool tadpole shrimp and 46 occurrences of vernal pool fairy shrimp have been recorded.

Both vernal pool fairy shrimp and vernal pool tadpole shrimp have been documented to occur within the Sunridge Specific Plan area, including the proposed project site. Focused surveys for vernal pool crustaceans were conducted on the parcels within the Sunridge Specific Plan area using the Service's current Dip Net protocol between February and March of 1993 by Sugnet and Associates (1993). The results of these surveys indicated the presence of California linderiella (*Linderiella occidentalis*) from four discrete locations and vernal pool fairy shrimp from one location; vernal pool crustaceans were identified on the proposed Grantline 208 project site. All of the vernal pools and seasonal wetlands on the proposed project site provide appropriate habitat for both vernal pool fairy shrimp and vernal pool tadpole shrimp. Because these species are known from other parcels within the SDCPA and vicinity, and it is likely the vernal pool crustaceans would disperse within the watershed between the project sites, the applicant assumes presence of vernal pool fairy shrimp and vernal pool tadpole shrimp in all suitable habitat on the proposed project site (Foothill Associates 2005). Therefore, construction of the proposed project in any portion of the proposed project site that supports suitable habitat is likely to adversely affect populations of vernal pool fairy shrimp and vernal pool tadpole shrimp.

### **Effects of the Proposed Action**

Although vernal pool fairy shrimp and vernal pool tadpole shrimp exhibit slightly differing habitat requirements and life cycles, they often inhabit the same vernal pool complexes and have been known to co-occur in individual vernal pools. These species are supported by similar habitat types, including vernal pools, seasonally ponded areas within vernal swales, rock outcrop ephemeral pools, playas, alkali flats, and other depressions that hold water of similar volume, depth, area, and duration. Therefore, both species are subject to a common set of threats and considerations.

#### Direct Effects

Direct effects are the immediate effects of the proposed project on the species or its habitat and include the effects of interrelated action and interdependent actions. Interrelated actions are those actions that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those actions that have not independent utility apart from the proposed action (50 CFR §402.02).

The proposed project would result in fill of 5.55 acres of vernal pool crustacean habitat, including 5.22 acres of vernal pools, 0.30 acre of riverine seasonal wetlands, and 0.03 acre of ephemeral drainage. The Service considers an entire vernal pool or seasonal wetland to be directly affected when even a portion of it is filled or subject to similar direct affects.

### Interrelated and Interdependent Actions

Additional effects from interrelated and interdependent actions are expected from the proposed project. Approximately 115 acres of vernal pools are present in the entire Sunridge Specific Plan area (Foothill Associates 2005). The Corps issued a permit for the largest project in this area, the approximately 1,225-acre Anatolia I, II, III property that included approximately 71 acres of vernal pools (Corps file number 190110021). This Corps permit authorized fill of approximately 27 acres of vernal pool crustacean habitat, and required the preservation of 44 acres of vernal pools within a 482-acre on-site preserve. With the exception of this preserve and a designated open space area along Laguna Creek near Grant Line Road, the Sunridge Specific Plan land use designations and zoning provide for urban land use throughout the plan's areas.

In 2004, the Federal Agencies developed two documents ("A Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area"; and the accompanying planning map [Agency map]) that outline our strategies for conserving threatened and endangered species and wetland habitats and to provide a framework for development proposals. The conceptual design consists of two preserve areas, one entirely within the Sunridge Ranch project site (i.e., the Western Preserve) and one that incorporates portions of Sunridge Park, Douglas 103, Pappas/Arista del Sol, and the proposed project site (i.e., the Eastern Preserve). The approximately 50-acre Western Preserve was designed to protect populations of slender Orcutt grass, vernal pool fairy shrimp, and vernal pool tadpole shrimp. The approximately 161-acre Eastern Preserve would be designed to protect the headwaters of one of the forks of Morrison Creek as well as habitat for listed vernal pool crustaceans. The combined total of approximately 211 acres of wetland preserves would protect 17.32 acres of vernal pool crustacean habitat (Foothill Associates 2005). These preserves would be protected through conservation easements aimed at protecting preserve functions and values; the easements would be held and managed by a habitat management-focused non-profit entity, chosen by the land owners and approved by the Federal Agencies. These preserves would be managed and funded in perpetuity according to a preserve management plan prepared by landowners and approved by the Federal Agencies.

Development of the SDCPA will require the extension of certain utilities and the enlargement of certain roads in areas outside of the SDCPA boundary. Utility improvements include the development of a well field, water supply lines, and water treatment facilities and sewer lines. Well locations have all been sited to avoid affects to aquatic habitats. The water treatment facility will be located on land permitted for take in the Anatolia project (Service file number 1-1-F-96-0062) within the SDCPA boundary. All offsite road improvements and the sewer and water lines will be constructed in existing rights-of-way with affects to aquatic resources totaling less than one-half of an acre (Foothill Associates 2005).

All infrastructure improvements are required to serve the already permitted Anatolia project. Road improvement projects will be planned to provide service to Anatolia and the remaining projects within the SDCPA. Jaeger Road, an existing two-lane, partially paved road, will be paved from Douglas Road, south to Pyramid Road. Pyramid Road, an existing dirt road, will be improved from Sunrise Boulevard to Jaeger Road. The two road improvements are not expected to result in an appreciable loss of vernal pool crustacean habitat (Foothill Associates 2005). The

development of the Sunridge Specific Plan area for residential and commercial purposes would be facilitated by the proposed road widening project.

Continuing development in southern Sacramento County requires the installation of supporting infrastructure, such as sewer interceptors. The proposed Laguna Creek Interceptor would carry waste from developments that are scheduled for the Laguna area. The exact route of the proposed Laguna Creek Interceptor is not known at this time; however the proposed project could have both direct and indirect effects on listed vernal pool crustaceans, and other listed species. The proposed Laguna Creek Interceptor, approximately 87,000 feet in length, would extend eastward from the Sacramento Regional Water Treatment Plant (SRWTP) to east of Sunrise Boulevard (SRCSD 2000). The proposed Laguna Creek Interceptor would service an area which extends northwest from the intersection of Bradshaw and Calvin Roads nearly to the intersection of White Rock and Scott Roads, including the entire proposed Sunrise-Douglas development. This proposed interceptor would also provide tie-ins for the future Deer Creek Interceptor, approximately 90,000 feet in length, which is proposed for construction between 2021 and 2032, and the Aerojet Interceptor, approximately 55,000 feet in length, which is proposed for construction between 2014 through 2033 (SRCSD 2000). These two interceptors would eventually service areas east of Grant Line Road and northeast of Sunrise Road, respectively. Construction for the proposed Laguna Creek Interceptor is proposed for 2010 through 2024.

These future projects may adversely affect several federally-listed species, including the vernal pool crustaceans, the giant garter snake (*Thamnophis gigas*), the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), the California tiger salamander, the California red-legged frog (*Rana aurora draytonii*), the Delta smelt (*Hypomesus transpacificus*) and its designated critical habitat, and the slender and Sacramento Orcutt grasses.

Currently, a South Sacramento Habitat Conservation Plan (SSHCP) is being developed. So therefore, while development activities in south Sacramento County may negatively affect vernal pool crustaceans and other listed species and their habitats, the SSHCP, if completed, will eventually ensure that development activities would avoid, minimize, and compensate for take of listed species to the greatest extent possible. The SSHCP would address the indirect affects of facilitated planned development that results from the interrelated and interdependent actions that result from the proposed project. At minimum, the SSHCP will address the Federal and state listed species known at this time that may be affected by actions that are reasonably foreseeable as a result of the proposed action. Additional HCP-covered species may be added as the HCP is being developed. The SSHCP will be coordinated with CDFG and will include any appropriate State listed species. The SSHCP will address actions that are within the land use authority of Sacramento County and are reasonably foreseeable as a result of the proposed action, including land use approvals that are related to entitlements. Additional activities may be added as the SSHCP is developed. The SSHCP will cover a cumulative effects boundary area that is reasonably foreseeable as a result of the proposed project and the future projects.

### Indirect Effects

Indirect effects are caused by or result from the proposed action, are later in time, and are reasonably certain to occur. Indirect effects may occur outside of the area directly affected by the action (50 CFR §402.02).

Indirect effects to vernal pools in the project vicinity that could result from the implementation of the proposed project include hydrologic alteration, habitat fragmentation, disturbances from construction equipment, non-point source pollution, and impacts from human encroachment. The Service considers all vernal pool crustacean habitat not considered to be directly affected but within 250 feet of proposed construction activities to be indirectly affected by project implementation. Indirectly affected habitat includes all habitat supported by future destroyed areas and swales, and all habitat otherwise damaged by loss of watershed, human intrusion, introduced species, and pollution that will be caused by the proposed project.

The proposed project could result in indirect effects to a total of 0.45 acre of suitable vernal pool crustacean habitat. Although these features exist on land that is proposed for the on-site wetland preserve, these features will be indirectly affected by construction activities occurring within 250 feet of them. Indirect effects to vernal pools in the project vicinity that could result from the proposed project include hydrologic alteration, disturbance from construction equipment, non-point source pollution, and impacts from human encroachment. Individual crustaceans and their cysts, which may inhabit these vernal pools and seasonal wetlands, may be injured or killed by any of the following indirect effects:

*Erosion* - The ground disturbing activities in the watershed of vernal pools associated with the proposed project action area are expected to result in siltation when pools fill during the wet season following construction. Siltation in pools supporting listed crustaceans may result in decreased cyst viability, decreased hatching success, and decreased survivorship among early life history stages, thereby reducing the number of mature adults in future wet seasons. The proposed project construction activities could result in increased sedimentation transport into vernal pool crustacean habitats during periods of heavy rains.

*Changes in hydrology* - The biota of vernal pools and swales can change when the hydrologic regime is altered (Bauder 1986, 1987). Survival of aquatic organisms like the vernal pool fairy shrimp and vernal pool tadpole shrimp are directly linked to the water regime of their habitat (Zelder 1987). Therefore, construction near vernal pool areas will, at times, result in the decline of local sub-populations of vernal pool organisms, including fairy shrimp and tadpole shrimp.

*Introduction of non-natives* - There is an increased risk of introducing weedy, non-native plants into the vernal pools both during and after project construction due to the soil disturbance from clearing and grubbing operations, and general vegetation disturbance associated with the use of heavy equipment.

*Chemical contamination* - The runoff from chemical contamination can kill listed species by poisoning. Oils and other hazardous materials associated with construction equipment could be conveyed into the vernal pool crustacean habitats by overland runoff during the rainy season,



thereby adversely affected water quality. Many of these chemical compounds are thought to have adverse effects on all of the listed vernal pool crustaceans and/or their cysts. Individuals may be killed directly or suffer reduced fitness through physiological stress or a reduction in their food base due to the presence of these chemicals.

*Insecticide Contamination* – Recent research suggests that pyrethroid insecticide use in residential developments will cause toxicity, and even mortality, to aquatic species (Weston *et al.*, in press). The application of these insecticides, and subsequent runoff into aquatic features surrounding residential developments, was demonstrated to be a limiting factor for aquatic invertebrates; in fact, the abundance of resident macroinvertebrates was inversely correlated with concentrations of pyrethroid insecticides (Weston *et al.*, in press).

The proposed project will contribute to a local and range-wide trend of habitat loss, fragmentation, and degradation—the principle reasons that the vernal pool tadpole shrimp and vernal pool fairy shrimp have declined and were given protection under the Act. The proposed project, in combination with ongoing loss of habitat, will contribute to the fragmentation and reduction of the acreage of the remaining listed vernal pool crustacean habitat located in south Sacramento County and is expected to lead to the reduction in the range of both of these listed vernal pool crustaceans.

### **Cumulative Effects**

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Large areas within south Sacramento County, including the SDCPA, have been designated for development in the next 20 years under the Sacramento General Plan. The timeline for development in these areas began in the early 1990s and is expected to continue for the next 5 to 10 years. This growth and conversion would contribute to several potentially significant effects to listed species, including loss, alteration, or degradation of habitat, particularly of wetlands, degradation of water quality, and increases in the frequency and intensity of flooding.

A number of on-going and proposed projects could contribute to adverse effects to vernal pool crustaceans within Sacramento County, particularly in the vicinity of the proposed project. In most cases, however, these actions would be subject to Federal review and would, therefore, not be considered cumulative to the proposed project. For instance, several large highway and light rail construction, road improvement, water transfer, and utility and interceptor installation projects are currently planned or underway in south Sacramento County. These projects will contribute to the loss and degradation of habitats of listed species across their range, particularly in south Sacramento County. These activities may alter vernal pool crustacean habitats and can potentially harass, harm, injure, or kill these species. Because these activities have a Federal nexus, the Service will analyze these projects to determine if they will result in the jeopardy of federally-listed species and/or adverse modification and destruction of critical habitat for these species. An undetermined number of future projects that alter the habitat of vernal pool

crustaceans, however, could go forward without the need for a Corps 404 permit. Activities that would potentially affect listed vernal pool crustaceans include development associated with urban, water, flood control, highway/roadway and utility projects, application of herbicides/pesticides, conversion to agricultural use, and indirect effects of adjacent development such as urban run-off altering the hydrologic regime.

The Service is aware of other projects currently under review by the State, County, and local authorities where biological surveys have documented the occurrence of federally-listed species. These projects include such actions as urban expansion, water transfer projects that may not have a Federal nexus, and continued agricultural development. The cumulative effects of these known actions pose a significant threat to the eventual recovery of these species. Because the vernal pool tadpole shrimp and vernal pool fairy shrimp are endemic to vernal pools in the Central Valley, coastal ranges, and a limited number of sites in the transverse range and Santa Rosa plateau of California, the Service anticipates that a wide range of activities will affect these species. Such activities include, but are not limited to: (1) urban development, (2) water projects, (3) flood control projects, (4) highway projects, (5) utility projects, (6) chemical contaminants, and (7) conversion of vernal pools to agricultural use. Many of these activities will be reviewed under section 7 of the Act as a result of the Federal nexus provided by section 404 of the Federal Water Pollution Control Act, as amended (Clean Water Act).

The proposed project is located in a region where future destruction and modification of vernal pool crustacean habitat is anticipated. Sacramento County will continue to develop within the County's sphere of influence. This development will result in increased direct loss of habitats for these listed species. Continued loss of these habitats throughout the region could conceivably affect the genetic diversity of the local population(s) of listed vernal pool crustaceans. Any loss of genetic diversity can have significant effects on a population's ability to respond to environmental change over time (Frankel and Soulé 1981). Within the proposed action area, the predominant types of non-federal actions that might affect the listed vernal pool crustaceans consist of residential and commercial development, with effects the same as, or similar to, those described above.

## **Conclusion**

After reviewing the current status of the vernal pool fairy shrimp and vernal pool tadpole shrimp, the environmental baselines for the area covered by this biological opinion, the effects of the proposed project, and the cumulative effects, it is the Service's biological opinion that the Grantline 208 project, as proposed, is not likely to jeopardize the continued existence of these species. Critical habitat has been designated in Sacramento County for the vernal pool fairy shrimp or the vernal pool tadpole shrimp, although the proposed project is not located within critical habitat designated for these listed species. Therefore, the proposed project is not likely to destroy or adversely modify designated critical habitat for both the vernal pool fairy shrimp and the vernal pool tadpole shrimp, or any other listed species.

## INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by the Corps so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to require any entity participating in the project to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

### Amount or Extent of Take

The implementation of the proposed project will directly affect 5.55 acres and indirectly affect 0.45 acre of vernal pool crustacean habitat. The Service anticipates incidental take of vernal pool tadpole shrimp and vernal pool fairy shrimp will be difficult to detect or quantify for the following reasons: the aquatic nature of the organisms and their relatively small body size make the finding of a dead specimen unlikely; losses may be masked by seasonal fluctuations in numbers and other causes; and the species occurs in habitat that makes them difficult to detect. Due to the difficulty in quantifying the number of vernal pool fairy shrimp and vernal pool tadpole shrimp that will be killed as a result of the proposed action, the Service is quantifying take incidental to the project as the number of acres of vernal pool crustacean habitat that will become unsuitable for the listed species due to direct or indirect affects as a result of the proposed project. Therefore, the Service estimates that all vernal pool fairy shrimp and vernal pool tadpole shrimp inhabiting 6.0 acres of vernal pool crustacean habitat will harassed, harmed, injured, or killed, as a result of the proposed project.

Upon implementation of the following reasonable and prudent measures, all vernal pool fairy shrimp and vernal pool tadpole shrimp inhabiting 6.0 acres of vernal pool crustacean habitat will become exempt from the prohibitions described under section 9 of the Act for direct and indirect effects associated with the proposed Grantline 208 project. The listed vernal pool crustaceans

may be harmed, harassed or killed in association with the acres exempted under Section 9 of the Act. No other forms of take are authorized under this opinion.

### **Effect of the Take**

In the accompanying biological opinion, the Service has determined that this level of anticipated take is not likely to result in jeopardy to the vernal pool tadpole shrimp and vernal pool fairy shrimp. The proposed project is not likely to result in destruction or adverse modification of designated critical habitat for the vernal pool fairy shrimp and vernal pool tadpole shrimp because no critical habitat for these species has been designated in the proposed action area.

Upon implementation of the following reasonable and prudent measures, incidental take associated with the proposed project on the vernal pool fairy shrimp and vernal pool tadpole shrimp in the form of harm, harassment, and mortality in the form of habitat degradation will become exempt from the prohibitions described under section 9 of the Act for direct and indirect effects.

### **Reasonable and Prudent Measures**

The Service has determined that the following reasonable and prudent measure is necessary and appropriate to minimize the effects of the proposed project on the vernal pool tadpole shrimp and vernal pool fairy shrimp.

1. Minimize the direct and indirect impacts to federally listed vernal pool crustaceans resulting from habitat modification and habitat loss in the Sunrise Douglas Community Plan Area.

### **Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the Act, the Corps must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

1. The Corps shall fully implement the principles and standards outlined in the document titled, "June 2004 Conceptual Strategy for Avoiding Minimizing and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area", for this project.
2. The Corps shall fully implement the March 2004 map titled, "Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection" for this project.
3. The Corps shall assure all conservation measures as proposed by the project proponent (pages 9-12 of the *Grantline 208 Section 7 Biological Assessment* (Foothill Associates 2005) and identified by the Service on pages 6-10 in the project description of our biological opinion are fully implemented.

4. The Corps shall assure the following “Best Management Practices” are implemented during project construction:
  - a. The project proponent shall include a copy of this biological opinion within its solicitations for construction of the proposed project, making the prime contractor responsible for implementing all requirements and obligations included within the biological opinion, and to educate and inform all other contractors involved in the project as to the requirements of the biological opinion. The project proponents shall make the terms and conditions in this biological opinion a required item in all contracts for the project that are issued by the County to all contractors. The project proponents shall provide the Division Chief of Endangered Species (Central Valley) at the Sacramento Fish and Wildlife Office with a hardcopy of the contract(s) for this project at least ten (10) working days before it is accepted or awarded.
  - b. The project proponents shall submit the names and curriculum vitae of the biological monitor(s) for the project at least 30 calendar days prior to ground-breaking.
  - c. A Service-approved biologist must be on-site during all construction-related activities that occur within 250 feet of vernal pool crustacean habitat, and that could result in the take of these federally-listed species. The biologist will have the authority to halt any action that might result in take of listed species. If the biologist exercises this authority, the Service and the CDFG shall be notified by telephone and letter within one (1) working day.
  - d. A Worker Environmental Awareness Training Program for construction personnel shall be conducted before the commencement of construction. The program shall provide workers with information on their responsibilities with regard to the listed vernal pool crustaceans, an overview of the life-history of the species, information on take prohibitions, and an explanation of the relevant terms and conditions of this biological opinion. Written documentation of the training must be submitted to the Sacramento Fish and Wildlife Office within three (3) working days of the completion of instruction.
  - e. Prior to groundbreaking, high-visibility fencing that is at least 5 feet tall shall be placed along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto adjacent off-site habitat and the onsite wetland preserve. Such fencing will be inspected by the on-site biologist at the beginning of each work day and maintained in good condition. The fencing may be removed only when the construction of the project is completed.
  - f. During construction operations, the number of access routes, number and size of staging areas, and the total area of the proposed project activity will be limited to the minimum necessary. Routes and boundaries will be clearly demarcated. Movement of heavy equipment to and from the project site will be restricted to established roadways to minimize habitat disturbance, and all vehicle traffic on access roads will observe a speed limit of 20 miles per hour.

- g. To control erosion during and after implementation of the project, the applicant will implement best management practices (BMPs), as identified by the Central Valley Regional Water Quality Control Board. Erosion control measures and BMPs, which retain soil or sediment, runoff from dust control, and hazardous materials on the construction site and prevent these from entering the vernal pool complexes, will be placed, monitored, and maintained throughout the construction operations. These measures and BMPs may include, but are not limited to, silt fencing, sterile hay bales, vegetative strips, hydroseeding, and temporary sediment disposal. The Stormwater Pollution Prevention Plan (SWPPP) described in the Proposed Conservation Measures section on pages 8-10 of this biological opinion shall include these and any other measures necessary to prevent the discharge of contaminated runoff onto the onsite wetland preserve and adjacent offsite wetland habitats. This SWPPP should be submitted to the Service for review and approval at least 90 days prior to any ground-breaking activity on the proposed project site.
  - h. All heavy equipment, vehicles, and supplies will be stored at the designated staging area at the end of each work period. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the open space/wetland preserve and offsite wetland avoidance areas. Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. All fueling, cleaning, maintenance, and staging of vehicles and other equipment will occur only within designated areas and at least 250 feet away from the open space/wetland preserve and any off-site vernal pool crustacean habitats. All machinery will be properly maintained and cleaned to prevent spills and leaks. The applicant will ensure contamination of habitat does not occur during such operations. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately in accordance with applicable local, state and/or Federal regulations. Such spills will be reported in the post-construction compliance reports.
  - i. No clearing of vegetation and scraping, or digging, of soil in the avoided/preserve area
5. The Corps shall ensure that applicant avoids activities that would impact the onsite avoided area/preserve areas such as:
- a. Alteration of topography within the preserve;
  - b. Placement of any new structures (including outfalls, culverts, electrical/gas transmission lines) within the preserve unless specifically addressed in the project description;
  - c. Dumping, burning, and/or burying of rubbish, garbage, or any other wastes and fill materials in the preserve area;



- d. Fire protection activities not required to protect existing structures at the proposed project site; and
  - e. Use of pesticides or other toxic chemicals in the preserve unless addressed in the project description of subsequent management plans.
6. The Corps shall ensure the applicant complies with the *Reporting Requirements* of this biological opinion.
7. The applicant has proposed to offset direct and indirect effects of vernal pool crustacean habitat loss through a combination of on-site and offsite habitat preservation, as described in the Proposed Conservation Measures section on pages 6-8 of this biological opinion. Prior to any fill of wetlands on the proposed project site, credits commensurate with acreage commitment shall be dedicated within a Service-approved habitat preservation bank and documentation provided to the Service. If the applicant chooses not to use an approved preservation bank, then at least 120 days prior to construction, the applicant shall submit documentation of the preservation habitat including conservation easement, management plan, funding instrument, easement holder etc. for our approval.
8. The applicant has proposed to offset direct and indirect effects of vernal pool crustacean habitat through habitat restoration or creation, as described in the Proposed Conservation Measures section on pages 6-8 of this biological opinion. Prior to any fill of wetlands on the proposed project site, credits commensurate with acreage commitment shall be dedicated within a Service-approved habitat restoration/creation bank. If the applicant chooses not to use an approved creation/restoration bank, then at least 90 days prior to construction, the applicant shall submit documentation of the creation/restoration habitat including: construction plan, conservation easement, management plan, funding instrument, easement holder etc. for our approval. The following criteria will be used by the Service when approving a restoration/creation site:
- a. The restoration site's soils will be appropriate vernal pool soil types (*e.g.*, San Joaquin, Redding, Corning), and should be located on the Laguna geologic formation;
  - b. The restoration site's soil would have been disturbed at some point in the past, either through land leveling, ditching and draining, berming, or other disturbance that has removed or modified edaphic and hydrologic features necessary to support vernal pool habitat;
  - c. The restoration site will have a Service-approved conservation easement, a preserve management plan, and a long-term funding mechanism in place upon Service approval;
  - d. Any vernal pool restoration/creation must minimize effects to any adjacent and existing vernal pools and wetlands; and

- e. Densities of restored/created vernal pools must not be greater than historical densities for the geologic formation.

### **Reporting Requirements**

The Service-approved biologist shall notify the Service immediately if any listed species are found on site, and shall submit a report including the date(s), location(s), habitat description, and any corrective measures taken to protect the species found. The Service-approved biologist shall submit locality information to the CDFG, using completed California Native Species Field Survey Forms, no more than 30 calendar days after completing the last field visit of the project site. Each form shall have an accompanying scale map of the site, such as a photocopy of a portion of the appropriate 7.5-minute U.S. Geological Survey map and shall provide at least the following information: township, range, and quarter section; name of the 7.5-minute or 15-minute quadrangle; dates (day, month, year) of field work; number of individuals and life stage (where appropriate) encountered; and a description of the habitat by community-vegetation type. The Service-approved biologist shall also provide a high quality copy of this information to the staff zoologist, California Department of Fish and Game, 1807 13<sup>th</sup> Street #202, Sacramento, California, 95814, phone (916) 445-0045.

Any contractor or employee who, during routine operations and maintenance activities, inadvertently kills or injures a listed wildlife species must immediately report the incident to their representative. The Service is to be notified within one (1) working day of the finding of any dead or injured listed wildlife species or any unanticipated take of the species addressed in this biological opinion. The Service contact persons for this are the Division Chief, Endangered Species Division (Central Valley) at (916) 414-6600 and Resident Agent-in-charge Scott Heard at (916) 414-6660.

The project proponents shall submit a post-construction compliance report prepared by the monitoring biologists to the Sacramento Fish and Wildlife Office (SFWO) within 30 calendar days of the completion of construction activity. This report shall detail the following: (1) dates that construction occurred; (2) pertinent information concerning the success of the project in meeting conservation measures; (3) an explanation of failure to meet such measures, if any; (4) occurrences of incidental take of vernal pool crustaceans, if any; and (6) other pertinent information.

### **CONSERVATION RECOMMENDATIONS**

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases.

1. The Corps should work with the Service to address significant, unavoidable environmental effects resulting from projects proposed by non-Federal parties.

2. The Corps should assist the Service in implementing the February 2006 final recovery plan for vernal pool species.
3. The Corps should work with the Service to ensure that its wetland delineation techniques fully assess the affects of proposed projects on listed vernal pool crustacean species.
4. The Corps, in partnership with the Service, should develop maintenance guidelines for the Corps projects that will reduce adverse effects of routine maintenance on vernal pool crustaceans and their habitats. Such action may contribute to the delisting and recovery of the species by preventing degradation of existing habitat and increasing the amount and stability of suitable habitat.
5. The Corps should conduct a study of cumulative loss of wetlands habitat, including habitat of listed crustaceans, in Sacramento County.

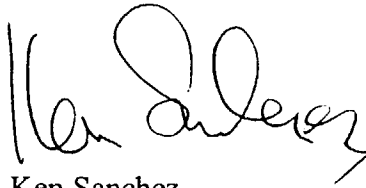
In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

#### **REINITIATION--CLOSING STATEMENT**

This concludes formal consultation with the Corps on the proposed Grantline 208 project. As provided in 50 CFR §402.16, re-initiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending re-initiation.

Please contact this office at (916) 414-6645 if you have any questions regarding the proposed Grantline 208 project.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ken Sanchez', with a stylized flourish at the end.

Ken Sanchez  
Assistant Field Supervisor

cc:

ARD (ES), Portland, OR

Mr. Kent Smith, California Dept. of Fish and Game, Rancho Cordova, CA

Ms. Elizabeth Goldman, Environmental Protection Agency, San Francisco, CA

Ms. Ellen Berryman, Berryman Ecological, Meadow Vista, CA

Ms. Peggy Lee, Foothill Associates, Rocklin, CA

Hilary Anderson, Planning Department, City of Rancho Cordova, Rancho Cordova, CA

Brian Vail, River West Investments, Sacramento, CA

Jim Galovan, Woodside Homes, Folsom, CA

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### PERSONAL COMMUNICATIONS

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Roessler, A. 2004. U.S. Fish and Wildlife Service, Sacramento, California. January 8.

DEPARTMENT OF THE ARMY PERMIT

Permittee: Jim Galovan  
Woodside Homes  
15 Plaza Drive, Suite 102  
Folsom, California 95630-4732

Permit Number: 200200568

Issuing Office: U.S. Army Engineer District, Sacramento  
Corps of Engineers  
1325 "J" Street  
Sacramento, California 95814-2922

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below. A notice of appeal options is enclosed.

Project Description:

To fill 3.91 acres of waters of the U.S., including 3.7 acres of vernal pools, 0.13 acres of seasonal wetlands, and 0.08 acres of seasonal drainage to construct 693 homes on approximately 85.5 acres and three neighborhood park sites totalling approximately 14.4 acres. The project also involves improvements to Douglas and Grant Line Roads; however, no impacts to waters of the U.S. are expected or authorized to occur as part of these road improvements.

All work is to be completed in accordance with the attached plan.

Project Location:

The proposed project is located in the southwest corner of the intersection of Grantline and Douglas Roads, within the SunRidge Specific Plan Area, which is within the larger Sunrise Douglas Community Plan Area, in Section 10, Township 8 North, Range 7 East, on the U.S.G.S. Buffalo Creek 7.5 quadrangle in Sacramento County, California.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on March 31, 2011. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted

December 30, 2004. The purpose of this requirement is to insure replacement of functions and values of the aquatic environment that would be lost through project implementation.

4. To mitigate for the loss of 3.91 acres of waters of the United States, you shall construct at least 3.91 acres of vernal pool habitat at a Corps approved location.
5. You shall construct the required compensatory mitigation concurrently with, or in advance of, the start of construction of the permitted activity.
6. You shall complete construction of the compensatory mitigation no later than December 31, 2006.
7. To insure that compensatory mitigation is completed as required, you shall notify the District Engineer of the date you start construction of the authorized work and the start date and completion date of the compensatory mitigation construction, in writing and no later than ten (10) calendar days after each date.
8. To provide a permanent record of the completed compensatory mitigation work, you shall provide two complete sets of as-builts of the completed work within the off-site mitigation area(s) to the Corps of Engineers. The as-builts shall indicate changes made from the original plans in indelible red ink. These as-builts shall be provided to this office no later than 60 days after the completion of construction of the mitigation area wetlands.
9. You shall establish and maintain, in perpetuity, compensatory preserves containing the 3.91 acres of created/restored vernal pool habitat required by Special Condition 4 at a Corps approved location, and 7.82 acres of high quality vernal pool habitat at a Corps approved location. The purpose of the preserves is to insure that project implementation does not result in a net loss of functions and values of the aquatic environment.
10. To minimize external disturbance to preserved or created/restored waters of the United States, you shall establish an adequate buffer, consisting of native upland vegetation surrounding the entire perimeter of all created, preserved, and avoided waters of the United States, including wetlands within the required off-site preserves. The buffer widths shall be proposed within the compensatory mitigation and monitoring plan and the preserve management plans. The buffer widths shall be explicitly approved in writing by the Corps prior to any work in waters.
11. To insure that the preserves are properly managed, you shall develop specific and detailed preserve management plans for the off-site mitigation, preservation, and avoidance areas. The plans shall be submitted to and specifically approved, in writing, by the Corps of Engineers prior to engaging in any work authorized by this permit. This plan shall describe in detail any activities that are proposed within the preserve area(s) and the long term funding and maintenance of each of the preserve areas.
12. To protect the integrity of the preserves and avoid unanticipated future impacts, no roads, utility lines, trails, benches, equipment or fuel storage, grading, firebreaks, mowing, grazing, planting, discing, pesticide use, burning, or other structures or activities shall be constructed or occur within the off-site mitigation, preservation, and avoidance areas without specific, advance written approval from the Corps of Engineers.
13. To prevent unauthorized access and disturbance, you shall, prior to December 31, 2006, install fencing and appropriate signage around the entire perimeter of the preserves. All fencing surrounding mitigation, preservation, avoidance, and buffer areas shall allow unrestricted visibility of these areas to discourage vandalism or disposing of trash or other debris in these areas. Examples of this type of fencing include chain link and wrought iron.
14. Prior to initiating any activity authorized by this permit, you shall, to insure long-term viability of

by law.

- b. This permit does not grant any property rights or exclusive privileges.
- c. This permit does not authorize any injury to the property or rights of others.
- d. This permit does not authorize interference with any existing or proposed Federal projects.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
- b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
- d. Design or construction deficiencies associated with the permitted work.
- e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data. The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant.

Circumstances that could require a reevaluation include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of this permit.
- b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

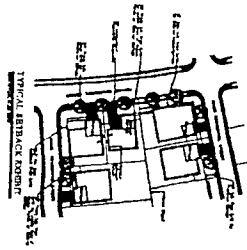
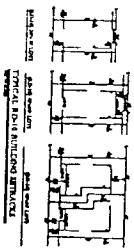
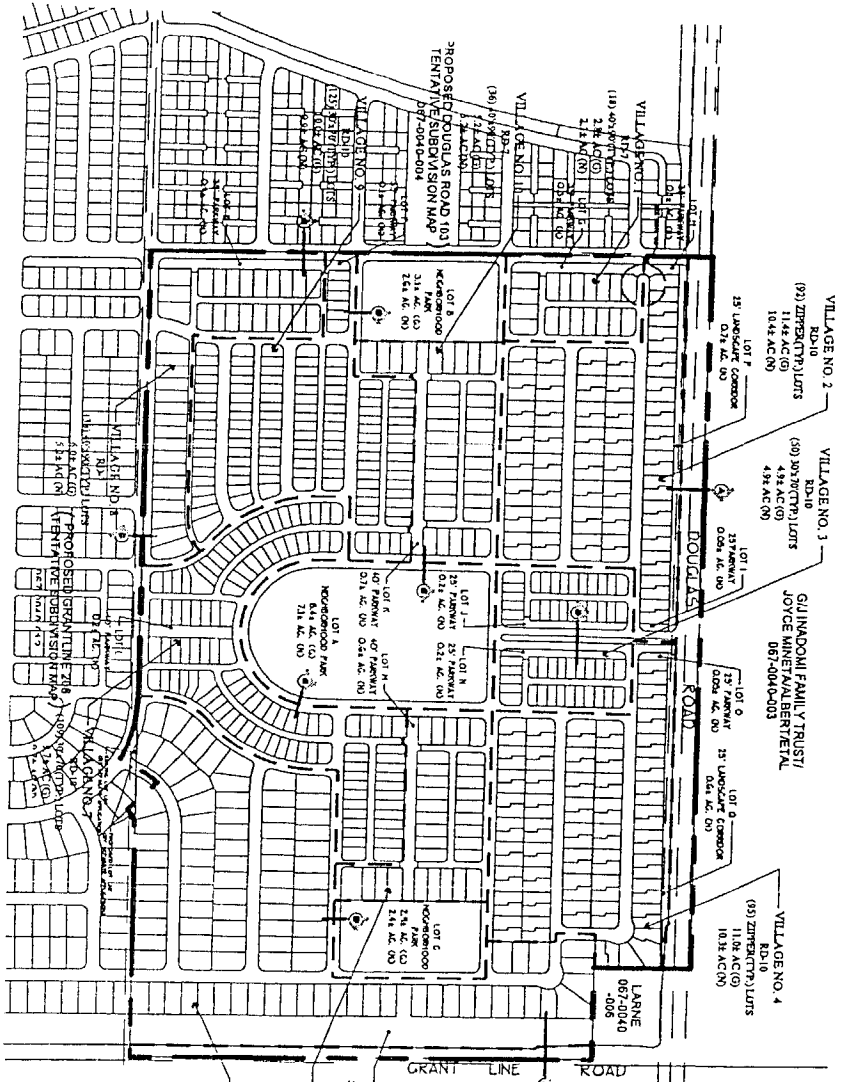
6. Extensions. General Condition 1 establishes a time limit for the completion of the activity authorized by



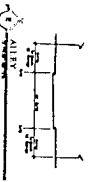
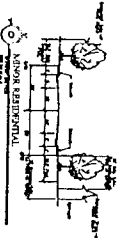
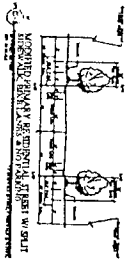
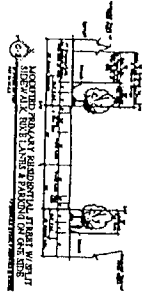
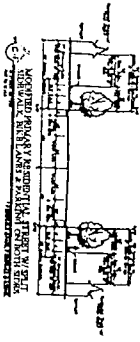
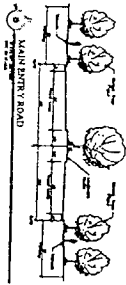
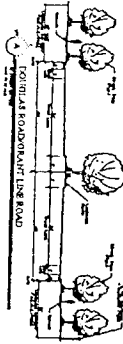
# EXHIBIT C SMALL LOT TENTATIVE SUBDIVISION MAP

## DOUGLAS 98

CITY OF RANCHO CORDOVA, CALIFORNIA  
OCTOBER 3, 2005

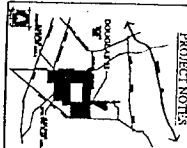


NOTES:  
1. ALL BUILDINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF RANCHO CORDOVA ZONING ORDINANCES.  
2. ALL BUILDINGS SHALL BE SET BACK FROM THE FRONT YARD BY A MINIMUM OF 10 FEET.  
3. ALL BUILDINGS SHALL BE SET BACK FROM THE SIDE YARD BY A MINIMUM OF 5 FEET.  
4. ALL BUILDINGS SHALL BE SET BACK FROM THE REAR YARD BY A MINIMUM OF 10 FEET.  
5. ALL BUILDINGS SHALL BE SET BACK FROM THE ADJACENT LOT BY A MINIMUM OF 5 FEET.  
6. ALL BUILDINGS SHALL BE SET BACK FROM THE STREET BY A MINIMUM OF 10 FEET.  
7. ALL BUILDINGS SHALL BE SET BACK FROM THE ALLEY BY A MINIMUM OF 5 FEET.  
8. ALL BUILDINGS SHALL BE SET BACK FROM THE PARKING LOT BY A MINIMUM OF 5 FEET.  
9. ALL BUILDINGS SHALL BE SET BACK FROM THE TRAILER COURT BY A MINIMUM OF 5 FEET.  
10. ALL BUILDINGS SHALL BE SET BACK FROM THE TRAILER COURT BY A MINIMUM OF 5 FEET.



Item	Description	Area
1	Park and Open Space	1.00
2	Park and Open Space	1.00
3	Park and Open Space	1.00
4	Park and Open Space	1.00
5	Park and Open Space	1.00
6	Park and Open Space	1.00
7	Park and Open Space	1.00
8	Park and Open Space	1.00
9	Park and Open Space	1.00
10	Park and Open Space	1.00

Item	Description	Area
1	Land Use Summary	1.00
2	Land Use Summary	1.00
3	Land Use Summary	1.00
4	Land Use Summary	1.00
5	Land Use Summary	1.00
6	Land Use Summary	1.00
7	Land Use Summary	1.00
8	Land Use Summary	1.00
9	Land Use Summary	1.00
10	Land Use Summary	1.00

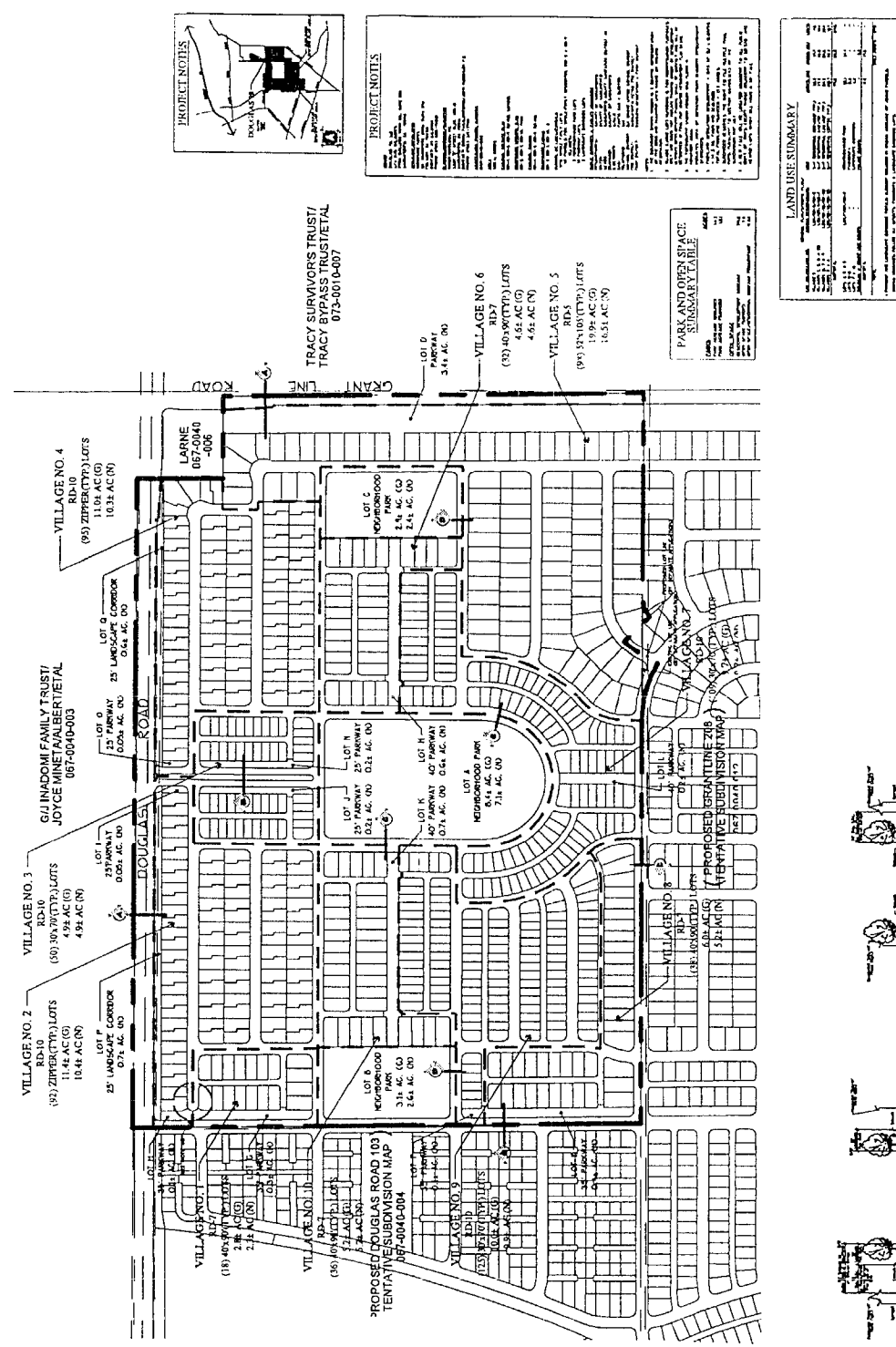


**WOOD ROGERS**  
DEVELOPING INNOVATIVE DESIGN SOLUTIONS  
3301 C STREET, BLDG. 100-B, SACRAMENTO, CA 95816  
PHONE: (916) 341-7760 FAX: (916) 341-7767

EXHIBIT C SMALL LOT TENTATIVE SUBDIVISION MAP

DOUGLAS 98

CITY OF RANCHO CORDOVA, CALIFORNIA  
OCTOBER 3, 2005



**PROJECT NOTES**

1. THIS MAP IS A TENTATIVE SUBDIVISION MAP AND IS NOT A FINAL MAP.
2. THE CITY OF RANCHO CORDOVA HAS REVIEWED THIS MAP AND HAS DETERMINED THAT IT COMPLIES WITH THE SUBDIVISION MAP ACT.
3. THE CITY OF RANCHO CORDOVA HAS REVIEWED THIS MAP AND HAS DETERMINED THAT IT COMPLIES WITH THE SUBDIVISION MAP ACT.
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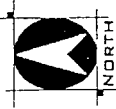
**LAND USE SUMMARY**

LAND USE	ACRES	PERCENT
RESIDENTIAL	100.00	100.00%
TOTAL	100.00	100.00%

**PARK AND OPEN SPACE SUMMARY TABLE**

ITEM	ACRES	PERCENT
PARK	10.00	10.00%
OPEN SPACE	90.00	90.00%
TOTAL	100.00	100.00%

**WOOD RODGERS**  
INNOVATIVE DESIGN SOLUTIONS  
3301 C STREET, BLDG. 100-B, SACRAMENTO, CA 95816  
PHONE: (916) 341-7760 FAX: (916) 341-7767





## United States Department of the Interior

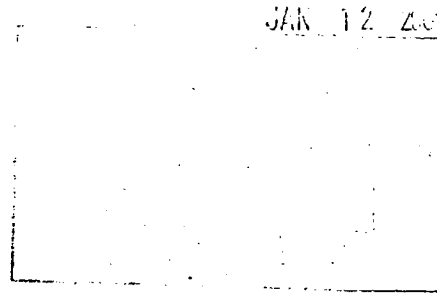
### FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825-1846



In reply refer to:  
1-1-04-F-0314

Mr. Justin Cutler  
Chief, Sacramento Valley Office  
Department of the Army  
U.S. Army Engineer District, Sacramento  
1325 J Street  
Sacramento, California 95814-2922



Subject: Formal Endangered Species Consultation on the proposed Douglas Road 98 Project (Corps File Number 200200568), Sacramento County, California

Dear Mr. Cutler:

This is in response to your September 23, 2004, letter and supporting documentation requesting Section 7 consultation for the proposed Douglas Road 98 project (proposed project) in Sacramento County, California. Your request was received by the U.S. Fish and Wildlife Service (Service) on September 27, 2004. At issue are potential adverse effects to the federally-listed vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardii*). Surveys conducted of the proposed project site have not indicated the presence of the federally-listed slender Orcutt grass (*Orcuttia tenuis*), the Sacramento Orcutt grass (*Orcuttia viscida*), and the California tiger salamander (*Ambystoma californiense*). This document represents the Service's biological opinion on the effects of the project on the threatened vernal pool fairy shrimp and endangered vernal pool tadpole shrimp, in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act).

The findings and requirements in this consultation are based on: (1) the July 30, 2004, *Douglas Road 98 Section 7 Biological Assessment, Sacramento County, California*, prepared by Foothill Associates, Inc.; (2) your September 23, 2004, letter initiating formal consultation; (3) the October 7, 2004, meeting attended by Ken Sanchez, Kelly Fitzgerald, and Stephanie Rickabaugh of the Service and Ellen Berryman of Foothill Associates; (4) an October 14, 2004, letter to the Service from Foothill Associates providing additional information based on questions raised at the October 7, 2004, meeting; (5) the October 26, 2004, letter from Foothill Associates to the Service; (6) the January 11, 2005, electronic mail correspondence from Ellen Berryman of Foothill Associates to the Service; and (7) information available to the Service.

TAKE PRIDE  
IN AMERICA 

CNS06819

## Consultation History

Beginning on May 10, 2002, the Planning Department of the County of Sacramento initiated and facilitated a series of meetings to discuss and develop potential wetlands and endangered species permitting strategies for the Sunrise Douglas Community Planning Area (SDCPA). These meetings were attended by landowners, developers, and their representatives, staff from Congressman Doug Ose's office, California Department of Fish and Game, the Service, Department of Army-Corps of Engineers (Corps), and the Environmental Protection Agency (EPA). The entire group met at least twelve times between May 10th and November 22, 2002, in an attempt to develop a strategy to address issues relating to endangered species and wetland protection within the SDCPA. By November of 2002, a resolution was not reached and discussions ceased at that time.

On July 17, 2002, during this initial phase of meetings, the Sacramento County Board of Supervisors approved both the larger SDCPA and the SunRidge Specific Plan. On July 1, 2003, with the incorporation of the City of Rancho Cordova ("City"), the SDCPA came under the City's land use jurisdiction.

A smaller group of project proponents representing the property owners in the Sun Ridge Specific plan area initiated several meetings with the Fish and Wildlife Service during mid 2003. Discussions focused on avoidance of endangered species habitats in the SDCPA and specific plan areas. Again, no resolution with the Service was reached.

In March 2004, Congressman Doug Ose initiated meetings with the Federal Agencies, local agencies, and the landowners/developer representatives to facilitate resolution of the issues that had emerged during the previous meetings. Congressman Ose urged the Federal Agencies to develop a conceptual strategy that would meet the requirements of the Federal Agencies respective statutes. Congressman Ose urged the regulated parties to work cooperatively with the Federal agencies to explore mechanisms to accommodate the agencies' obligations to comply fully with pertinent federal laws and regulations, which place a premium on the avoidance of on-site wetlands resources to the extent practicable and the need to avoid jeopardizing the continued existence of threatened and endangered species. In short, the Congressman encouraged the parties to work cooperatively with one another to develop a conceptual onsite avoidance and offsite compensation strategy that reached a proper and workable balance between and amongst the following: the mandates of federal law; the need to preserve ecosystem integrity and the habitat of endangered and threatened species; the need to acknowledge the planning policies and objectives of the City of Rancho Cordova; and the need to account for the economic realities facing private sector developers. These meetings continued through September 2004.

In June of 2004 the Federal agencies developed two documents ("A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area"; and the accompanying planning map) that outline our strategies for conserving threatened and endangered species and wetland habitats and to provide a framework for development proposals. In addition, our strategy would provide some conceptual guidelines for permitting.

Service Correspondence

April 2, 1996, To: A. Champ-Corps of Engineers, Re: Formal Section 7 Consultation on Issuance of 404 Permit for the Sunrise Douglas Project (AKA Anatolia I, II, III), Service File #1-1-96-F-0062, Corps PN 190110021

November 22, 2002, To: M. Finan-Corps of Engineers, Re: Request for additional information on the Sunridge Specific Plan/Sunrise Douglas Community Plan, Service file #1-1-03-I-0411

July 18, 2002, To: D. Nottoli-Sacramento County Board of Supervisors, Re: Sunrise Douglas Community Plan and SunRidge Specific Plan-Service File # 1-1-02-CP-2579

April 26, 2004, To: Col. Conrad-Corps of Engineers, Re: SunRidge Specific Plan, Service file #/Corps PN 200000336

Consultation History Specific to the Proposed Project

September 21, 2004. Foothill Associates submitted a letter to the Service, providing proposed conservation measures for the vernal pool crustacean habitat that would be directly and indirectly affected by the proposed project. The Service received this letter on September 27, 2004.

September 23, 2004. The Corps requested initiation of Section 7 consultation with the Service. The Service received this request on September 27, 2004.

October 7, 2004. A meeting was attended by Ken Sanchez, Kelly Fitzgerald, and Stephanie Rickabaugh of the Service and Ellen Berryman of Foothill Associates to discuss the proposed project and other projects within the Sunrise Douglas Community Plan.

October 14, 2004. Foothill Associates submitted a letter to the Service providing additional information regarding questions raised by the Service during the meeting between the Service and Foothill Associates on October 7, 2004.

October 15, 2004. The Service provided a draft version of this biological opinion to the Corps.

October 26, 2004. Foothill Associates submitted a letter to the Service providing comments on the draft biological opinion that was provided to the Corps on October 15, 2004.

January 10, 2005. Ken Sanchez of the Service sent an electronic mail correspondence to Ellen Berryman of Foothill Associates regarding compensation measures for effects to federally-listed vernal pool crustaceans.

January 11, 2005. Ellen Berryman of Foothill Associates sent an electronic mail correspondence to Ken Sanchez of the Service clarifying the project applicant's proposed compensation measures for effects to federally-listed vernal pool crustaceans.

## BIOLOGICAL OPINION

### Description of the Proposed Action

The Douglas 98 project site is located in southeastern Sacramento County in the City of Rancho Cordova approximately five miles south of Highway 50. The project site is south and adjacent to Douglas Road, west and adjacent to Grantline Road, east of the proposed Americano Boulevard, and north of the proposed Pyramid Boulevard. The site is located in Section 10 of Township 8 North, Range 7 East on the U.S.G.S. Buffalo Creek 7.5' quadrangle.

The proposed project site is within the 6,042 acre Sunrise Douglas Community Plan area located within the Sacramento County General Plan Urban Service Boundary and Policy area. The project is also located within the Sunridge Specific Plan area, which provides a greater detailed land use plan for development of approximately 2,632 acres within the Sunrise Douglas Community Plan area.

The proposed project site consists of a  $\pm 105$ -acre parcel on which portions will be graded resulting in the loss of 3.91 acres of waters of the U.S. including 3.70 acres of vernal pools, 0.04 acres of depressional seasonal wetlands, 0.09 acres of riverine seasonal wetlands, and 0.08 acres of ephemeral drainages subject to Clean Water Act jurisdiction. The proposed general plan land use designation for the project area is Low Density Residential (LDR), Medium Density Residential (MDR), and Commercial and Office. The Proposed Project involves grading portions of the  $\pm 105$ -acre site in order to construct approximately 483 single family residences, a 2.1-acre multifamily residential site, a 3.6-acre school site, and associated infrastructure (sewer mains and laterals, water mains, and utility lines).

### Proposed Conservation Measures

The project applicant has proposed the following conservation measures in the July 30, 2004, *Douglas Road 98 Section 7 Biological Assessment*, and the October 14 and 26, 2004, letters to the Service, and the January 11, 2005, electronic mail correspondence from Foothill Associates to the Service to minimize adverse effects to the two federally-listed vernal pool crustacean species.

1. Standard construction Best Management Practices (BMPs) will be incorporated into construction designs, plans and specifications, and required of contractors during construction. The BMPs would include the following:
  - (a) All constructed slopes adjacent to the preserve will be hydroseeded with a native grassland mix. The hydroseed mix will be applied with a tackifying agent at a rate of at least 2 tons/acre and based on manufacturer's recommendations. The tackifying agent will be a hydraulic matrix which when applied, and upon drying, adheres to the soil to form a 100% cover which is biodegradable, promotes vegetation, and prevents soil erosion. The hydroseed mix will not be applied



before, during, or immediately after rainfall so that the matrix will have an opportunity to dry 24 hours after installation;

- (b) Certified weed-free straw wattles will be installed at the base of all slopes along the property lines of the Property Site. The existing Douglas Road currently provides additional erosion and sediment control to - improvement projects will be subject to a SWPPP and BMP monitoring. Prior to installation of the straw wattles, a concave key trench approximately 2 to 4 inches deep will be contoured along the proposed installation route. Soil excavated for the trenching will be placed on the uphill or flow side of the straw wattles to prevent water from undercutting the straw wattles. Stakes will be driven in on alternating sides of the straw wattles, to hold them in place. The straw wattles will be maintained for a period of time at least until the native grassland vegetation is fully established and the soil is stabilized;
  - (c) During construction all excavated materials will be deposited or stored such that this material cannot be washed into any watercourse, and excess supplies of certified weed-free straw bales and/or sedimentation fencing will be available at the construction site for periodic site-specific use as needed.;
  - (d) Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. No refueling, storage, servicing, or maintenance of equipment will take place within 100 feet of the adjacent off-site habitat. All machinery will be properly maintained and cleaned to prevent spills and leaks. Any spills or leaks from the equipment will be reported and cleaned up in accordance with applicable local, state and/or federal regulations;
  - (e) Temporary fencing will be installed prior to construction along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto adjacent off-site habitat; and
  - (f) An environmental monitor will be employed to ensure compliance with construction-related impact avoidance measures. The monitor will report directly to the City of Rancho Cordova Public Works project manager, and based on reports of non-compliance with environmental requirements, will be authorized to stop work orders and to take actions necessary to prevent damage to off-site habitat. Monitoring reports will be provided to the City of Rancho Cordova Department of Public Works project manager on a daily basis during initial ground breaking, and on a weekly basis (or more frequently as needed when problems arise) thereafter until construction is finished.
2. A Storm Water Pollution Prevention Plan (SWPPP) will be prepared for the Project, with the following objectives; (a) to identify pollutant sources, including sources of sediment, that may affect the quality of storm water discharges from the construction of the project;

(b) to identify BMPs to reduce or eliminate pollutants in storm water discharges and authorized non-storm water discharges, from the site during construction; (c) to outline and provide guidance for BMP monitoring; (d) to identify project discharge points and receiving waters; (e) to address post-construction BMP implementation and monitoring; and (f) to address sediment / siltation / turbidity and non-visually detectable pollutant monitoring, and outline a sampling and analysis strategy.

3. Habitat preservation and restoration has been proposed in the October 26, 2004, letter from Foothill Associates to the Service:

- (a) Direct effects to 3.91 acres of vernal pool crustacean habitat will be offset through habitat preservation. The project applicant proposes to provide compensatory preservation as follows:
  - 1. Two preservation acres of in kind habitat at the Anatolia preserve for each acre affected (2 acres : 1 acre); or
  - 2. Four preservation acres of in kind habitat at Borden Ranch for each acre affected (4 acres : 1 acre).
- (b) Direct effects to vernal pool crustacean habitat will be further offset through habitat restoration/creation equivalent to 3.91 acres (at a 1:1 ratio) at the Silva Consolidated Conservation Bank. The restoration/creation goal will be to create and enhance wetlands with habitat functions and values equal to, or greater than, the wetland features affected by the implementation of the proposed project. Habitat creation/restoration will be achieved through the purchase of vernal pool restoration/creation acreage

#### STATUS OF THE SPECIES

The vernal pool tadpole shrimp and vernal pool fairy shrimp were listed as endangered and threatened, respectively, on September 19, 1994. Final critical habitat was designated for these species on August 6, 2003 (68 FR 46684). Complete descriptions of these species are found in 59 FR 48136, the final rule listing these species under the Act. These crustaceans are restricted to vernal pools and swales and other seasonal aquatic habitats in California. Eng *et al.* (1990), Simovich *et al.* (1992), and (Service 1994c) provide further details about their life history and ecology. The Service did not designate any critical habitat for the vernal pool crustaceans in Sacramento County. Although the Service designated critical habitat for the vernal pool fairy shrimp in San Joaquin County, none will be affected by the proposed project.

#### Life History

*Vernal pool tadpole shrimp.* The vernal pool tadpole shrimp has dorsal compound eyes, a large shield-like carapace that covers most of its body, and a pair of long cercopods at the end of its last abdominal segment (Linder 1952, Longhurst 1955, Pennak 1989). It is primarily a benthic

animal that swims with its legs down. Its diet consists of organic detritus and living organisms, such as fairy shrimp and other invertebrates (Pennak 1989). The females deposit their eggs on vegetation and other objects on the pool bottom. Tadpole shrimp eggs are known as cysts during the summer, when they lie dormant in the dry pool sediments (Lanway 1974, Ahl 1991). The life history of the vernal pool tadpole shrimp is linked to the environmental characteristics of its vernal pool habitat. After winter rains fill the pools, the populations are re-established from dormant cysts. A portion of the cysts hatch immediately and the rest remain dormant in the soil to hatch during later rainy seasons (Ahl 1991). The vernal pool tadpole shrimp is a relatively long-lived species (Ahl 1991). Adults are often present and reproductive until the pools dry up in the spring (Ahl 1991, Simovich *et al.* 1992).

*Vernal pool fairy shrimp.* Vernal pool fairy shrimp have delicate elongate bodies, large stalked compound eyes, no carapace, and 11 pairs of swimming legs. The swim or glide gracefully upside-down by means of complex, wavelike beating movements. Fairy shrimp feed on algae, bacteria, protozoa, rotifers, and detritus. The females carry eggs in an oval or elongate ventral brood sac. The eggs are either dropped to the pool bottom or remain in the brood sac until the female dies and sinks. The dormant cysts are capable of withstanding heat, cold, and prolonged desiccation. When the pools refill in the same or subsequent seasons, some, but not all, of the cysts may hatch. The cyst bank in the soil may therefore be comprised of cysts from several years of breeding (Donald 1983). The early stages of the fairy shrimp develop rapidly into adults. The vernal pool fairy shrimp can mature quickly, allowing populations to persist in short-lived shallow pools (Simovich *et al.* 1992).

## Distribution

*Vernal pool tadpole shrimp.* The vernal pool tadpole shrimp is known from 168 occurrences in the Central Valley, ranging from east of Redding in Shasta County south to Fresno County, and from a single vernal pool complex located in the San Francisco Bay National Wildlife Refuge in Alameda County. It inhabits vernal pools containing clear to highly turbid water, ranging in size from 5 square meters (54 square feet) in the Mather Air Force Base area of Sacramento County, to the 36-hectare (89-acre) Olcott Lake at Jepson Prairie in Solano County.

*Vernal pool fairy shrimp.* The vernal pool fairy shrimp is known from 342 occurrences extending from Shasta County through most of the length of the Central Valley to Pinnacles in San Benito County (Eng *et al.* 1990, Fugate 1992, CNDDDB 2004) and Riverside County. Five disjunctive populations exist: one near Soda Lake in San Luis Obispo County; one in the mountain grasslands of northern Santa Barbara County; one on the Santa Rosa Plateau in Riverside County; one near Rancho California in Riverside County; and one on the Agate Desert near Medford, Oregon. The vernal pool fairy shrimp inhabits vernal pools with clear to tea-colored water, most commonly in grass- or mud-bottomed swales, basalt flow depression pools in unplowed grasslands, or even sandstone rock outcrops or alkaline vernal pools.

The genetic characteristics of these species, as well as ecological conditions, such as watershed continuity, indicate that populations of vernal pool crustaceans are defined by pool complexes rather than by individual vernal pools (Fugate 1992). Therefore, the most accurate indication of

the distribution and abundance of these species is the number of inhabited vernal pool complexes. The pools and, in some cases, pool complexes supporting these species are usually small. Human-caused and unforeseen natural catastrophic events such as long-term drought, non-native predators, off-road vehicles, pollution, berming, and urban development, threaten their extirpation at some sites.

### Dispersal

The primary historic dispersal method for the vernal pool tadpole shrimp and vernal pool fairy shrimp likely was large scale flooding resulting from winter and spring rains which allowed the animals to colonize different individual vernal pools and other vernal pool complexes. This dispersal is currently non-functional due to the construction of dams, levees, and other flood control measures, and widespread urbanization within significant portions of the range of this species. Waterfowl and shorebirds may now be the primary dispersal agents for vernal pool tadpole shrimp and vernal pool fairy shrimp. The eggs of these crustaceans are either ingested (Krapu 1974, Swanson *et al.* 1974, Driver 1981, Ahl 1991) and/or adhere to the legs and feathers where they are transported to new habitats.

### ENVIRONMENTAL BASELINE

Historically, vernal pools and vernal pool complexes occurred extensively throughout the Sacramento Valley of California. However, conversion of vernal pools and vernal pool complexes has resulted in a 91 percent loss of vernal pool resources in California (State of California 2003d). By 1973, between 60 and 85 percent of the area within the Central Valley that once supported vernal pools had been destroyed (Holland 1978). In the ensuing 30 years, threats to this habitat type have continued and resulted in a substantial amount of vernal pool habitat being converted for human uses in spite of Federal regulations implemented to protect wetlands. For example, between 1987 and 1992, 467 acres of wetlands within the Sacramento area were filled pursuant to Nationwide Permit 26 (Service 1992). A majority of those wetlands losses involved vernal pools, the endemic habitat of the vernal pool tadpole shrimp, the vernal pool fairy shrimp (shrimp), and slender and Sacramento Orcutt grasses. It is estimated that within 20 years human activities will destroy 60 to 70 percent of the remaining vernal pools (Coe 1988). In addition to direct habitat loss, the two shrimp populations have been and continue to be highly fragmented throughout their ranges due to conversion of natural habitat for urban and agricultural uses. Fragmentation results in small isolated shrimp populations. Ecological theory predicts that such populations will be highly susceptible to extirpation due to chance events, inbreeding depression, or additional environmental disturbance (Gilpin and Soulé 1988; Goodman 1987). If an extirpation event occurs in a population that has been fragmented, the opportunities for re-colonization would be greatly reduced due to physical (geographic) isolation from other (source) populations.

Human population growth in Sacramento County has steadily increased. On the average, Sacramento County has experienced an annual population increase of 1.38 percent for the period between 1991 and 1999 (Service 2000). For the period between 1990 and 2000, population growth in Sacramento County increased 17.5 percent, with an average annual growth rate of 17.5

percent (State of California 2002). This annual growth appears to be increasing, as demonstrated by the 2.63 percent and 2.2 percent increases in population growth in 2001 and 2002, respectively (State of California 2003a, 2003b). Increased housing demand and urban development accompany the population growth in Sacramento County. Between 1990 and 2000, housing units in Sacramento County increased by 1.37 percent annually (State of California 2000, 2003c). Population growth and concomitant housing demand and subsequent vernal pool resource development are projected to continue. Population projections for Sacramento County are expected to increase above 2000 levels by 19.7 percent in 2010, by 28 percent in 2015, and by 37.5 percent in 2020 (State of California 2001).

Sacramento County represents important, high quality habitat for the two shrimp populations by providing large, nearly contiguous areas of relatively undisturbed vernal pool habitat. Sacramento County contains the greatest number of occurrences of vernal pool tadpole shrimp within the range of the species, and also is one of the two counties with the greatest number of occurrences of vernal pool fairy shrimp within the range of the species. Sacramento County contains 58 (17 percent) out of the total of 342 reported occurrences of vernal pool fairy shrimp, and 58 (34 percent) out of the total of 173 reported occurrences of vernal pool tadpole shrimp (CNDDDB 2004). Further, Sugnet and Associates (1993) reported that of 3,092 "discrete populations" checked, only 345 locations, or about 11 percent of all locations checked, were found to support the vernal pool tadpole shrimp. Of these 345 locations supporting the vernal pool tadpole shrimp, 219 (63 percent) were in Sacramento County. Further, of the 3,092 locations checked, 178 locations (6 percent) were found to support the vernal pool fairy shrimp. Of this total, 63 locations (35 percent) were within Sacramento County.

The vernal pool tadpole shrimp and vernal pool fairy shrimp are imperiled by a variety of human-caused activities. Their habitats have been lost through direct destruction and modification due to filling, grading, diking, leveling, and other activities. In addition, vernal pools have been imperiled by a variety of anthropogenic modifications to upland habitats and watersheds. These activities, primarily urban development, water supply/flood control projects, land conversion for agriculture, off-road vehicle use, certain mosquito abatement measures, and pesticide/herbicide use can lead to disturbance of natural flood regimes, changes in water table depth, alterations of the timing and duration of vernal pool inundation, introduction of non-native plants and animals, and water pollution. These indirect effects can result in adverse effects to vernal pool species.

A number of State, local, private, and unrelated Federal actions have occurred within the project area and adjacent region affecting the environmental baseline of these species. Some of these projects have been subject to prior section 7 consultation. Based on an informal review, the Service has issued approximately 157 biological opinions to Federal agencies on proposed projects in Sacramento County that have adversely affected the shrimp species since the two species were proposed to be listed in 1994. This total does not reflect the formal consultations that were withdrawn, those that are suspended, those that have insufficient information to conclude an effects analysis, those that were amended, or ones that the Service issued a conference opinion. No State of California actions have taken place within Sacramento County that have adversely affected the species in the action area. Although these proposed projects in Sacramento County have eliminated vernal pools and vernal pool complexes, the offsetting

compensating measures are designed to minimize the effects of take of these species resulting in both negative and positive effects to the species. Thus, the trend for the two vernal pool species within the county is most likely static.

The actions listed above have resulted in both direct and indirect impacts to vernal pools within the region, and have contributed to the loss of vernal pool tadpole shrimp and vernal pool fairy shrimp populations. Although a reduction of the two shrimp populations has not been quantified, the acreage of lost habitat continues to grow.

In south Sacramento County, the Urban Services Boundary (USB) is a planning boundary that coincides with the areas north of the Cosumnes River/Deer Creek drainage system. Between 1993 and 2000, an estimated 14,950 acres were converted to urban development within the USB (pers. comm., D. Gifford, 2004), based on an analysis of the California Department of Water Resources mapping data. An independent analysis of urban growth in Sacramento County estimated that an estimated 22,000 acres were converted between 1990 and 2000, averaging 2,200 acres per year (pers. comm., Richard Radmacher, Sacramento County, 2004). As of 1998 (the most recent year for which vernal pool mapping from aerial photographs is available), there remained an estimated 23,533 acres of vernal pool grasslands within the USB, supporting approximately 946 acres of wetted vernal pool acreage (pers. comm., Lora Konde, California Department of Fish and Game, 2003).

Vernal pool complexes, occurring north of the Cosumnes River/Deer Creek drainage and within the USB, contain a high density of occupied pool of both vernal pool tadpole shrimp and vernal pool fairy shrimp. There are 31 known occurrences of vernal pool tadpole shrimp inside the USB, compared to 17 occurrences outside the USB (CNDDDB 2003). There are 25 known occurrences of vernal pool fairy shrimp inside the USB, compared to 18 occurrences outside the USB (CNDDDB 2004). The data from the CNDDDB do not reflect additional reported records in the Sunrise-Douglas area, where 137 occurrences of vernal pool tadpole shrimp and 46 occurrences of vernal pool fairy shrimp, and 2 occurrences of orcutt grasses (2 slender Orcutt grass and 4 Sacramento Orcutt grass) are reported (pers. comm., Arnold Roessler, Service, 2004). An additional occurrence of slender Orcutt grass has been reported, but not recorded in the CNDDDB (pers. comm. Pete Balfour, ECRP Consulting, 2004).

The vernal pools on the proposed project site are classified as the old-terrace type and are located on soils associated with Laguna geologic formation. Old-terrace is a rapidly disappearing habitat type in Sacramento County that consists of ancient river channel deposits that were laid down from 600,000 to more than one million years ago by the American River. By comparison, young-terrace formation dates from 100,000 to 200,000 years ago. Old-terrace formation generally has a higher density of vernal pools, deeper pools, and a greater number of special status plants and crustaceans than young-terrace formations. Some special status species found in old-terrace pools may have evolved from species inhabiting shores of ancient lakes in the Central Valley. Old-terrace pools may have served as refugia for these species as the lakes disappeared. Sacramento County contains an estimated 764 wetted acres of vernal pools on low terrace, 1,390 wetted acres of vernal pools on high terrace, and 189 wetted acres of vernal pools on volcanic mudflow vernal pools.



There are two predominant soil types found within south Sacramento County. The Valley Springs soil type typifies Gill Ranch, located in Sacramento County and approximately 12 miles southeast of the project site. Vernal pools found within the Valley Springs soil type are the young-terrace formation. Young-terrace formations, because they have a higher slope gradient, tend to have fewer vernal pools that are typically smaller and more shallow. These vernal pools also are inundated for shorter durations. These factors typically result in lower species diversity. Generally, the larger the vernal pool on this soil type, the higher its biotic diversity. Vernal pool fairy shrimp, vernal pool tadpole shrimp, and Sacramento Orcutt grass are less likely to occur in young-terrace formation vernal pools found on Valley Springs soils. (Holland, pers. comm., 2004).

The Laguna geologic formation and its associated soils entirely characterizes the Sunrise Douglas Community Plan Area. Vernal pools found within this soil type are old-terrace types. Old-terrace types, because they have a lower slope gradient, tend to have pools that are larger, deeper, and clearer. These pools are inundated for longer periods, but dry and refill less often than the Valley Springs soil type. Generally, the smaller the vernal pool on this soil type, the higher its invertebrate diversity. Although vernal pool fairy shrimp occur in pools on both soil types, but more frequently in pools on Laguna soils. Vernal pool tadpole shrimp are found almost exclusively in old-terrace formation vernal pools found on Laguna soils.

Several areas containing old-terrace formation have been protected for their high quality vernal pool habitat and high concentration of special status species populations by the Sacramento Valley Conservancy (SVC). This potential preserve area, the SVC's Vernal Pool Prairie Preserve, would cover 2,000 to 3,000 acres and supports a variety of special status plants and animals on relatively undisturbed grasslands containing young and old terrace formations and northern hardpan vernal pools. Within the proposed Prairie Preserve, areas already protected include the Arroyo Seco Mitigation Bank, the Excelsior 184 parcel, and the Sacramento County-owned Multi Cultural Park; outside of the proposed Prairie Preserve, the Sunrise Douglas Preservation Bank, and a portion of Howard Ranch are protected. All of these preserves are within proposed critical habitat for the two listed vernal pool crustaceans addressed in this biological opinion.

There are 342 records of vernal pool fairy shrimp and 173 records of vernal pool tadpole shrimp recorded in the CNDDB for the entire state of California (CNDDB 2004). Of these records, 58 vernal pool fairy shrimp records and 58 vernal pool tadpole shrimp records are from Sacramento County (CNDDB 2004). Vernal pool fairy shrimp and vernal pool tadpole shrimp have both been observed in wetlands throughout the Sunrise Douglas area.

*Vernal pool fairy shrimp located within the Sunridge Specific Plan:* There is one record within the Sunridge Specific Plan boundaries, and another 17 records located within five miles of the Sunridge Specific Plan area boundaries. The nearest occurrence (# 43) of this species, observed in March 1996, is a half of a mile southwest of the proposed project site.

*Vernal pool tadpole shrimp within the Sunridge Specific Plan:* There are two records within the Sunridge Specific Plan boundaries, and another 23 records within five miles of these boundaries.

The nearest two occurrences (# 54 and # 23) of this species are within 1.5 miles of the proposed project site. One of these recorded occurrences (# 54), located to the west of the site, was observed in February of 1993; and the other recorded occurrence (# 23), located to the east of the site, was observed in 1996.

Focused surveys on the proposed project Site for vernal pool crustaceans were conducted between February and March of 1993, by Sugnet and Associates (1993). The results of this survey indicated the presence of California linderiella (*Linderiella occidentalis*) from four discrete locations, and vernal pool fairy shrimp from one location. However, all of the vernal pools and seasonal wetlands on the proposed project site provide appropriate habitat for both vernal pool fairy shrimp and vernal pool tadpole shrimp. In addition, these species are known from other parcels within the Sunrise Douglas Community Plan area and vicinity, and it is likely the vernal pool crustaceans would disperse within the watershed between the proposed project sites.

## EFFECTS OF THE PROPOSED ACTION

### Direct Effects

Direct effects are the effects of the action that would directly affect the species, for example, those actions that would immediately remove or destroy habitat or displace animals and plants. The construction of the proposed project would result in the direct loss of 3.91 acres of vernal pool crustacean habitat and the death of an unknown number of vernal pool fairy shrimp and vernal pool tadpole shrimp and/or their cysts. Our analysis is based on the assumption that the proposed project will be implemented within two (2) calendar years of the date of the issuance of this biological opinion.

### Indirect Effects

Vernal pool habitat indirectly affected includes all habitat supported by future destroyed upland areas and swales, and all habitat otherwise damaged by loss of watershed, human intrusion, introduced species, and pollution that will be caused by the project. The proposed project will not result in any indirect effects. Habitat to the north and east is divided from the proposed project site by a major roadways and therefore indirect impacts are not anticipated. Because lands to the west and south are within the approved Sunrise Douglas Community Plan/Sunridge Specific Plan, habitat in these areas would be directly removed and offset by adjacent proposed development. Therefore, separate Section 7 consultation will be initiated on lands adjacent to the project site and indirect impacts to these areas are expected to be offset through this process.

### Interrelated and Interdependent Actions

Additional effects from interrelated and interdependent actions are expected from the proposed project. Approximately 115 acres of vernal pools are present in the entire Sunridge Specific Plan area (Foothill Associates 2004). The Corps issued a permit for the largest project in this area, the approximately 1,225-acre Sares-Regis property that included approximately 71 acres of vernal

pools (Corps file number 190110021). This Corps permit authorized fill of approximately 27 acres of vernal pool crustacean habitat, and required the preservation of 44 acres of vernal pools within a 482-acre on-site preserve. With the exception of this preserve and a designated open space area along Laguna Creek near Grant Line Road, the Sunridge Specific Plan land use designations and zoning provide for urban land use throughout the plan's areas. Therefore, the majority of the remaining 44 acres of vernal pools outside the Sares-Regis property are expected to be filled for future urban development (Foothill Associates 2004).

Development of the SDCPA will require the extension of certain utilities and the enlargement of certain roads in areas outside of the SDCPA boundary. Utility improvements include the development of a well field, water supply lines, and water treatment facilities and sewer lines. Well locations have all been sited to avoid affects to aquatic habitats. The water treatment facility will be located on land permitted for take in the Anatolia project (Service file number 1-1-96-F-0062) within the SDCPA boundary. All offsite road improvements and the sewer and water lines will be constructed in existing rights-of-way with affects to aquatic resources totaling less than one-half of an acre (Foothill Associates 2004).

All infrastructure improvements are required to serve the already permitted Anatolia project. Affects resulting from offsite infrastructure development and road widening to Sunrise Boulevard from White Rock Road, to Pyramid Road, to Douglas Road from Sunrise Boulevard, and to Americanos Road, are covered under separate Nationwide14 Permits (Corps file number 200300697), which are currently in review by the Service. Two additional road improvement projects will be permitted under Phase I and will provide service to Anatolia and the remaining projects within the SDCPA. Jaeger Road, an existing two-lane, partially paved road, will be paved from Douglas Road south to Pyramid Road. Pyramid Road, an existing dirt road, will be improved from Sunrise Boulevard to Jaeger Road. The two road improvements will affect less than one-tenth an acre (Foothill Associates 2004).

Continuing development in southern Sacramento County requires the installation of supporting infrastructure, such as sewer interceptors. The proposed Laguna Creek Interceptor would carry waste from developments that are scheduled for the Laguna area. The exact route of the proposed Laguna Creek Interceptor is not known at this time; however the proposed project could have both direct and indirect effects on listed vernal pool crustaceans, and other listed species. The proposed Laguna Creek Interceptor, approximately 87,000 feet in length, would extend eastward from the Sacramento Regional Water Treatment Plant (SRWTP) to east of Sunrise Boulevard (SRCSD 2000). The proposed Laguna Creek Interceptor would service an area which extends northwest from the intersection of Bradshaw and Calvin Roads nearly to the intersection of White Rock and Scott Roads, including the entire proposed Sunrise-Douglas development. This proposed interceptor would also provide tie-ins for the future Deer Creek Interceptor, approximately 90,000 feet in length, which is proposed for construction between 2021 and 2032, and the Aerojet Interceptor, approximately 55,000 feet in length, which is proposed for construction between 2014 through 2033 (SRCSD 2000). These two interceptors would eventually service areas east of Grant Line Road and northeast of Sunrise Road, respectively. Construction for the proposed Laguna Creek Interceptor is proposed for 2010 through 2024.

These future projects may adversely affect several federally-listed species, including the vernal pool crustaceans, the giant garter snake (*Thamnophis gigas*), the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), the California tiger salamander, the California red-legged frog (*Rana aurora draytonii*), the delta smelt (*Hypomesus transpacificus*) and its designated critical habitat, and the slender and Sacramento Orcutt grasses.

Currently, a South Sacramento Habitat Conservation Plan (SSHCP) is being developed. So therefore, while development activities in south Sacramento County may negatively affect vernal pool crustaceans and other listed species and their habitats, if completed, the SSHCP may eventually ensure that development activities would avoid, minimize, and compensate for take of listed species to the greatest extent possible. The SSHCP would address the indirect affects of facilitated planned development that results from the interrelated and interdependent actions that result from the proposed project. At minimum, the SSHCP will address the Federal and State listed species known at this time that may be affected by actions that are reasonably foreseeable as a result of the proposed action. Additional HCP-covered species may be added as the HCP is being developed. The SSHCP will be coordinated with CDFG and will include any appropriate State listed species. The SSHCP will address actions that are within the land use authority of Sacramento County and are reasonably foreseeable as a result of the proposed action, including land use approvals that are related to entitlements. Additional activities may be added as the SSHCP is developed. The SSHCP will cover a cumulative effects boundary area that is reasonably foreseeable as a result of the proposed project and the future projects.

### Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

A number of on-going and proposed projects could contribute to adverse affects to vernal pool crustaceans within Sacramento County, particularly in the vicinity of the proposed project. In most cases; however, these actions would be subject to Federal review and would, therefore, not be considered cumulative to the proposed project. For instance, several large highway and light rail construction, road improvement, water transfer, and utility and interceptor installation projects are currently planned or underway in south Sacramento County. These projects will contribute to the loss and degradation of habitats of listed species across their range, particularly in south Sacramento County. These activities may alter vernal pool crustacean habitats and can potentially harass, harm, injure, or kill these species. Because these activities have a Federal nexus, the Service will analyze these projects to determine if they will result in the jeopardy of federally-listed species and/or adverse modification and destruction of critical habitat for these species. An undetermined number of future projects that alter the habitat of vernal pool crustaceans, however, could go forward without the need for a Corps 404 permit. Activities that would potentially affect listed vernal pool crustaceans include development associated with urban, water, flood control, highway/roadway and utility projects, application of herbicides/pesticides, conversion to agricultural use, and indirect effects of adjacent development

such as urban run-off altering the hydrologic regime.

## **Conclusion**

After reviewing the current status of the vernal pool tadpole shrimp and vernal pool fairy shrimp, the environmental baseline for the area covered by this biological opinion, the effects of the proposed project, and the cumulative effects, it is the Service's biological opinion that the Douglas Road 98 project, as proposed, is not likely to jeopardize the continued existence of the vernal pool tadpole shrimp and vernal pool fairy shrimp. The proposed project is not located within designated critical habitat for the vernal pool fairy shrimp and vernal pool tadpole shrimp, and therefore, no destruction or adverse modification of critical habitat is anticipated.

## **INCIDENTAL TAKE STATEMENT**

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

## **Amount or Extent of Take**

The Service anticipates incidental take of the vernal pool fairy shrimp and vernal pool tadpole shrimp will be difficult to detect or quantify. The cryptic nature of these species and their relatively small body size make the finding of a dead specimen unlikely. The species occur in habitats that make them difficult to detect. Due to the difficulty in quantifying the number of individuals that will be taken as a result of the proposed action, the Service is quantifying take incidental to the project as the number of acres of vernal pools/ponded depressions (vernal pool

crustacean habitat) that will become unsuitable for vernal pool crustaceans due to direct or indirect effects as a result of the action. Therefore, the Service estimates that all vernal pool fairy shrimp and vernal pool tadpole shrimp inhabiting 3.91 acres of vernal pool habitat will become harassed, harmed, injured, or killed, as a result of the proposed action.

### **Effect of the Take**

The Service has determined that this level of anticipated take is not likely to result in jeopardy to the vernal pool fairy shrimp or the vernal pool tadpole shrimp. This action will not result in destruction or adverse modification of critical habitat.

Upon implementation of the following reasonable and prudent measures, incidental take associated with the proposed project on the vernal pool fairy shrimp and vernal pool tadpole shrimp in the form of harm, harassment, and mortality in the form of habitat degradation will become exempt from the prohibitions described under section 9 of the Act for direct and indirect effects.

### **Reasonable and Prudent Measures**

The Service has determined that the following reasonable and prudent measure is necessary and appropriate to minimize the effects of the proposed project on the vernal pool tadpole shrimp and vernal pool fairy shrimp.

1. Minimize the direct and indirect impacts to federally listed vernal pool crustaceans resulting from habitat modification and habitat loss in the Sunrise Douglas Community Plan Area.

### **Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the Act, the Corps must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

1. The Corps shall fully implement the principles and standards outlined in the document titled, "June 2004 Conceptual Strategy for Avoiding Minimizing and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area", for this project.
2. The Corps shall fully implement the Agencies' March 2004 map titled, "Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection" for this project.
3. The Corps shall assure all conservation measures as proposed by the project proponent in the July 30, 2004, *Douglas Road 98 Section 7 Biological Assessment*, and the October 14 and 26, 2004, letters from Foothill Associates to the Service, and the January 11, 2005, electronic mail correspondence from Foothill Associates to the Service, and identified by



the Service in the project description of our biological opinion are fully implemented.

4. The Corps shall assure the following "Best Management Practices" are implemented during project construction:
  - a. The project proponent shall include a copy of this biological opinion within its solicitations for construction of the proposed project, making the prime contractor responsible for implementing all requirements and obligations included within the biological opinion, and to educate and inform all other contractors involved in the project as to the requirements of the biological opinion. The project proponents shall make the terms and conditions in this biological opinion a required item in all contracts for the project that are issued by the County to all contractors. The project proponents shall provide the Division Chief of Endangered Species (Central Valley) at the Sacramento Fish and Wildlife Office with a hardcopy of the contract(s) for this project at least ten (10) working days before it is accepted or awarded.
  - b. At least 30 calendar days prior to initiating construction activities, the project proponents shall submit the names and curriculum vitae of the biological monitor(s) for the project.
  - c. A Service-approved biologist must be on-site during all construction-related activities that occur within 250 feet of vernal pool crustacean habitat, and that could result in the take of these federally-listed species. The biologist will have the authority to halt any action that might result in take of listed species. If the biologist exercises this authority, the Service and the CDFG shall be notified by telephone and letter within one (1) working day.
  - d. A Worker Environmental Awareness Training Program for construction personnel shall be conducted before the commencement of construction. The program shall provide workers with information on their responsibilities with regard to the listed vernal pool crustaceans, an overview of the life-history of the species, information on take prohibitions, and an explanation of the relevant terms and conditions of this biological opinion. Written documentation of the training must be submitted to the Sacramento Fish and Wildlife Office within three (3) working days of the completion of instruction.
  - e. Prior to groundbreaking, high-visibility fencing that is at least 4 feet tall shall be placed along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto adjacent off-site habitat. Such fencing will be inspected by the on-site biologist at the beginning of each work day and maintained in good condition. The fencing may be removed only when the construction of the project is completed.
  - f. During construction operations, the number of access routes, number and size of staging areas, and the total area of the proposed project activity will be limited to the

minimum necessary. Routes and boundaries will be clearly demarcated. Movement of heavy equipment to and from the project site will be restricted to established roadways to minimize habitat disturbance, and all vehicle traffic on access road will observe a speed limit of 20 miles per hour. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the wetland avoidance areas. All fueling, cleaning, and maintenance of vehicles and other equipment will occur only within designated areas and at least 250 feet away from any wetland habitats. The applicant will ensure contamination of habitat does not occur during such operations. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately. Such spills will be reported in the post-construction compliance reports.

- g. To control erosion during and after implementation of the project, the applicant will implement best management practices (BMPs), as identified by the Central Valley Regional Water Quality Control Board. Erosion control measures and BMPs, which retain soil or sediment, runoff from dust control, and hazardous materials on the construction site and prevent these from entering the vernal pool complexes, will be placed, monitored, and maintained throughout the construction operations. These measures and BMPs may include, but are not limited to, silt fencing, sterile hay bales, vegetative strips, hydroseeding, and temporary sediment disposal. The Stormwater Pollution Prevention Plan (SWPPP) described in the Description of the Proposed Action section of this Biological Opinion shall include these and any other measures necessary to prevent the discharge of contaminated runoff onto adjacent offsite wetland habitats.
- h. All heavy equipment, vehicles, and supplies will be stored at the designated staging area at the end of each work period. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the open space/wetland preserve and offsite wetland avoidance areas. Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. All fueling, cleaning, maintenance, and staging of vehicles and other equipment will occur only within designated areas and at least 250 feet away from the open space/wetland preserve and any off-site vernal pool crustacean habitats. All machinery will be properly maintained and cleaned to prevent spills and leaks. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately in accordance with applicable local, state and/or federal regulations. Such spills will be reported in the post-construction compliance reports.
- i. No clearing of vegetation and scraping, or digging, of soil in the avoided/preserve area.

5. The Corps shall ensure the applicant complies with the *Reporting Requirements* of this biological opinion.
6. The applicant has proposed to offset direct and/or indirect effects of vernal pool crustacean habitat loss through habitat preservation offsite. Prior to any fill of wetlands on the proposed project site, credits commensurate with acreage commitment shall be dedicated within a Service-approved habitat preservation bank and documentation provided to the Service. If the applicant chooses not to use an approved preservation bank, then at least 120 days prior to construction, the applicant shall submit documentation of the preservation habitat including conservation easement, management plan, funding instrument, easement holder etc. for our approval. Habitat preservation and restoration has been proposed in the October 26, 2004, letter from Foothill Associates to the Service:
  - (a) Direct effects to 3.91 acres of vernal pool crustacean habitat will be offset through habitat preservation. The project applicant proposes to provide compensatory preservation as follows:
    1. Two preservation acres of in kind habitat at the Anatolia preserve for each acre affected (2 Acre : 1 Acre); or
    2. Four preservation acres of in kind habitat at Borden Ranch for each acre affected (4 acres : 1 acre).
7. The applicant has proposed to offset direct and/or indirect effects of vernal pool crustacean habitat through habitat restoration or creation. Prior to any fill of wetlands on the proposed project site, credits commensurate with acreage commitment shall be dedicated within a Service-approved habitat restoration/creation bank. If the applicant chooses not to use an approved creation/restoration bank, then at least 90 days prior to construction, the applicant shall submit documentation of the creation/restoration habitat including: construction plan, conservation easement, management plan, funding instrument, easement holder etc. for our approval. The following criteria will be used by the Service when approving a restoration/creation site:
  - a. The restoration site's soils will be appropriate vernal pool soil types (e.g., San Joaquin, Redding, Corning);
  - b. The restoration site's soil would have been disturbed at some point in the past, either through land leveling, ditching and draining, berming, or other disturbance that has removed or modified edaphic and hydrologic features necessary to support vernal pool habitat; and
  - c. The restoration site will have a Service-approved conservation easement, a preserve management plan, and a long-term funding mechanism in place upon Service approval.

## Reporting Requirements

A post-construction compliance report prepared by the monitoring biologists must be submitted to the Chief of the Endangered Species Division (Central Valley) at the Sacramento Fish and Wildlife Office within thirty (30) calendar days of the completion of construction activity or within thirty (30) calendar days of any break in construction activity lasting more than thirty (30) calendar days. This report shall detail (i) dates that groundbreaking at the project started and the project was completed; (ii) pertinent information concerning the success of the project in meeting compensation and other conservation measures; (iii) an explanation of failure to meet such measures, if any; (iv) known project effects on federally-listed species, if any; (v) occurrences of incidental take of any these species; and (vi) other pertinent information.

The project applicant must report to the Service immediately any information about take or suspected take of federally-listed species not authorized in this biological opinion. The project applicant must notify the Service within 24 hours of receiving such information. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal. The Service contact is the Resident Agent-in-charge of the Service's Law Enforcement Division at (916) 414-6660.

Any contractor or employee, who during routine operations and maintenance activities, inadvertently kills or injures a federally-listed species must immediately report the incident to their representative. This representative must contact the California Department of Fish and Game immediately in the case of a dead or injured listed species. The California Department of Fish and Game contact for immediate assistance is State Dispatch at (916) 445-0045.

## CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases. The Service recommends the following conservation measures:

1. The Corps should work with the Service to address significant, unavoidable environmental effects resulting from projects proposed by non-Federal parties.
2. As recovery plans for listed vernal pool crustacean species are developed, the Corps should assist the Service in their implementation.
3. The Corps should work with the Service to ensure that its wetland delineation techniques fully assess the affects of proposed projects on listed vernal pool crustacean species.
4. The Corps, in partnership with the Service, should develop maintenance

guidelines for the Corps projects that will reduce adverse effects of routine maintenance on vernal pool crustaceans and their habitats. Such action may contribute to the delisting and recovery of the species by preventing degradation of existing habitat and increasing the amount and stability of suitable habitat.

5. The Corps should conduct a study of cumulative loss of wetlands habitat, including habitat of listed crustaceans, in Sacramento County.

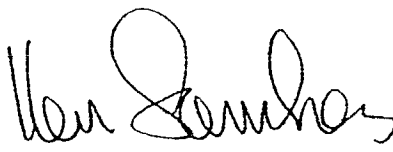
In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

#### REINITIATION—CLOSING STATEMENT

This concludes formal consultation on the proposed Douglas Road 98 project. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or, (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Please contact this office at (916) 414-6645, if you have any questions regarding the proposed Douglas Road 98 project.

Sincerely,

  
for Susan Moore  
Acting Field Supervisor

cc:

ARD (ES), Portland, Oregon

Mr. Kent Smith, California Dept. of Fish and Game, Rancho Cordova, CA

Ms. Elizabeth Goldman, Environmental Protection Agency, San Francisco, CA

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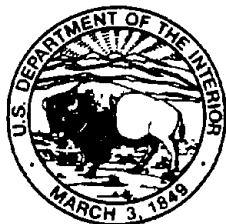
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Mr. Justin Cutler

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# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825-1846

In reply refer to:  
1-1-06-F-0138

**JUN 28 2006**

Mr. Will Ness  
Chief, Sacramento Office  
U.S. Army Corps of Engineers District, Sacramento  
1325 J Street  
Sacramento, California 95814-29223

Subject: Section 7 Consultation for the Proposed Arista del Sol Project [U.S. Army Corps of Engineers File Number 200400458], Sacramento County, California

Dear Mr. Ness:

This is in response to the U.S. Army Corps of Engineers' (Corps) request for formal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Arista del Sol (formerly Pappas Sunrise Douglas) project (proposed project) in Sacramento County, California. Your September 27, 2005, request was received in our office on September 28, 2005. This document represents the Service's biological opinion on the effects of the proposed action on the federally endangered vernal pool tadpole shrimp (*Lepidurus packardii*) and the federally threatened vernal pool fairy shrimp (*Branchinecta lynchei*) (vernal pool crustaceans), in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act).

In your letter to the Service, you requested formal consultation on the federally-listed California tiger salamander (*Ambystoma californiense*), slender Orcutt grass (*Orcuttia tenuis*) and the Sacramento Orcutt grass (*Orcuttia viscida*) (listed plant species). The proposed Arista del Sol project site and the entire Sunridge Specific Plan are outside of the range of the California tiger salamander. A survey conducted of the proposed project site June 18, 2004, did not indicate the presence of slender Orcutt grass or Sacramento Orcutt grass. Therefore, the proposed project will not affect the California tiger salamander or these listed plant species.

The findings and recommendations in this consultation are based on: (1) a May 31, 2006, electronic mail (email) and March 27, 2006, letter from Foothill Associates (project consultant) to the Service; (2) the August 9, 2005, *Arista del Sol Section 7 Biological Assessment* (Biological Assessment), prepared by Foothill Associates; (3) a September 27, 2005, letter from Corps to the Service requesting initiation of formal consultation on proposed project; (4) site visits;

Title	Last	Date
Author		6/23/06
OA		
Supervisor		
Div Chief		
OA		
DAFS Secretary		
DAFS		
AFS Secretary	Colvin	6/26
AFS		
FS Secretary		
FS		
Mailed:		
File Ref:	06-F-0138	

TAKE PRIDE  
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in the valley of sacramento 06F0138 Arista del Sol



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825-1846



In reply refer to:  
1-1-06-F-0138

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(5) meetings, email correspondence, and telephone conversations between representatives of the Service, Corps, Sheppard, Mullin, Richter, & Hampton, LLP (applicant's representative), and Foothill Associates; and (6) other information available to the Service.

### **Consultation History**

Beginning on May 10, 2002, the Planning Department of the County of Sacramento initiated and facilitated a series of meetings to discuss and develop potential wetlands and endangered species permitting strategies for the Sunrise Douglas Community Planning Area (SDCPA). These meetings were attended by landowners, developers, and their representatives, staff from Congressman Doug Ose's office, California Department of Fish and Game (CDFG), the Service, the Corps, and the Environmental Protection Agency (EPA). The entire group met at least twelve times between May 10th and November 22, 2002, in an attempt to develop a strategy to address issues relating to endangered species and wetland protection within the SDCPA. By November of 2002, a resolution was not reached and discussions ceased at that time.

On July 17, 2002, during this initial phase of meetings, the Sacramento County Board of Supervisors approved both the larger SDCPA and the SunRidge Specific Plan. On July 1, 2003, with the incorporation of the City of Rancho Cordova ("City"), the SDCPA came under the City's land use jurisdiction.

A smaller group of project proponents representing the property owners in the Sunridge Specific plan area initiated several meetings with the Fish and Wildlife Service during mid-2003. Discussions focused on avoidance of endangered species habitats in the SDCPA and specific plan areas. Again, no resolution with the Service was reached.

In March 2004, Congressman Doug Ose initiated meetings with the Federal Agencies, local agencies, and the landowners/developer representatives to facilitate resolution of the issues that had emerged during the previous meetings. Congressman Ose urged the Federal Agencies to develop a conceptual strategy that would meet the requirements of the Federal Agencies respective statutes. Congressman Ose urged the regulated parties to work cooperatively with the Federal Agencies to explore mechanisms to accommodate the agencies' obligations to comply fully with pertinent Federal laws and regulations, which place a premium on the avoidance of on-site wetlands resources to the extent practicable and the need to avoid jeopardizing the continued existence of threatened and endangered species. In short, the Congressman encouraged the parties to work cooperatively with one another to develop a conceptual onsite avoidance and offsite compensation strategy that reached a proper and workable balance between and amongst the following: the mandates of Federal law; the need to preserve ecosystem integrity and the habitat of endangered and threatened species; the need to acknowledge the planning policies and objectives of the City of Rancho Cordova; and the need to account for the economic realities facing private sector developers. These meetings continued through September 2004.

In June of 2004, the Federal Agencies developed two documents ("A Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area"; and the accompanying planning map) that outline our strategies for



conserving threatened and endangered species and wetland habitats and to provide a framework for development proposals. In addition, our strategy would provide some conceptual guidelines for permitting.

#### Service Correspondence

April 2, 1996, To: A. Champ-Corps of Engineers, Re: Formal Section 7 Consultation on Issuance of 404 Permit for the Sunrise Douglas Project (AKA Anatolia I, II, III), Service File #1-1-96-F-0062, Corps PN 190110021

November 22, 2002, To: M. Finan-Corps of Engineers, Re: Request for additional information on the Sunridge Specific Plan/Sunrise Douglas Community Plan, Service file #1-1-03-I-0411

July 18, 2002, To: D. Nottoli-Sacramento County Board of Supervisors, Re: Sunrise Douglas Community Plan and SunRidge Specific Plan-Service File #1-1-02-CP-2579

April 26, 2004, To: Col. Conrad-Corps of Engineers, Re: SunRidge Specific Plan, Service file #/Corps PN 200000336

#### Consultation History Specific to the Proposed Project

September 27, 2005. The Corps submitted a letter to the Service, requesting the initiation of formal consultation on the proposed project. Enclosed was an August 9, 2005, *Arista del Sol Section 7 Biological Assessment*, prepared by Foothill Associates. The Service received this letter and enclosure on September 28, 2005.

December 22, 2005. The Service issued a letter to the Corps, requesting additional information regarding proposed conservation measures for the project (Service file #1-1-05-I-1999).

March 27, 2006. Foothill Associates submitted a letter to the Service, providing a revised project description and additional conservation measures. The Service received this letter on March 28, 2006.

May 31, 2006. Sherri Dister of Foothill Associates emailed Kelly Fitzgerald of the Service additional information about proposed conservation measures for the project.

## **BIOLOGICAL OPINION**

### **Description of the Proposed Action**

The following is taken from the June 2004, document titled *A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area*, prepared by the Service, the Corps, and the EPA. This document and the accompanying planning map (Agency map) developed by the three Federal Agencies are hereby incorporated by reference into the project description. Thus, our biological opinion on this

proposed action, the Arista del Sol project, is based on application and full implementation of the Federal Agencies' conservation strategy outlined in this document and map, on all future projects in the SDCPA.

"In March through May 2004, representatives of the US Fish and Wildlife Service, US Environmental Protection Agency, and the US Army Corps Engineers (Agencies) met to formulate a conceptual-level strategy for avoiding, minimizing, and preserving aquatic resource habitat in the Sunrise-Douglas Community Plan Area (SDCPA). The intended result of this effort was to achieve reasonable protection and conservation of federally threatened and endangered species under the Endangered Species Act (ESA), while taking a regional approach to avoidance and minimization of impacts to waters of the US, including wetlands, in accordance with Section 404 (b)(1) guidelines under the Clean Water Act. The strategy also endeavors to ensure a viable South Sacramento County Habitat Conservation Plan (HCP) can be developed, given that a large proportion of vernal pool habitat under consideration by the HCP planners is at risk in the SDCPA.

The conceptual-level strategy is represented by preserve areas shown on the map titled Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection dated March 2004. To meet the goals of ESA and the Clean Water Act, the Agencies arrived at the boundaries of the "Preserve Areas" based on best professional judgment and a limited amount of information regarding regional and site-specific biology and hydro-geomorphology (such as wetland delineations, species accounts, and environmental impact reports), while recognizing that development is planned in the area. Of particular focus is the preservation of vernal pool complexes and corridors for Morrison Creek and Laguna Creek. The mapped boundaries are the smallest that would be acceptable to the Agencies and are predicated on ten principles and standards that would be followed by developers and planners as each element of the overall development proceeds.

The conceptual level strategy should be used by developers and planners to design and plan projects in the SDCPA. The Agencies will use the strategy to aid in the review of proposed development and evaluate the probable individual and cumulative effects on aquatic resources and sensitive species.

The Agencies anticipate that permit decisions and biological opinions will be completed on a case-by-case basis, using site-specific project and aquatic resource habitat information. Each proposed project would be evaluated on its own merits within the larger context of the SDCPA. Depending on the particular hydrology, habitat features, and development plans for a particular parcel, the conceptual preserve boundaries may need to be adjusted to minimize direct and indirect impacts to aquatic resources. Appropriate compensatory mitigation will be developed following demonstrated avoidance and minimization of project impacts."

The approximately 215-acre proposed Arista del Sol development site is located in southeastern Sacramento County, approximately five miles south of Highway 50, east of Sunrise Boulevard and the Folsom South Canal, and north of Jackson Road (Highway 16), in the City of Rancho Cordova. The proposed project site is situated west of and adjacent to Grantline Road, south of Douglas Road, and north of and adjacent to the proposed Chysanthy Boulevard. The proposed Americanos Boulevard would traverse the western third of proposed project site from north to south. The site is located in Sections 15 of Township 8 North, Range 7 East, on the U.S. Geological Survey's (USGS) Buffalo Creek 7.5-minute quadrangle.

The proposed project site is within the 6,042-acre SDCPA located within the Sacramento County General Plan Urban Service Boundary and Policy Area. As shown on the September 2004, Developers Map, approximately 210 acres of the proposed project site is also located within the Sunridge Specific Plan area, which provides a more detailed land use plan for development of approximately 2,632 acres within the SDCPA. (An additional five (5) acres is located on the Grantline 220 property boundary, south of and adjacent to the proposed project site; the Grantline 220 property is outside of the Sunridge Specific Plan boundary. The SDCPA is located within the headwaters of both the Morrison Creek and Laguna Creek watersheds. Land uses anticipated in the SDCPA and the Sunridge Specific Plan area, including the proposed project site, include low-, medium-, and high-density residential development, commercial mixed uses (*e.g.*, retail, office, and retail professional) and neighborhood parks. Other planned land uses in the vicinity include elementary, junior and senior high schools.

Historically, the SDCPA, including the proposed project site, has been used for dry land farming and grazing. The surrounding land use is predominantly grassland utilized for cattle grazing and related agricultural activities. A few homesteads, including rural residences, barns, and pens, are scattered around this area. The proposed project site is currently utilized as rangeland for the grazing of horses, and is developed with a residence and associated outbuildings.

The proposed Arista del Sol project involves the construction of approximately 133.5 acres of residential development, 5.6 acres of commercial development, 19.4 acres of neighborhood parks, 8.1 acres of drainage corridor and detention/water quality basins, and an approximately 41-acre open space wetland preserve, which would be protected in perpetuity. Project work within the adjacent Grantline 220 property includes road development and improvements needed to protect health and safety and fulfill the City of Rancho Cordova road improvement standards for the area. These improvements would include approximately 4.6 acres for the southern half of the Chrysanthy Road, such that development of the full width of Chrysanthy Road is covered by the proposed project, and approximately 0.4 acre for a transition lane in a 700-foot length on the west side of Grantline Road, south of the Arista del Sol property.

Required infrastructure (*e.g.*, sewer mains and laterals, water mains, and utility lines) will be developed in association with surrounding projects within the Sunridge Specific Plan area. The proposed land uses for the proposed project site are consistent with the planned land uses set forth in the Sunrise Douglas Community Plan and Sunridge Specific Plan.

The proposed 41.1-acre wetland preserve would be located in the western northern and central thirds of the proposed project site. Approximately 3.22 acres of vernal pools, 0.21 acre of

riverine seasonal wetland, and 0.01 acre of ephemeral drainage would be located within this wetland preserve. While the shape of the proposed wetland preserve is slightly different from the design shown on the Agency map, it appears to be consistent with Service principles.

The proposed project will directly affect approximately 10.52 acres of habitat for vernal pool crustaceans, including 5.37 acres of vernal pools, 0.36 acre of seasonal wetlands, 0.02 acre of ephemeral drainage, and 4.77 acres of pond. A total of 1.44 acres of vernal pool crustacean habitat, including 1.13 acres of wetland features located within the proposed 41.1-acre on-site wetland preserve that are within 250 of the proposed development, would be indirectly affected by the proposed project.

### **Proposed Conservation Measures**

The applicant has proposed conservation measures to avoid, minimize, and compensate for effects to vernal pool fairy shrimp and vernal pool tadpole shrimp that result from the implementation of the proposed project.

#### **1. Habitat Preservation and Restoration**

- a. A total of 11.96 acres of vernal pool crustacean habitat would be directly (10.52 acres) and indirectly (1.44 acre) affected by the proposed project. These direct and indirect effects will be offset through habitat preservation (refer to Table 1). Habitat preservation to compensate for direct affects will be achieved partially through the on-site preservation of 2.30 acres of vernal pool crustacean habitat in the proposed 41.1-acre on-site wetland preserve. The on-site preservation of 2.30 acres would compensate for direct effects to 1.15 acres of vernal pool crustacean habitat (at a ratio of two (2) acres preserved for every one (1) acre directly affected).

Additional habitat preservation to compensate for the remaining vernal pool crustacean habitat that would be directly (9.37 acres) and indirectly (1.44 acre) affected will be achieved through either:

- i. The preservation of 20.18 acres of vernal pool crustacean habitat at Service-approved site. The off-site wetland preservation site would be protected by a Conservation Easement held by a third party and managed in perpetuity consistent with a Service-approved preserve management plan. A long-term funding mechanism to fund the management of the off-site wetland preserve would be put in place upon Service approval of the site. This would effectively preserve two (2) acres of vernal pool crustacean habitat for every one (1) acre of vernal pool crustacean habitat that is directly affected and one (1) acre of habitat for every one (1) acre of habitat that is indirectly affected; or
- ii. The preservation of 20.18 acres of vernal pool crustacean habitat at a Service-approved conservation bank. This would effectively preserve two

- (2) acres of vernal pool crustacean habitat for every one (1) acre of vernal pool habitat that is directly affected and two (1) acres of habitat for every one (1) acre that is indirectly affected.
- b. At least 90 days prior to any fill of wetlands on the proposed project site, the Service must receive the following for review and approval:
- i. A Service-approved Perpetual Conservation Easement for the on-site wetland preservation area;
  - ii. A description of the mechanism for funding the monitoring, maintenance, and management of the on-site wetland preservation area; and
  - iii. A Monitoring, Maintenance, and Management Plan for the on-site wetland preservation area.
  - iv. The funding instrument shall be in place and Perpetual Conservation Easement shall be recorded within 90 days following the commencement of filling wetlands on the proposed project site.
- c. Direct and indirect effects to vernal pool crustacean habitat will be further offset through habitat restoration/creation at a 1:1 ratio (refer to Table 1). The restoration/creation goal will be to create and enhance wetlands with habitat functions and values equal to, or greater than, the wetland features affected by the implementation of the proposed project. Habitat restoration/creation will be achieved through the restoration of 11.96 acres of vernal pool crustacean habitat at a Service-approved site within Sacramento County that meets the following criteria:
- i. The restoration site's soils will be appropriate vernal pool soil types (e.g., San Joaquin, Redding, Corning);
  - ii. The restoration site's soil would have been disturbed at some point in the past, either through land leveling, ditching and draining, berming, or other disturbance that has removed or modified edaphic and hydrologic features necessary to support vernal pool habitat; and
  - iii. The restoration site will have a conservation easement, a preserve management plan, and a long-term funding mechanism in place upon Service approval.

**Table 1 – Vernal Pool Crustacean Habitat Effects and Compensation Acreages**

	Effects	Preservation Compensation	Creation Compensation
		(in acres) [2:1 Direct/1:1 Indirect]	(in acres) [1:1 Direct & Indirect]
Direct Effects	10.52	21.04	10.52
Indirect Effects	1.44	1.44	1.44
<b>TOTAL</b>	<b>11.96</b>	<b>22.48</b>	<b>11.96</b>
On-site Preserve		<b>2.30</b>	
Off-site Preservation		<b>20.18</b>	

*\*Note: This table does not include portions of directly and indirectly affected vernal pools/wetlands that extend onto the northern adjacent property (Grantline 208). Those that extend to the east are excluded from consideration due to the presence of Grant Line Road. This table includes portions of directly and indirectly affected vernal pools/wetlands that extend onto adjacent properties south (Grantline 220) and west (Sunridge 530).*

## 2. Construction Storm Water Pollution Prevention Plan

- a. Minimize off-site storm water runoff that might otherwise affect surrounding vernal pool crustacean habitat. Measures, which will be implemented during project construction to avoid adverse affects to the open space/wetland preserve and adjacent properties, include the following:
- b. Incorporate standard construction Best Management Practices (BMPs) into construction designs, plans and specifications. Contractors will be required to implement them during construction.
- c. Prepare a Storm Water Pollution Prevention Plan (SWPPP) for the proposed project with the following objectives:
  - i. Identify pollutant sources, including sources of sediment, that may affect the quality of storm water discharges from the construction of the proposed project;
  - ii. Identify BMPs to reduce or eliminate pollutants in storm water discharges and authorized non-storm water discharges from the proposed project site during construction;
  - iii. Outline and provide guidance for BMP monitoring;
  - iv. Identify project discharge points and receiving waters;
  - v. Address post-construction BMP implementation and monitoring; and



- vi. Address sediment / siltation / turbidity and non-visually detectable pollutant monitoring, and outline a sampling and analysis strategy.
- d. The construction BMPS for the proposed project will include the following specific measures for avoiding adverse impacts to the open space preserve and adjacent properties:
- i. Hydroseeding: All constructed slopes adjacent to the preserve will be hydroseeded with a native grassland mix. The hydroseed mix will be applied with a tackifying agent at a rate of at least two tons/acre and based on manufacturer's recommendations. The tackifying agent will be a hydraulic matrix that when applied, and upon drying, adheres to the soil to form a 100% cover that is biodegradable, promotes vegetation, and prevents soil erosion. The hydroseed mix will not be applied before, during, or immediately after rainfall so that the matrix will have an opportunity to dry for a minimum of 24 hours after installation.
  - ii. Sediment and Erosion Control: Certified weed-free straw wattles will be installed at the base of all slopes adjacent to the open space/wetland preserve and along the property lines of the proposed project site. Prior to installation of the straw wattles, a concave key trench approximately two to four inches deep will be contoured along the proposed installation route. Soil excavated for the trenching will be placed on the uphill or flow side of the straw wattles to prevent water from undercutting the straw wattles. Stakes will be driven in on alternating sides of the straw wattles, to hold them in place. The straw wattles will be maintained for a period of time at least until the native grassland vegetation is fully established and the soil is stabilized.
  - iii. Excavated Material: During construction activities associated with the implementation of the proposed project, all excavated materials will be deposited or stored such that this material cannot be washed into any watercourse, and excess supplies of certified weed-free straw bales and/or sedimentation fencing will be available at the construction site for periodic site-specific use as needed.
  - iv. Staging Areas: Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. No refueling, storage, servicing, or maintenance of equipment will take place within 100 feet of the open space preserve or adjacent off-site habitat. All machinery will be properly maintained and cleaned to prevent spills and leaks. Any spills or hazardous materials will be reported and cleaned up immediately in accordance with applicable local, state and/or Federal regulations.

- v. Construction Fencing: Temporary fencing will be installed prior to construction along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto the open space wetland preserve and adjacent off-site habitat.
- vi. Construction Monitoring: A Service-approved environmental monitor will be employed to ensure compliance with construction-related avoidance measures. The monitor will report directly to the City of Rancho Cordova Public Works project manager, and based on reports of non-compliance with environmental requirements, will be authorized to stop work orders and to take actions necessary to prevent damage to the open space wetland preserve and off-site habitat. Monitoring reports will be provided to the City of Rancho Cordova Department of Public Works project manager on a daily basis during initial ground breaking, and on a weekly basis (or more frequently as needed when problems arise) thereafter, until the open space wetland preserve construction is finished.

### Status of the Species

The vernal pool tadpole shrimp and vernal pool fairy shrimp were listed as endangered and threatened, respectively, on September 19, 1994 (59 FR 48136). The final rule to designate critical habitat for 15 vernal pool species, including these two crustaceans, was published on August 6, 2003 (68 FR 46684), with further clarifications on critical habitat designations for listed vernal pool species published in an August 11, 2005, final rule (70 FR 46923). Further information on the life history and ecology of the vernal pool fairy shrimp and vernal pool tadpole shrimp may be found in the final listing rule, the final rule to designate critical habitat. Eng *et al.* (1990), Helm (1998), and Simovich *et al.* (1992). The Service's reevaluation of Critical Habitat in 2005 designated several critical habitat units in Sacramento County within Unit 11, but the proposed project is not located in any critical habitat units.

*Life History.* The vernal pool tadpole shrimp has dorsal compound eyes, an approximately one-inch long large shield-like carapace that covers most of its body, and a pair of long cercopods at the end of its last abdominal segment (Linder 1952; Longhurst 1955; Pennak 1989). It is primarily a benthic animal that swims with its legs down. Vernal pool tadpole shrimp climb or scramble over objects, and plow along bottom sediments as they forage for food. Its diet consists of organic detritus and living organisms, such as fairy shrimp and other invertebrates (Pennak 1989; Fryer 1987). The females deposit their eggs on vegetation and other objects on the pool bottom. Tadpole shrimp eggs are known as cysts, and during the dry months of the year, they lie dormant in the dry pool sediments (Lanaway 1974; Ahl 1991).

The life history of the vernal pool tadpole shrimp is linked to the environmental characteristics of its vernal pool habitat. After winter rains fill the pools, its dormant cysts may hatch in as little as four days (Ahl 1991; Rogers 2001), and the animals may become sexually mature within three to four weeks after hatching (Ahl 1991; Helm 1998; King 1996). A portion of the cysts hatch immediately and the rest remain dormant in the soil to hatch during later rainy seasons (Ahl 1991). The vernal pool tadpole shrimp is a relatively long-lived species (Ahl 1991), and

will generally survive for as long as its habitat remains inundated, sometimes for six months or more (Ahl 1991; Gallagher 1996; Helm 1998). Adults are often present and reproductive until the pools dry up in the spring (Ahl 1991; Gallagher 1996; Simovich *et al.* 1992).

Vernal pool fairy shrimp have delicate elongate bodies, large stalked compound eyes, no carapace, and 11 pairs of phyllopods, or gill-like structures that also serve as legs. Typically less than one-inch long, they swim or glide gracefully upside-down by means of complex, wavelike beating movements. Fairy shrimp feed on algae, bacteria, protozoa, rotifers, and detritus. The second pair of antennae in adult male fairy shrimp are greatly enlarged and specialized for clasping the females during copulation. The females carry eggs in an oval or elongate ventral brood sac. The eggs are either dropped to the pool bottom or remain in the brood sac until the female dies and sinks. The dormant cysts are capable of withstanding heat, cold, and prolonged desiccation, and they can remain viable in the soil for decades after deposition. When the pools refill in the same or subsequent seasons, some, but not all, of the cysts may hatch. The cyst bank in the soil may therefore be comprised of cysts from several years of breeding (Donald 1983). The early stages of the fairy shrimp develop rapidly into adults and may become sexually mature within two weeks after hatching (Gallagher 1996; Helm 1998). Such quick maturation permits populations to persist in short-lived shallow bodies of water (Simovich *et al.* 1992). In pools that persist for several weeks to a few months, fairy shrimp may have multiple hatches during a single season (Helm 1998; Gallagher 1996).

*Distribution.* Vernal pool tadpole shrimp are found only in ephemeral freshwater habitats, including alkaline pools, clay flats, vernal lakes, vernal pools, vernal swales, and other seasonal wetlands in California (Helm 1998). The vernal pool tadpole shrimp is known from 219 occurrences in the Central Valley (CNDDB 2005), ranging from east of Redding in Shasta County south to Fresno County, and from a single vernal pool complex located in the San Francisco Bay National Wildlife Refuge in Alameda County. It inhabits vernal pools containing clear to highly turbid water, ranging in size from 54 square feet in the Mather Air Force Base area of Sacramento County, to the 89-acre Olcott Lake at Jepson Prairie in Solano County; the potential ponding depth of occupied habitat ranges from 1.5 inches to 59 inches. Although vernal pool tadpole shrimp are found on a variety of geologic formations and soil types, Helm (1998) found that over 50 percent of vernal pool tadpole shrimp occurrences were on High Terrace landforms and Redding and Corning soils. Vernal pool tadpole shrimp are uncommon even where vernal pool habitat occurs (Service 2005b). The largest concentration of vernal pool tadpole shrimp occurrences are found in the Southeastern Sacramento Valley Vernal Pool Region, as defined in the Service's *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (2005b). In this vernal pool region, this species occurs on a number of public and private lands in Sacramento County, and from a few locations in Yuba and Placer Counties, including Beale Air Force Base.

Vernal pool fairy shrimp are found only in ephemeral freshwater habitats, including alkaline pools, ephemeral drainages, rock outcrop pools, vernal pools, and vernal swales in California and Southern Oregon (Eriksen and Belk 1999). Occupied habitats range in size from rock outcrop pools as small as 11 square feet to large vernal pools up to 12 acres; the potential ponding depth of occupied habitat ranges from 1.2 inches to 48 inches. The vernal pool fairy shrimp is known from 363 occurrences extending from the Stillwater Plain in Shasta County through most of the

length of the Central Valley to Pinnacles in San Benito County (Eng *et al.* 1990; Fugate 1992; Sugnet and Associates 1993; CNDDDB 2005). Five additional, disjunct populations exist: one near Soda Lake in San Luis Obispo County; one in the mountain grasslands of northern Santa Barbara County; one on the Santa Rosa Plateau in Riverside County; one near Rancho California in Riverside County; and one on the Agate Desert near Medford, Oregon (CNDDDB 2005; Helm 1998; Eriksen and Belk 1999; Service 2003). Three of these isolated populations each contain only a single pool known to be occupied by the vernal pool fairy shrimp. Although the vernal pool fairy shrimp is distributed more widely than most other fairy shrimp species, it is generally uncommon throughout its range, and rarely abundant where it does occur (Eng *et al.* 1990; Eriksen and Belk 1999). The greatest number of known occurrences of the vernal pool fairy shrimp are found in the Southeastern Sacramento Vernal Pool Region (see Service 2005b), where it is found in scattered vernal pool habitats in Placer, Sacramento, and San Joaquin Counties, in the vicinity of Beale Air Force Base in Yuba County, and at a single location in El Dorado County.

Although the vernal pool crustaceans addressed in this biological opinion are not often found in the same vernal pool at the same time, when coexistence does occur, it is generally in deeper, longer lived pools (Eng *et al.* 1990; Thiery 1991; Gallagher 1996). In larger pools, vernal pool crustacean species may be able to coexist by utilizing different physical portions of the vernal pool or by eating different food sources (Daborn 1978; Mura 1991; Thiery 1991), or by hatching at different temperatures or developing at different rates (Thiery 1991; Hathaway and Simovich 1996).

*Dispersal.* The primary historic large-scale dispersal method for the vernal pool tadpole shrimp and vernal pool fairy shrimp likely was large scale flooding resulting from winter and spring rains which allowed colonization of different individual vernal pools and other vernal pool complexes (King 1996). This dispersal is currently non-functional due to the construction of dams, levees, and other flood control measures, and widespread urbanization within significant portions of the range of this species. Waterfowl and shorebirds may now be the primary dispersal agents for vernal pool tadpole shrimp and vernal pool fairy shrimp (King 1996; Simovich *et al.* 1992). The eggs of these branchiopods are either ingested (Krapu 1974; Swanson *et al.* 1974; Driver 1981; Ahl 1991) and/or adhere to the legs and feathers where they are transported to new habitats. Cysts may also be dispersed by a number of other species, such as cattle and humans (Eriksen and Belk 1999).

At the local level, vernal pool crustaceans are often dispersed from one pool to another through surface swales that connect one vernal pool to another. These dispersal events allow for genetic exchange between pools and create a population of animals that extends beyond the boundaries of a single pool. These dispersal events also allow vernal pool crustaceans to move into pools with a range of sizes and depths. In dry years, animals may only hatch in the largest and deepest pools. In wet years, animals may be present in all pools. The movement of vernal pool crustaceans into vernal pools of different sizes and depths allows these species to survive the environmental variability that is characteristic of their habitats.

The genetic characteristics of these species, as well as ecological conditions, such as watershed continuity, indicate that populations of vernal pool crustaceans are defined by pool complexes rather than by individual vernal pools (Fugate 1992). Therefore, the most accurate indication of the distribution and abundance of these species is the number of inhabited vernal pool complexes. The pools and, in some cases, pool complexes supporting these species may be small. Human-caused and unforeseen natural catastrophic events such as long-term drought, non-native predators, off-road vehicles, pollution, berming, and urban development, threaten their extirpation at some sites. Vernal pool fairy shrimp and vernal pool tadpole shrimp continue to be threatened by all of the factors which led to the original listing of this species, primarily habitat loss through agricultural conversion and urbanization (CNDDB 2005).

*Reasons for Decline and Threats to Survival.* The vernal pool tadpole shrimp and vernal pool fairy shrimp are imperiled by a variety of human-caused activities. Their habitats have been lost through direct destruction and modification due to filling, grading, disking, leveling, and other activities. In addition, vernal pools have been imperiled by a variety of anthropogenic modifications to upland habitats and watersheds. These activities, primarily urban development, water supply/flood control projects, land conversion for agriculture, off-road vehicle use, certain mosquito abatement measures, and pesticide/herbicide use can lead to disturbance of natural flood regimes, changes in water table depth, alterations of the timing and duration of vernal pool inundation, introduction of non-native plants and animals, and water pollution. These can result in adverse effects to vernal pool species.

In addition to direct loss, the habitats of the vernal pool tadpole shrimp and the vernal pool fairy shrimp have been and continue to be highly fragmented throughout their ranges due to conversion of natural habitat for urban and agricultural uses. Fragmentation results in smaller isolated shrimp populations. Ecological theory predicts that such populations will be highly susceptible to extirpation due to chance events, inbreeding depression, or additional environmental disturbance (Gilpin and Soulé 1988; Goodman 1987a, 1987b). If an extirpation event occurs in a population that has been fragmented, the opportunities for re-colonization would be greatly reduced due to geographic isolation from other source populations.

Historically, vernal pools and vernal pool complexes occurred extensively throughout the Sacramento Valley of California. Conversion of vernal pools and vernal pool complexes, however, has resulted in a 91 percent loss of vernal pool resources in California (State of California 2003d). By 1973, between 60 and 85 percent of the area within the Central Valley that once supported vernal pools had been destroyed (Holland 1978). In subsequent years, threats to this habitat type have continued and resulted in a substantial amount of vernal pool habitat being converted for human uses in spite of Federal regulations implemented to protect wetlands. The Corps' Sacramento District has several thousand vernal pools under its jurisdiction (Coe 1988), which includes most of the known populations of these listed species. Between 1987 and 1992, 467 acres of wetlands within the Sacramento area were filled pursuant to the Corps' Nationwide Permit 26 (Service 1992). A majority of those wetlands losses involved vernal pools, the endemic habitat of the vernal pool tadpole shrimp and the vernal pool

fairy shrimp. King (1996) has estimated that approximately 15 to 33 percent of the original biodiversity of Central Valley vernal pool crustaceans has been lost since the 1800s. On-going and increasing amounts of human activities are expected to contribute to the extensive loss—upwards of 60 to 70 percent—of remaining vernal pools (Coe 1988).

### **Environmental Baseline**

*Status of the Species in the Action Area.* Sacramento County represents important, high quality habitat for the two shrimp populations by providing large, nearly contiguous areas of relatively undisturbed vernal pool habitat. Sacramento County contains the greatest number of occurrences of vernal pool tadpole shrimp within the range of the species, and also is one of the two counties with the greatest number of occurrences of vernal pool fairy shrimp within the range of the species. Sacramento County contains 58 (17 percent) out of the total of 375 reported occurrences of vernal pool fairy shrimp, and 59 (33 percent) out of the total of 175 reported occurrences of vernal pool tadpole shrimp (CNDDDB 2005). Further, Sugnet and Associates (1993) reported that of 3,092 “discrete populations” checked, only 345 locations, or about 11 percent of all locations checked, were found to support the vernal pool tadpole shrimp. Of these 345 locations supporting the vernal pool tadpole shrimp, 219 (63 percent) were in Sacramento County. Further, of the 3,092 locations checked, 178 locations (6 percent) were found to support the vernal pool fairy shrimp. Of this total, 63 locations (35 percent) were within Sacramento County.

Throughout the Central Valley, approximately 13,000 acres of vernal pool habitats, including mitigation banks, have been set aside for the vernal pool fairy shrimp specifically as terms and conditions of section 7 consultations (Service 2005b). In the Southeastern Sacramento Valley Vernal Pool Region, vernal pool fairy shrimp occurrences are protected from development at a number of private mitigation areas, compensation banks, private ranches with conservation easements, and the Beale Air Force Base in Yuba County. Very few actions have been taken specifically to benefit the vernal pool tadpole shrimp, although several Habitat Conservation Plans are developing vernal pool conservation plans in the region, including Sacramento and Placer Counties (Service 2005b).

The vernal pools on the proposed project site are classified as the old-terrace type and are located on soils associated with Laguna geologic formation. Old-terrace is a rapidly disappearing habitat type in Sacramento County that consists of ancient river channel deposits that were laid down from 600,000 to more than one million years ago by the American River. By comparison, young terrace formation dates from 100,000 to 200,000 years ago. Old-terrace formation generally has a higher density of vernal pools, deeper pools, and a greater number of special status plants and crustaceans than young-terrace formations. Some special status species found in old-terrace pools may have evolved from species inhabiting shores of ancient lakes in the Central Valley. Old-terrace pools may have served as refugia for these species as the lakes disappeared (pers. comm., K. Fuller, Service, 2004). Sacramento County contains an estimated 764 wetted acres of vernal pools on low terrace, 1,390 wetted acres of vernal pools on high terrace, and 189 wetted acres of vernal pools on volcanic mudflow.



There are two predominant soil types found within south Sacramento County. The Valley Springs soil type typifies Gill Ranch, located in Sacramento County, approximately 12 miles southeast of the proposed project site. Vernal pools found within the Valley Springs soil type are the young-terrace formation. Young-terrace formations, because they have a higher slope gradient, tend to have fewer vernal pools that are typically smaller and shallower. These vernal pools also are inundated for shorter durations. These factors typically result in lower species diversity. Generally, the larger the vernal pool on this soil type, the higher its biotic diversity. Vernal pool fairy shrimp, vernal pool tadpole shrimp, and Sacramento Orcutt grass are less likely to occur in young-terrace formation vernal pools found on Valley Springs soils. (pers. comm., R. Holland, 2004).

The Laguna geologic formation and its associated soils entirely characterize the SDCPA. Vernal pools found within this soil type are old-terrace types. Old-terrace types, because they have a lower slope gradient, tend to have pools that are larger, deeper, and clearer. These pools are inundated for longer periods, but dry and refill less often than the Valley Springs soil type. Generally, the smaller the vernal pool on this soil type, the higher its invertebrate diversity. Although vernal pool fairy shrimp occur in pools on both soil types, they are more frequently found in pools on Laguna soils. Vernal pool tadpole shrimp are found almost exclusively in old-terrace formation vernal pools found on Laguna soils.

Several areas containing old-terrace formation have been protected for their high quality vernal pool habitat and high concentration of special status species populations by the Sacramento Valley Conservancy (SVC). The proposed contiguous preserve area, the SVC's Vernal Pool Prairie Preserve, would cover 2,000 to 3,000 acres and supports a variety of special status plants and animals on relatively undisturbed grasslands containing young and old terrace formations and northern hardpan vernal pools. Within the proposed Prairie Preserve, areas already protected include the Arroyo Seco Mitigation Bank, the Excelsior 184 parcel, and the Sacramento County owned Multi-Cultural Park; outside of the proposed Prairie Preserve, the Sunrise Douglas Preservation Bank, and a portion of Howard Ranch are protected. All of these preserves are within proposed critical habitat for the two listed vernal pool crustaceans addressed in this biological opinion.

*Factors Affecting the Species within the Action Area.* A number of State, local, private, and unrelated Federal actions have occurred within the project area and adjacent region affecting the environmental baseline of these species. Some of these projects have been subject to prior section 7 consultation. Based on an informal review, the Service has issued, to date, approximately 195 biological opinions to Federal agencies on proposed projects in Sacramento County that have adversely affected the shrimp species since the two species were proposed to be listed in 1994. This total does not reflect the formal consultations that were withdrawn, those that are suspended, those that have insufficient information to conclude an effects analysis, those that were amended, or conference opinions. No State of California actions that have taken place within Sacramento County have adversely affected the species in the action area. Although these proposed projects in Sacramento County have eliminated vernal pools and vernal pool complexes, the offsetting compensating measures are designed to minimize the effects of take of

this species resulting in both negative and positive effects to the species. The trend for the two vernal pool species within the county, however, is most likely downward as the current rate of habitat preservation is less than the rate of historical and current habitat loss.

On-going residential and commercial developments within Sacramento County also affect the listed vernal pool crustaceans and their habitats. Human population growth in Sacramento County has steadily increased. For the period between 1990 and 2000, population growth in Sacramento County increased 17.5 percent, with an average annual growth rate of 17.5 percent (State of California 2002). The annual growth appears to be increasing, as demonstrated by the 2.63 percent and 2.2 percent increases in population growth in 2001 and 2002, respectively (State of California 2003a, 2003b). Increased housing demand and urban development accompany the population growth in Sacramento County. Between 1990 and 2000, housing units in Sacramento County increased by 1.37 percent annually (State of California 2000, 2003c). Population growth and concomitant housing demand and subsequent loss of vernal pool habitat are projected to continue. Population projections for Sacramento County are expected to increase above 2000 levels by 19.7 percent in 2010, by 28 percent in 2015, and by 37.5 percent in 2020 (State of California 2001).

In south Sacramento County, the Urban Services Boundary (USB) is a planning boundary that coincides with the areas north of the Cosumnes River/Deer Creek drainage system. Between 1993 and 2000, an estimated 14,950 acres were converted to urban development within the USB (pers. comm., D. Gifford, CDFG, 2004), based on an analysis of California Department of Water Resources mapping data. An independent analysis of urban growth in Sacramento County estimated that 22,000 acres were converted between 1990 and 2000, averaging 2,200 acres per year (pers. comm., R. Radmacher, Sacramento County, 2004). As of 1998 (the most recent year for which vernal pool mapping from aerial photographs is available), there remained an estimated 23,533 acres of vernal pool grasslands within the USB, supporting approximately 946 acres of wetland vernal pool acreage (pers. comm., L. Konde, CDFG, 2003).

The actions listed above have resulted in both direct and indirect impacts to vernal pools within the region, and have contributed to the loss of vernal pool tadpole shrimp and vernal pool fairy shrimp populations. Although a reduction of the two shrimp populations has not been quantified, the acreage of lost habitat continues to grow.

*Vernal Pool Crustacean Presence in the Proposed Action Area.* Vernal pool complexes, occurring north of the Cosumnes River/Deer Creek drainage and within the USB, contain a high density of occupied pools of both vernal pool tadpole shrimp and vernal pool fairy shrimp. There are 31 known occurrences of vernal pool tadpole shrimp inside the USB, compared to 17 occurrences outside the USB (CNDDDB 2005). There are 25 known occurrences of vernal pool fairy shrimp inside the USB, compared to 18 occurrences outside the USB (CNDDDB 2005). The data from the CNDDDB do not reflect additional reported records in the Sunrise-Douglas area, where 137 occurrences of vernal pool tadpole shrimp and 46 occurrences of vernal pool fairy shrimp have been recorded.

Both vernal pool fairy shrimp and vernal pool tadpole shrimp have been documented to occur within the Sunridge Specific Plan area, including the proposed project site. Focused surveys for vernal pool crustaceans were conducted on the parcels within the Sunridge Specific Plan area using the Service's current Dip Net protocol between February and March of 1993 by Sugnet and Associates (1993). The results of these surveys indicated the presence of California linderiella (*Linderiella occidentalis*) from four discrete locations and vernal pool fairy shrimp from one location; vernal pool crustaceans were identified on the proposed Arista del Sol project site. All of the vernal pools and seasonal wetlands and some of the ponds on the proposed project site provide appropriate habitat for both vernal pool fairy shrimp and vernal pool tadpole shrimp. Because these species are known from other parcels within the SDCPA and vicinity, and it is likely the vernal pool crustaceans would disperse within the watershed between the project sites, the applicant assumes presence of vernal pool fairy shrimp and vernal pool tadpole shrimp in all suitable habitat on the proposed project site (Foothill Associates 2005). Therefore, construction of the proposed project in any portion of the proposed project site that supports suitable habitat is likely to adversely affect populations of vernal pool fairy shrimp and vernal pool tadpole shrimp.

### **Effects of the Proposed Action**

Although vernal pool fairy shrimp and vernal pool tadpole shrimp exhibit slightly differing habitat requirements and life cycles, they often inhabit the same vernal pool complexes and have been known to co-occur in individual vernal pools. These species are supported by similar habitat types, including vernal pools, seasonally ponded areas within vernal swales, rock outcrop ephemeral pools, playas, alkali flats, and other depressions that hold water of similar volume, depth, area, and duration. Therefore, both species are subject to a common set of threats and considerations.

### **Direct Effects**

Direct effects are the immediate effects of the proposed project on the species or its habitat and include the effects of interrelated action and interdependent actions. Interrelated actions are those actions that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those actions that have not independent utility apart from the proposed action (50 CFR §402.02).

The proposed project would result in fill of 10.52 acres of vernal pool crustacean habitat, including 5.37 acres of vernal pools, 0.36 acre of riverine seasonal wetlands, 0.02 acre of ephemeral drainage, and 4.77 acres of ponds. The Service considers an entire vernal pool or seasonal wetland to be directly affected when even a portion of it is filled or subject to similar direct affects.

Only two of the three ponds occurring on the proposed project site were identified as habitat for vernal pool crustaceans as vernal pool tadpole shrimp had been previously identified there (Sugnet & Associates, 1993). The third, larger pond is inundated year round and is therefore not

considered suitable habitat for these species (Foothill Associates 2005). Three small segments of ephemeral drainage were included as habitat for vernal pool crustaceans as these features directly link nearby vernal pools (Foothill Associates 2005).

#### Interrelated and Interdependent Actions

Additional effects from interrelated and interdependent actions are expected from the proposed project. Approximately 115 acres of vernal pools are present in the entire Sunridge Specific Plan area (Foothill Associates 2005). The Corps issued a permit for the largest project in this area, the approximately 1,225-acre Anatolia I, II, III property that included approximately 71 acres of vernal pools (Corps file number 190110021). This Corps permit authorized fill of approximately 27 acres of vernal pool crustacean habitat, and required the preservation of 44 acres of vernal pools within a 482-acre on-site preserve. With the exception of this preserve and a designated open space area along Laguna Creek near Grant Line Road, the Sunridge Specific Plan land use designations and zoning provide for urban land use throughout the plan's areas.

In 2004, the Federal Agencies developed two documents ("A Conceptual-Level Strategy for Avoiding, Minimizing, and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area"; and the accompanying planning map [Agency map]) that outline our strategies for conserving threatened and endangered species and wetland habitats and to provide a framework for development proposals. The conceptual design consists of two preserve areas, one entirely within the Sunridge Ranch project site (i.e., the Western Preserve) and one that incorporates portions of Sunridge Park, Douglas 103, Grantline 208, and the proposed project site (i.e., the Eastern Preserve). The approximately 50-acre Western Preserve was designed to protect populations of slender Orcutt grass, vernal pool fairy shrimp, and vernal pool tadpole shrimp. The approximately 159-acre Eastern Preserve would be designed to protect the headwaters of one of the forks of Morrison Creek as well as habitat for listed vernal pool crustaceans. The combined total of approximately 209 acres of wetland preserves would protect 17.32 acres of vernal pool crustacean habitat (Foothill Associates 2005). These preserves would be protected through conservation easements aimed at protecting preserve functions and values: the easements would be held and managed by a habitat management-focused non-profit entity, chosen by the land owners and approved by the Federal Agencies. These preserves would be managed and funded in perpetuity according to a preserve management plan prepared by landowners and approved by the Federal Agencies. The management plan would establish specific goals and objectives to ensure that the conditions within the preserves are maintained and, where needed, enhanced.

Development of the SDCPA will require the extension of certain utilities and the enlargement of certain roads in areas outside of the SDCPA boundary. Utility improvements include the development of a well field, water supply lines, and water treatment facilities and sewer lines. Well locations have all been sited to avoid affects to aquatic habitats. The water treatment facility will be located on land permitted for take in the Anatolia project (Service file number 1-1-F-96-0062) within the SDCPA boundary. All offsite road improvements and the sewer and water lines will be constructed in existing rights-of-way with affects to aquatic resources totaling less than one-half of an acre (Foothill Associates 2005).

All infrastructure improvements are required to serve the already permitted Anatolia project. Road improvement projects will be planned to provide service to Anatolia and the remaining projects within the SDCPA. Jaeger Road, an existing two-lane, partially paved road, will be paved from Douglas Road, south to Pyramid Road. Pyramid Road, an existing dirt road, will be improved from Sunrise Boulevard to Jaeger Road. Direct and indirect effects to vernal pool crustacean habitat that would result from the implementation of these two road improvement projects would be offset with conservation measures that would stipulate habitat preservation and creation (Foothill Associates 2005). The development of the Sunridge Specific Plan area for residential and commercial purposes would be facilitated by the proposed road widening project.

Continuing development in southern Sacramento County requires the installation of supporting infrastructure, such as sewer interceptors. The proposed Laguna Creek Interceptor would carry waste from developments that are scheduled for the Laguna area, servicing an area which extends northwest from the intersection of Bradshaw and Calvin Roads nearly to the intersection of White Rock and Scott Roads, including the entire proposed Sunrise-Douglas development. The exact route of the proposed Laguna Creek Interceptor is not known at this time; however the proposed project could have both direct and indirect effects on listed vernal pool crustaceans, and other listed species. The proposed Laguna Creek Interceptor, approximately 87,000 feet in length, would extend eastward from the Sacramento Regional Water Treatment Plant (SRWTP) to east of Sunrise Boulevard (SRCSD 2000). The Laguna Creek Interceptor is proposed to be constructed between 2010 and 2024. This proposed interceptor would also provide tie-ins for the future Deer Creek Interceptor, approximately 90,000 feet in length, which is proposed for construction between 2021 and 2032, and the Aerojet Interceptor, approximately 55,000 feet in length, which is proposed for construction between 2014 through 2033 (SRCSD 2000). These two interceptors would eventually service areas east of Grant Line Road and northeast of Sunrise Road, respectively.

These future projects may adversely affect several federally-listed species, including the vernal pool crustaceans, the giant garter snake (*Thamnophis gigas*), the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), the California tiger salamander, the California red-legged frog (*Rana aurora draytonii*), the Delta smelt (*Hypomesus transpacificus*) and its designated critical habitat, and the slender and Sacramento Orcutt grasses.

Currently, a South Sacramento Habitat Conservation Plan (SSHCP) is being developed. So therefore, while development activities in south Sacramento County may negatively affect vernal pool crustaceans and other listed species and their habitats, the SSHCP, if completed, will eventually ensure that development activities would avoid, minimize, and compensate for take of listed species to the greatest extent possible. The SSHCP would address the indirect affects of facilitated planned development that results from the interrelated and interdependent actions that result from the proposed project. At minimum, the SSHCP will address the Federal and state listed species known at this time that may be affected by actions that are reasonably foreseeable as a result of the proposed action. Additional HCP-covered species may be added as the HCP is being developed. The SSHCP will be coordinated with CDFG and will include any appropriate State listed species. The SSHCP will address actions that are within the land use authority of

Sacramento County and are reasonably foreseeable as a result of the proposed action, including land use approvals that are related to entitlements. Additional activities may be added as the SSHCP is developed. The SSHCP will cover a cumulative effects boundary area that is reasonably foreseeable as a result of the proposed project and the future projects.

### Indirect Effects

Indirect effects are caused by or result from the proposed action, are later in time, and are reasonably certain to occur. Indirect effects may occur outside of the area directly affected by the action (50 CFR §402.02). The Service considers all vernal pool crustacean habitat not considered to be directly affected but within 250 feet of proposed construction activities to be indirectly affected by project implementation. Indirectly affected habitat includes all habitat supported by future destroyed areas and swales, and all habitat otherwise damaged by loss of watershed, human intrusion, introduced species, and pollution that will be caused by the proposed project.

The proposed project could result in indirect effects to a total of 1.44 acres of suitable vernal pool crustacean habitat. Approximately 1.13 acres of these wetland features exist on land that is proposed for the on-site wetland preserve; however, these features will be indirectly affected by construction activities occurring within 250 feet of them. In addition, vernal pool crustacean habitat that is adjacent and south (Grantline 220) and east (Sunridge 530) of the proposed project site would be indirectly affected by the implementation of the proposed project. Vernal pool crustacean habitat to the east is divided from the proposed project site by Grantline Road, a major roadway, and therefore indirect effects are not anticipated. North and adjacent to the proposed project site is the Grantline 208 property, within the approved Sunrise Douglas Community Plan, that has submitted a Clean Water Act permit application to fill wetlands; a separate section 7 consultation has been completed for this project that addressed direct and indirect effects to vernal pool crustacean habitat on this.

Indirect effects to vernal pools in the project vicinity that could result from the implementation of the proposed project include hydrologic alteration, disturbances from construction equipment, non-point source pollution, and impacts from human encroachment. Individual crustaceans and their cysts, which may inhabit these vernal pools and seasonal wetlands, may be injured or killed by any of the following indirect effects:

*Erosion* - The ground disturbing activities in the watershed of vernal pools associated with the proposed project action area are expected to result in siltation when pools fill during the wet season following construction. Siltation in pools supporting listed crustaceans may result in decreased cyst viability, decreased hatching success, and decreased survivorship among early life history stages, thereby reducing the number of mature adults in future wet seasons. The proposed project construction activities could result in increased sedimentation transport into vernal pool crustacean habitats during periods of heavy rains.

*Changes in hydrology* - The biota of vernal pools and swales can change when the hydrologic regime is altered (Bauder 1986, 1987). Survival of aquatic organisms like the vernal pool fairy shrimp and vernal pool tadpole shrimp are directly linked to the water regime of their habitat



(Zelder 1987). Therefore, construction near vernal pool areas will, at times, result in the decline of local sub-populations of vernal pool organisms, including fairy shrimp and tadpole shrimp.

*Introduction of non-natives* - There is an increased risk of introducing weedy, non-native plants into the vernal pools both during and after project construction due to the soil disturbance from clearing and grubbing operations, and general vegetation disturbance associated with the use of heavy equipment.

*Chemical contamination* - The runoff from chemical contamination can kill listed species by poisoning. Oils and other hazardous materials associated with construction equipment could be conveyed into the vernal pool crustacean habitats by overland runoff during the rainy season, thereby adversely affected water quality. Many of these chemical compounds are thought to have adverse affects on all of the listed vernal pool crustaceans and/or their cysts. Individuals may be killed directly or suffer reduced fitness through physiological stress or a reduction in their food base due to the presence of these chemicals.

*Insecticide Contamination* – Recent research suggests that pyrethroid insecticide use in residential developments will cause toxicity, and even mortality, to aquatic species (Weston *et al.*, in press). The application of these insecticides, and subsequent runoff into aquatic features surrounding residential developments, was demonstrated to be a limiting factor for aquatic invertebrates; in fact, the abundance of resident macroinvertebrates was inversely correlated with concentrations of pyrethroid insecticides (Weston *et al.*, in press).

The proposed project will contribute to a local and range-wide trend of habitat loss, fragmentation, and degradation—the principle reasons that the vernal pool tadpole shrimp and vernal pool fairy shrimp have declined and were given protection under the Act. The proposed project, in combination with ongoing loss of habitat, will contribute to the fragmentation and reduction of the acreage of the remaining listed vernal pool crustacean habitat located in south Sacramento County and is expected to lead to the reduction in the range of both of these listed vernal pool crustaceans.

### **Cumulative Effects**

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Large areas within south Sacramento County, including the SDCPA, have been designated for development in the next 20 years under the Sacramento General Plan. The timeline for development in these areas began in the early 1990s and is expected to continue for the next 5 to 10 years. This growth and conversion would contribute to several potentially significant affects to listed species, including loss, alteration, or degradation of habitat, particularly of wetlands, degradation of water quality, and increases in the frequency and intensity of flooding.

A number of on-going and proposed projects could contribute to adverse affects to vernal pool crustaceans within Sacramento County, particularly in the vicinity of the proposed project. In most cases, however, these actions would be subject to Federal review and would, therefore, not be considered cumulative to the proposed project. For instance, several large highway and light rail construction, road improvement, water transfer, and utility and interceptor installation projects are currently planned or underway in south Sacramento County. These projects will contribute to the loss and degradation of habitats of listed species across their range, particularly in south Sacramento County. These activities may alter vernal pool crustacean habitats and can potentially harass, harm, injure, or kill these species. Because these activities have a Federal nexus, the Service will analyze these projects to determine if they will result in the jeopardy of federally-listed species and/or adverse modification and destruction of critical habitat for these species. An undetermined number of future projects that alter the habitat of vernal pool crustaceans, however, could go forward without the need for a Corps 404 permit. Activities that would potentially affect listed vernal pool crustaceans include development associated with urban, water, flood control, highway/roadway and utility projects, application of herbicides/pesticides, conversion to agricultural use, and indirect effects of adjacent development such as urban run-off altering the hydrologic regime.

The Service is aware of other projects currently under review by the State, County, and local authorities where biological surveys have documented the occurrence of federally-listed species. These projects include such actions as urban expansion, water transfer projects that may not have a Federal nexus, and continued agricultural development. The cumulative effects of these known actions pose a significant threat to the eventual recovery of these species. Because the vernal pool tadpole shrimp and vernal pool fairy shrimp are endemic to vernal pools in the Central Valley, coastal ranges, and a limited number of sites in the transverse range and Santa Rosa plateau of California, the Service anticipates that a wide range of activities will affect these species. Such activities include, but are not limited to: (1) urban development, (2) water projects, (3) flood control projects, (4) highway projects, (5) utility projects, (6) chemical contaminants, and (7) conversion of vernal pools to agricultural use. Many of these activities will be reviewed under section 7 of the Act as a result of the Federal nexus provided by section 404 of the Federal Water Pollution Control Act, as amended (Clean Water Act).

The proposed project is located in a region where future destruction and modification of vernal pool crustacean habitat is anticipated. Sacramento County will continue to develop within the County's sphere of influence. This development will result in increased direct loss of habitats for these listed species. Continued loss of these habitats throughout the region could conceivably affect the genetic diversity of the local population(s) of listed vernal pool crustaceans. Any loss of genetic diversity can have significant effects on a population's ability to respond to environmental change over time (Frankel and Soule 1981). Within the proposed action area, the predominant types of non-Federal actions that might affect the listed vernal pool crustaceans consist of residential and commercial development, with effects the same as, or similar to, those described above.

**Conclusion**

After reviewing the current status of the vernal pool fairy shrimp and vernal pool tadpole shrimp, the environmental baselines for the area covered by this biological opinion, the effects of the proposed project, and the cumulative effects, it is the Service's biological opinion that the Arista del Sol project, as proposed, is not likely to jeopardize the continued existence of these species. Critical habitat has been designated in Sacramento County for the vernal pool fairy shrimp or the vernal pool tadpole shrimp, although the proposed project is not located within critical habitat designated for these listed species. Therefore, the proposed project is not likely to destroy or adversely modify designated critical habitat for both the vernal pool fairy shrimp and the vernal pool tadpole shrimp, or any other listed species.

**INCIDENTAL TAKE STATEMENT**

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by the Corps so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to require any entity participating in the project to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

**Amount or Extent of Take**

The implementation of the proposed project will directly affect 10.52 acres and indirectly affect 1.44 acres of vernal pool crustacean habitat. The Service anticipates incidental take of vernal pool tadpole shrimp and vernal pool fairy shrimp will be difficult to detect or quantify for the following reasons: the aquatic nature of the organisms and their relatively small body size make the finding of a dead specimen unlikely; losses may be masked by seasonal fluctuations in numbers and other causes; and the species occurs in habitat that makes them difficult to detect.

Due to the difficulty in quantifying the number of vernal pool fairy shrimp and vernal pool tadpole shrimp that will be killed as a result of the proposed action, the Service is quantifying take incidental to the project as the number of acres of vernal pool crustacean habitat that will become unsuitable for the listed species due to direct or indirect effects as a result of the proposed project. Therefore, the Service estimates that all vernal pool fairy shrimp and vernal pool tadpole shrimp inhabiting 11.96 acres of vernal pool crustacean habitat will harassed, harmed, injured, or killed, as a result of the proposed project.

Upon implementation of the following reasonable and prudent measures, all vernal pool fairy shrimp and vernal pool tadpole shrimp inhabiting 11.96 acres of vernal pool crustacean habitat will become exempt from the prohibitions described under section 9 of the Act for direct and indirect effects associated with the proposed Arista del Sol project. The listed vernal pool crustaceans may be harmed, harassed or killed in association with the acres exempted under Section 9 of the Act. No other forms of take are authorized under this opinion.

### **Effect of the Take**

In the accompanying biological opinion, the Service has determined that this level of anticipated take is not likely to result in jeopardy to the vernal pool tadpole shrimp and vernal pool fairy shrimp. The proposed project is not likely to result in destruction or adverse modification of designated critical habitat for the vernal pool fairy shrimp and vernal pool tadpole shrimp because no critical habitat for these species has been designated in the proposed action area.

Upon implementation of the following reasonable and prudent measures, incidental take associated with the proposed project on the vernal pool fairy shrimp and vernal pool tadpole shrimp in the form of harm, harassment, and mortality in the form of habitat degradation will become exempt from the prohibitions described under section 9 of the Act for direct and indirect effects.

### **Reasonable and Prudent Measures**

The Service has determined that the following reasonable and prudent measure is necessary and appropriate to minimize the effects of the proposed project on the vernal pool tadpole shrimp and vernal pool fairy shrimp.

1. Minimize the direct and indirect effects to federally-listed vernal pool crustaceans resulting from habitat modification and habitat loss in the Sunrise Douglas Community Plan Area.

### **Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the Act, the Corps must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

1. The Corps shall fully implement the principles and standards outlined in the document titled, "June 2004 Conceptual Strategy for Avoiding Minimizing and Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area", for this project.
2. The Corps shall fully implement the March 2004 map titled, "Sunrise-Douglas Community Plan Area Conceptual-Level Strategy for Aquatic Resource Protection" for this project.
3. The Corps shall assure all conservation measures as proposed by the project proponent (pages 9-12 of the *Arista del Sol Section 7 Biological Assessment* (Foothill Associates 2005) and in the May 31, 2006, email from Foothill Associates to the Service), and identified by the Service on pages 6-10 in the project description of our biological opinion are fully implemented.
4. The Corps shall assure the following "Best Management Practices" are implemented during project construction:
  - a. The project proponent shall include a copy of this biological opinion within its solicitations for construction of the proposed project, making the prime contractor responsible for implementing all requirements and obligations included within the biological opinion, and to educate and inform all other contractors involved in the project as to the requirements of the biological opinion. The project proponents shall make the terms and conditions in this biological opinion a required item in all contracts for the project that are issued by the County to all contractors. The project proponents shall provide the Division Chief of Endangered Species (Central Valley) at the Sacramento Fish and Wildlife Office with a hardcopy of the contract(s) for this project at least ten (10) working days before it is accepted or awarded.
  - b. At least 30 calendar days prior to initiating construction activities, the project proponents shall submit the names and curriculum vitae of the biological monitor(s) for the project.
  - c. A Service-approved biologist must be on-site during all construction-related activities that occur within 250 feet of vernal pool crustacean habitat, and that could result in the take of these federally-listed species. The biologist will have the authority to halt any action that might result in take of listed species. If the biologist exercises this authority, the Service and the CDFG shall be notified by telephone and letter within one (1) working day.
  - d. A Worker Environmental Awareness Training Program for construction personnel shall be conducted before the commencement of construction. The program shall provide workers with information on their responsibilities with regard to the listed vernal pool crustaceans, an overview of the life-history of the species, information on take prohibitions, and an explanation of the relevant terms and conditions of this biological opinion. Written documentation of the training must be submitted to the Sacramento Fish and Wildlife Office within three (3) working days of the completion of instruction.

- e. Prior to groundbreaking, high-visibility fencing that is at least 5 feet tall shall be placed along the boundaries of the construction zone to clearly mark this zone and to prevent construction vehicles or personnel from straying onto adjacent off-site habitat and the onsite wetland preserve. Such fencing will be inspected by the on-site biologist at the beginning of each work day and maintained in good condition. The fencing may be removed only when the construction of the project is completed.
- f. During construction operations, the number of access routes, number and size of staging areas, and the total area of the proposed project activity will be limited to the minimum necessary. Routes and boundaries will be clearly demarcated. Movement of heavy equipment to and from the project site will be restricted to established roadways to minimize habitat disturbance, and all vehicle traffic on access roads will observe a speed limit of 20 miles per hour.
- g. To control erosion during and after implementation of the project, the applicant will implement best management practices (BMPs), as identified by the Central Valley Regional Water Quality Control Board. Erosion control measures and BMPs, which retain soil or sediment, runoff from dust control, and hazardous materials on the construction site and prevent these from entering the vernal pool complexes, will be placed, monitored, and maintained throughout the construction operations. These measures and BMPs may include, but are not limited to, silt fencing, sterile hay bales, vegetative strips, hydroseeding, and temporary sediment disposal. The Stormwater Pollution Prevention Plan (SWPPP) described in the Proposed Conservation Measures section on pages 8-10 of this biological opinion shall include these and any other measures necessary to prevent the discharge of contaminated runoff onto the onsite wetland preserve and adjacent offsite wetland habitats. This SWPPP should be submitted to the Service for review and approval at least 90 days prior to any groundbreaking activity on the proposed project site.
- h. All heavy equipment, vehicles, and supplies will be stored at the designated staging area at the end of each work period. The stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the open space/wetland preserve and offsite wetland avoidance areas. Staging areas for construction equipment will be located so that spills of oil, grease or other petroleum by-products will not be discharged into any watercourse or sensitive habitat. All fueling, cleaning, maintenance, and staging of vehicles and other equipment will occur only within designated areas and at least 250 feet away from the open space/wetland preserve and any off-site vernal pool crustacean habitats. All machinery will be properly maintained and cleaned to prevent spills and leaks. The applicant will ensure contamination of habitat does not occur during such operations. All workers will be informed of the importance of preventing spills and appropriate measures to take should a spill occur. Any spills or hazardous materials will be cleaned up immediately in accordance with applicable local, state and/or Federal regulations. Such spills will be reported in the post-construction compliance reports.



- i. No clearing of vegetation and scraping, or digging, of soil in the avoided/preserve area
5. The Corps shall ensure that applicant avoids activities that would impact the onsite avoided area/preserve areas such as:
  - a. Alteration of topography within the preserve;
  - b. Placement of any new structures (including outfalls, culverts, electrical/gas transmission lines) within the preserve unless specifically addressed in the project description;
  - c. Dumping, burning, and/or burying of rubbish, garbage, or any other wastes and fill materials in the preserve area;
  - d. Fire protection activities not required to protect existing structures at the proposed project site; and
  - e. Use of pesticides or other toxic chemicals in the preserve unless addressed in the project description of subsequent management plans.
6. The Corps shall ensure the applicant complies with the *Reporting Requirements* of this biological opinion.
7. The applicant has proposed to offset direct and indirect effects of vernal pool crustacean habitat loss through a combination of on-site and offsite habitat preservation, as described in the Proposed Conservation Measures section on pages 6-8 of this biological opinion. Prior to any fill of wetlands on the proposed project site, credits commensurate with acreage commitment shall be dedicated within a Service-approved habitat preservation bank and documentation provided to the Service. This habitat preservation bank should be within the Sunrise Douglas Community Plan Area.

If the applicant chooses not to use an approved preservation bank, then at least 120 days prior to construction, the applicant shall submit documentation of the preservation habitat including conservation easement, management plan, funding instrument, easement holder etc. for our approval.

8. The applicant has proposed to offset direct and indirect effects of vernal pool crustacean habitat through habitat restoration or creation, as described in the Proposed Conservation Measures section on pages 6-8 of this biological opinion. Prior to any fill of wetlands on the proposed project site, credits commensurate with acreage commitment shall be dedicated within a Service-approved habitat restoration/creation bank. If the applicant chooses not to use an approved creation/restoration bank, then at least 90 days prior to construction, the applicant shall submit documentation of the creation/restoration habitat including: construction plan, conservation easement, management plan, funding instrument, easement holder etc. for our approval. In addition to the criteria proposed by the project proponent, as described in the Proposed Conservation Measures section on

page 7 of this biological opinion, the Service shall utilize the following additional criteria when approving a restoration/creation site:

- a. Any vernal pool restoration/creation must minimize effects to any adjacent and existing vernal pools and wetlands; and
- b. Densities of restored/created vernal pools must not be greater than historical densities for the geologic formation.

### **Reporting Requirements**

The Service-approved biologist shall notify the Service immediately if any listed species are found on site, and shall submit a report including the date(s), location(s), habitat description, and any corrective measures taken to protect the species found. The Service-approved biologist shall submit locality information to the CDFG, using completed California Native Species Field Survey Forms, no more than 30 calendar days after completing the last field visit of the project site. Each form shall have an accompanying scale map of the site, such as a photocopy of a portion of the appropriate 7.5-minute U.S. Geological Survey map and shall provide at least the following information: township, range, and quarter section; name of the 7.5-minute or 15-minute quadrangle; dates (day, month, year) of field work; number of individuals and life stage (where appropriate) encountered; and a description of the habitat by community-vegetation type. The Service-approved biologist shall also provide a high quality copy of this information to the staff zoologist, California Department of Fish and Game, 1807 13<sup>th</sup> Street #202, Sacramento, California, 95814, phone (916) 445-0045.

Any contractor or employee who, during routine operations and maintenance activities, inadvertently kills or injures a listed wildlife species must immediately report the incident to their representative. The Service is to be notified within one (1) working day of the finding of any dead or injured listed wildlife species or any unanticipated take of the species addressed in this biological opinion. The Service contact persons for this are the Division Chief, Endangered Species Division (Central Valley) at (916) 414-6600 and Resident Agent-in-charge Scott Heard at (916) 414-6660.

The project proponents shall submit a post-construction compliance report prepared by the monitoring biologists to the Sacramento Fish and Wildlife Office (SFWO) within 30 calendar days of the completion of construction activity. This report shall detail the following: (1) dates that construction occurred; (2) pertinent information concerning the success of the project in meeting conservation measures; (3) an explanation of failure to meet such measures, if any; (4) occurrences of incidental take of vernal pool crustaceans, if any; and (6) other pertinent information.

### **CONSERVATION RECOMMENDATIONS**

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and

threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases.

1. The Corps should work with the Service to address significant, unavoidable environmental effects resulting from projects proposed by non-Federal parties.
2. The Corps should assist the Service in implementing the final recovery plan for vernal pool species by requiring applicants to adhere to the conservation measures and rates of habitat preservation described in the document.
3. The Corps should work with the Service to ensure that its wetland delineation techniques fully assess the affects of proposed projects on listed vernal pool crustacean species.
4. The Corps, in partnership with the Service, should develop maintenance guidelines for the Corps projects that will reduce adverse effects of routine maintenance on vernal pool crustaceans and their habitats. Such action may contribute to the delisting and recovery of the species by preventing degradation of existing habitat and increasing the amount and stability of suitable habitat.
5. The Corps should conduct a study of cumulative loss of wetlands habitat, including habitat of listed crustaceans, in Sacramento County.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

#### **REINITIATION--CLOSING STATEMENT**

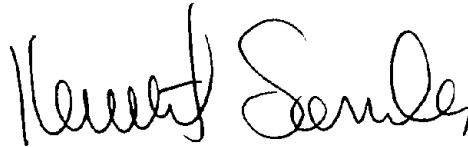
This concludes formal consultation with the Corps on the proposed Arista del Sol project. As provided in 50 CFR §402.16, re-initiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending re-initiation.

Mr. Will Ness

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Please contact this office at (916) 414-6645 if you have any questions regarding the proposed Arista del Sol project.

Sincerely,

A handwritten signature in black ink, appearing to read "Ken Sanchez". The signature is fluid and cursive, with the first name "Ken" and last name "Sanchez" clearly distinguishable.

Ken Sanchez  
Assistant Field Supervisor

cc:

ARD (ES), Portland, OR

Kent Smith, California Dept. of Fish and Game, Rancho Cordova, CA

Elizabeth Goldman, Environmental Protection Agency, San Francisco, CA

Sheri Dister, Foothill Associates, Rocklin, CA

Robert Uram, Sheppard Mullin Richter & Hampton, LLP, San Francisco, CA

Thad Johnson, Pappas Investments, Sacramento, CA

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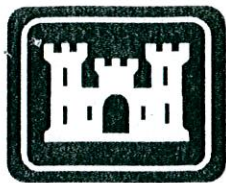
## **Appendix E**

### **Materials and Comments Provided during Scoping**

**SUNRIDGE SPECIFIC PLAN PROPERTIES**  
**EIS SCOPING MEETING**

**Meeting Materials**  
**&**  
**Comments Provided During Scoping**

**Scoping Period**  
**July 30 to August 31, 2009**



US Army Corps  
of Engineers  
Sacramento District  
1325 J Street  
Sacramento, CA 95814-2922

# Public Notice

Public Notice Number: SPK-2009-00511

Date: July 20, 2009

Comments Due: August 31, 2009

In reply, please refer to the Public Notice Number

**SUBJECT:** Intent to Prepare a Draft Environmental Impact Statement for the Sunridge Specific Plan Projects, in Rancho Cordova, Sacramento County, CA

**SUMMARY:** The U.S. Army Corps of Engineers, Sacramento District, (Corps) will prepare a Environmental Impact Statement (EIS) for six residential development projects in the Sunridge Specific Plan area in Rancho Cordova, Sacramento County, California. The EIS is being prepared for the projects as part of ongoing litigation concerning Department of the Army permits issued by the Corps between 2005 and 2007 for five of the projects and a pending permit decision for the sixth. A stay in the litigation is in place while the Corps reevaluates the impacts of these projects through preparation of the EIS. Collectively the projects would require the filling of approximately 29.7 acres of waters of the United States, including wetlands.

**ADDRESSES:** Please send written comments to Michael Jewell, U.S. Army Corps of Engineers, Sacramento District, 1325 J Street, Room 1480, Sacramento, CA, 95814-2922.

**FOR FURTHER INFORMATION CONTACT:** Questions about the EIS can be answered by Michael Jewell, (916) 557-6605, email: [michael.s.jewell@usace.army.mil](mailto:michael.s.jewell@usace.army.mil), address: 1325 J Street, Room 1480, Sacramento, CA 95814-2922.

## **SUPPLEMENTARY INFORMATION:**

The Sunridge Specific Plan area is a master-planned area consisting of nine residential and commercial developments located in eastern Rancho Cordova, Sacramento County, California. The Specific Plan, which was originally approved by the County of Sacramento in 2002, is part of a larger planning effort in the City of Rancho Cordova called the Sunrise-Douglas Community Plan. Three of the nine projects in the Sunridge Specific Plan area have been built. The proposed action is the construction of the remaining six projects in the Specific Plan area. Collectively, these six projects are referred to as the Sunridge Specific Plan Projects.

Between 2005 and 2007, the Corps completed Environmental Assessments, made Findings of No Significant Impact, and issued permits for five of the six Sunridge Specific Plan Projects. The permitted projects are Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98, and Douglas Road 103. A permit decision has not been rendered for the sixth of the Sunridge Specific Plan Projects, Arista Del Sol.

1. Anatolia IV (ID SPK-1994-00210): The permitted project is located on a 25-acre site south of Douglas Road and adjacent to the west side of Jaeger Road. Approximately 1.36 acres of waters of the United States, including wetlands, are to be filled to construct 134 houses, several roads and other infrastructure. As compensation for the loss of waters, the permittee would construct 1.36 acres of wetland habitat. The permittee for this project is Sunridge, LLC.



2. Sunridge Village J (ID SPK-2001-00230): The permitted project is located on a 81.25-acre site in the southwest corner of the intersection formed by Douglas Road and Jaeger Road. Approximately 2.99 acres of waters of the United States, including wetlands, are to be filled to construct 369 houses, several roads and other infrastructure. As compensation for the loss of waters, the permittee would construct 3.38 acres of wetland habitat. The permittee for this project is Cresleigh Homes.

3. Grantline 208 (ID SPK 1994-00365): The permitted project is located on a 211-acre site in the southeast corner of the intersection formed by Douglas Road and Grantline Road. Approximately 5.7 acres of waters of the United States, including wetlands, are to be filled to construct 855 houses, several roads and other infrastructure. As compensation for the loss of waters, the permittee would construct 6.15 acres of wetland habitat. The permittee for this project is Grantline Investors, LLC.

4. Douglas Road 98 (ID SPK-2002-00568): The permitted project is located on a 105-acre site south of Douglas Road and adjacent to the west side of Grantline Road. Approximately 3.9 acres of waters of the United States, including wetlands, are to be filled to construct 693 houses, several roads and other infrastructure. As compensation for the loss of waters, the permittee would construct 3.9 acres of wetland habitat. The permittee for this project is Woodside Homes.

5. Douglas Road 103 (ID SPK-1997-00006): The permitted project is located on a 106-acre site adjacent to the south side of Douglas Road and west of Grantline Road. Approximately 2 acres of waters of the United States, including wetlands, are to be filled to construct 301 houses, several roads and other infrastructure. As compensation for the loss of waters, the permittee would construct 7.25 acres of wetland habitat. The permittee for this project is Douglas Grantline 103 Investors, LLC.

6. Arista Del Sol (ID SPK-2004-00458): The proposed project is located on a 210-acre site south of Douglas Road and adjacent to the west side of Grantline Road. Approximately 13.9 acres of waters of the United States, including wetlands, would be filled to construct 906 houses, several roads and other infrastructure. As compensation for the loss of waters, the permittee proposed to construct 13.9 acres of wetland habitat. The permit applicant for this project is Pappas Investments.

The EIS will include an evaluation of a reasonable range of alternatives. Currently, the following alternatives are expected to be analyzed in detail: (1) the no action alternative, (2) the proposed action (the applicants preferred projects), and (3) a reduced development footprint alternative. The no action alternative will be limited development on uplands, while avoiding all waters of the United States. A reduced development footprint alternative will involve less development with fewer impacts to waters of the United States.

The Corps' scoping process for the EIS includes a public involvement program with several opportunities to provide oral and written comments. In addition to public meetings and notifications in the Federal Register, the Corps will issue public notices when the draft and final EISs are available. Affected federal, state, and local agencies, Native American tribes, and other interested private organizations and parties are invited to participate.

Potentially significant issues to be analyzed in the EIS include, but are not limited to: hydrology, water supply, water quality, cultural resources, biological resources, traffic and transportation, and air quality.

The Corps is the lead agency for preparation of the EIS under the requirements of the National Environmental Policy Act (NEPA). The Corps has requested the U.S. Environmental Protection Agency (EPA) and U.S. Fish and Wildlife Service (USFWS) serve as cooperating agencies on the EIS. The Corps will coordinate with other agencies, such as the City of Rancho Cordova, in



preparation of the EIS.

Other environmental review and consultation requirements for the proposed actions include water quality certification under Section 401 of the Clean Water Act from the California Regional Water Quality Control Board. All six of the Sunridge Specific Plans projects have received water quality certification. In addition, because the projects may affect federally-listed endangered species, the Corps was required to consult with the USFWS in accordance with Section 7 of the federal Endangered Species Act. Biological Opinions were issued by the USFWS for all six projects.

Two public scoping meetings for the EIS will be held on July 30, 2009, with the first from 5:00pm to 6:00pm and the second from 7:00pm to 8:00pm. The meetings will be held at the Rancho Cordova City Hall, 2729 Prospect Park Drive, American River Room – South, Rancho Cordova, CA 95670. Interested parties can provide oral and written comments at the meetings. Scoping comments should be submitted before August 31, 2009 but may be submitted at any time prior to publication of the Draft EIS.

Interested parties may register for the Corps' public notice email notification lists at:

<http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/pnlist.html>.

systems subject to the Privacy Act of 1974 (5 U.S.C. 552a), as amended. The proposed deletion is not within the purview of subsection (r) of the Privacy Act of 1974, (5 U.S.C. 552a), as amended, which requires the submission of a new or altered system report.

Dated: July 13, 2009.

**Morgan E. Frazier,**

Alternate OSD Federal Register Liaison  
Officer, Department of Defense.

#### **S434.15 DLA-C**

##### **SYSTEM NAME:**

Automated Payroll Cost and  
Personnel System (APCAPS).

##### **REASON:**

Records are now covered under the DFAS Privacy notice T7205a, entitled "Defense Business Management System (DBMS)" published July 2, 2009, at 74 FR 31711.

[FR Doc. E9-17152 Filed 7-17-09; 8:45 am]

**BILLING CODE 5001-06-P**

## **DEPARTMENT OF DEFENSE**

### **Department of the Army, Corps of Engineers**

#### **Intent To Prepare a Draft Environmental Impact Statement for the Sunridge Specific Plan Projects, in Rancho Cordova, Sacramento County, CA, ID SPK-2009-00511**

**AGENCY:** Department of the Army, U.S. Army Corps of Engineers, DOD.

**ACTION:** Notice of intent.

**SUMMARY:** The U.S. Army Corps of Engineers, Sacramento District, (Corps) will prepare a Environmental Impact Statement (EIS) for six residential development projects in the Sunridge Specific Plan area in Rancho Cordova, Sacramento County, California. The EIS is being prepared for the projects as part of ongoing litigation concerning Department of the Army permits issued by the Corps between 2005 and 2007 for five of the projects and a pending permit decision for the sixth. A stay in the litigation is in place while the Corps reevaluates the impacts of these projects through preparation of the EIS. Collectively the projects would require the filling of approximately 29.7 acres of waters of the United States, including wetlands.

**ADDRESSES:** Please send written comments to Michael Jewell, U.S. Army Corps of Engineers, Sacramento District, 1325 J Street, Room 1480, Sacramento, CA, 95814-2922.

##### **FOR FURTHER INFORMATION CONTACT:**

Questions about the proposed action and EIS can be answered by Michael Jewell, (916) 557-6605, e-mail: michael.s.jewell@usace.army.mil.

**SUPPLEMENTARY INFORMATION:** The Sunridge Specific Plan area is a master-planned area consisting of nine residential and commercial developments located in eastern Rancho Cordova, Sacramento County, California. The Specific Plan, which was originally approved by the County of Sacramento in 2002, is part of a larger planning effort in the City of Rancho Cordova called the Sunrise-Douglas Community Plan. Three of the nine projects in the Sunridge Specific Plan area have been built. The proposed action is the construction of the remaining six projects in the Specific Plan area. Collectively, these six projects are referred to as the Sunridge Specific Plan Projects.

Between 2005 and 2007, the Corps completed Environmental Assessments, made Findings of No Significant Impact, and issued permits for five of the six Sunridge Specific Plan Projects. The permitted projects are Anatolia IV, Sunridge Village J, Grantline 208, Douglas Road 98, and Douglas Road 103. A permit decision has not been rendered for the sixth of the Sunridge Specific Plan Projects, Arista Del Sol.

1. *Anatolia IV (ID SPK-1994-00210):* The permitted project is located on a 25-acre site south of Douglas Road and adjacent to the west side of Jaeger Road. Approximately 1.36 acres of waters of the United States, including wetlands, are to be filled to construct 134 houses, several roads and other infrastructure. As compensation for the loss of waters, the permittee would construct 1.36 acres of wetland habitat. The permittee for this project is Sunridge, LLC.

2. *Sunridge Village J (ID SPK-2001-00230):* The permitted project is located on a 81.25-acre site in the southwest corner of the intersection formed by Douglas Road and Jaeger Road. Approximately 2.99 acres of waters of the United States, including wetlands, are to be filled to construct 369 houses, several roads and other infrastructure. As compensation for the loss of waters, the permittee would construct 3.38 acres of wetland habitat. The permittee for this project is Cresleigh Homes.

3. *Grantline 208 (ID SPK 1994-00365):* The permitted project is located on a 211-acre site in the southeast corner of the intersection formed by Douglas Road and Grantline Road. Approximately 5.7 acres of waters of the United States, including wetlands, are to be filled to construct 855 houses, several roads and

other infrastructure. As compensation for the loss of waters, the permittee would construct 6.15 acres of wetland habitat. The permittee for this project is Grantline Investors, LLC.

4. *Douglas Road 98 (ID SPK-2002-00568):* The permitted project is located on a 105-acre site south of Douglas Road and adjacent to the west side of Grantline Road. Approximately 3.9 acres of waters of the United States, including wetlands, are to be filled to construct 693 houses, several roads and other infrastructure. As compensation for the loss of waters, the permittee would construct 3.9 acres of wetland habitat. The permittee for this project is Woodside Homes.

5. *Douglas Road 103 (ID SPK-1997-00006):* The permitted project is located on a 106-acre site adjacent to the south side of Douglas Road and west of Grantline Road. Approximately 2 acres of waters of the United States, including wetlands, are to be filled to construct 301 houses, several roads and other infrastructure. As compensation for the loss of waters, the permittee would construct 7.25 acres of wetland habitat. The permittee for this project is Douglas Grantline 103 Investors, LLC.

6. *Arista Del Sol (ID SPK-2004-00458):* The proposed project is located on a 210-acre site south of Douglas Road and adjacent to the west side of Grantline Road. Approximately 13.9 acres of waters of the United States, including wetlands, would be filled to construct 906 houses, several roads and other infrastructure. As compensation for the loss of waters, the permittee proposed to construct 13.9 acres of wetland habitat. The permit applicant for this project is Pappas Investments.

*The EIS will include an evaluation of a reasonable range of alternatives. Currently, the following alternatives are expected to be analyzed in detail:* (1) The no action alternative, (2) the proposed action (the applicants preferred projects), and (3) a reduced development footprint alternative. The no action alternative will be limited development on uplands, while avoiding all waters of the United States. A reduced development footprint alternative will involve less development with fewer impacts to waters of the United States.

The Corps' scoping process for the EIS includes a public involvement program with several opportunities to provide oral and written comments. In addition to public meetings and notifications in the **Federal Register**, the Corps will issue public notices when the draft and final EISs are available. Affected federal, state, and local agencies, Native American tribes, and other interested

private organizations and parties are invited to participate.

*Potentially significant issues to be analyzed in the EIS include, but are not limited to:* Hydrology, water supply, water quality, cultural resources, biological resources, traffic and transportation, and air quality. The Corps is the lead agency for preparation of the EIS under the requirements of the National Environmental Policy Act (NEPA). The Corps has requested the U.S. Environmental Protection Agency (EPA) and U.S. Fish and Wildlife Service (USFWS) serve as cooperating agencies on the EIS. The Corps will coordinate with other agencies, such as the City of Rancho Cordova, in preparation of the EIS.

Other environmental review and consultation requirements for the proposed actions include water quality certification under Section 401 of the Clean Water Act from the California Regional Water Quality Control Board. All six of the Sunridge Specific Plans projects have received water quality certification. In addition, because the projects may affect federally-listed endangered species, the Corps was required to consult with the USFWS in accordance with Section 7 of the federal Endangered Species Act. Biological Opinions were issued by the USFWS for all six projects.

Two public scoping meetings for the EIS will be held on July 30, 2009, with the first from 5 p.m. to 6 p.m. and the second from 7 p.m. to 8 p.m. The meetings will be held at the Rancho Cordova City Hall, 2729 Prospect Park Drive, American River Room—South, Rancho Cordova, CA 95670. Interested parties can provide oral and written comments at the meetings. Scoping comments should be submitted before August 31, 2009 but may be submitted at any time prior to publication of the Draft EIS.

Interested parties may register for the Corps' public notice email notification lists at: <http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/pnlist.html>.

Dated: July 9, 2009

**James A. Porter,**

*Lt. Colonel, Corps of Engineers, Acting District Engineer.*

[FR Doc. E9-17159 Filed 7-17-09; 8:45 am]

**BILLING CODE 3720-58-P**

## DEPARTMENT OF DEFENSE

### Department of the Army, Corps of Engineers

#### Notice of Availability of the Final Environmental Impact Statement for the C-111 Spreader Canal Western Project Located in Miami-Dade Counties, FL

**AGENCY:** U.S. Army Corps of Engineers, DoD.

**ACTION:** Notice of availability.

**SUMMARY:** The U.S. Army Corps of Engineers (USACE) is issuing this notice to advise the public that a Final Environmental Impact Statement (EIS) has been completed and is available for review and comment.

**DATES:** In accordance with the National Environmental Policy Act (NEPA), we have filed the Final EIS with the U.S. Environmental Protection Agency (EPA) for publication of their notice of availability in the **Federal Register**. The EPA notice officially starts the 30-day review period for this document. It is the goal of the USACE to have this notice published on the same date as the EPA notice. However, if that does not occur, the date of the EPA notice will determine the closing date for comments on the Final EIS. Comments on the Final EIS must be submitted to the address below under Further Contact Information and must be received no later than 5 p.m. Eastern Standard Time, Monday, August 17, 2009.

**ADDRESSES:** The Final EIS can be viewed online at <http://www.saj.usace.army.mil/Divisions/Regulatory/InterestItems.htm>. Copies of the Final EIS are also available for review at the following libraries: Miami-Dade Public Library, Homestead Branch, 700 N. Homestead Blvd., Homestead, FL 33030. Miami-Dade Public Library, Main Branch, 101 West Flagler Street, Miami, FL 33130.

**FOR FURTHER INFORMATION CONTACT:** Ms. Alisa Zarbo, Project Manager, U.S. Army Corps of Engineers, Jacksonville District, 4400 PGA Boulevard, Suite 500, Palm Beach Gardens, Florida 33410, Telephone: 561-472-3516, Fax: 561-626-6971.

**SUPPLEMENTARY INFORMATION:** The South Florida Water Management District (SFWMD) proposes to construct the C-111 Spreader Canal Western Project in Miami-Dade County. The project addresses the need to restore ecosystem function in Taylor Slough and Florida Bay within the Everglades National Park, the adjacent Southern Glades, the

Model Land, and other associated wetlands and estuarine systems. The SFWMD anticipates that this proposed project will become an authorized Comprehensive Everglades Restoration Plan (CERP) project, and that it will receive credit for the early construction of this proposed project as the local sponsor. This Final EIS builds upon the draft Project Implementation Report (PIR)/EIS that has already been released to the public under the CERP and the Regulatory program. As such, this EIS includes numerous discussions of compliance with CERP requirements. While not critical to the Department of the Army permit decision, this information provides more context than a typical EIS and also details about USACE planning policy.

The C-111 Spreader Canal Western Project is essential to achieving restoration of Taylor Slough and downstream areas within the affected areas in the Everglades National Park, the Model Land and the Southern Glades area, and plays an integral role in meeting the CERP system-wide ecosystem restoration goals and objectives. Structural and operational changes will be implemented to improve the quantity, timing, and distribution of water delivered to Florida Bay via Taylor Slough, as well as improve hydroperiods within the wetlands of the Southern Glades and Model Land. Hydroperiods and hydropatterns within the wetlands of the Southern Glades and Model Land will be improved by the construction of a new operable water control structure in the lower C-111 Canal, incremental operational changes at existing structure S-18C, changes in operations at the existing S-20 structure, construction of a plug at existing structure S-20A, and the installation of ten earthen plugs in the C-110 Canal. As a result of the construction and operation of the C-111 Spreader Canal Western project, approximately 200.73 acres (in total) of wetlands and waters of the United States would be permanently impacted and 39.98 acres (in total) of wetlands and waters of the United States would be temporarily impacted as a result of the placement of fill material, excavation, and/or flooding. In addition, approximately 149.26 acres of atypical wetlands (agricultural) would be impacted by excavation, then inundated with water. The SFWMD would need to obtain a U.S. Department of the Army permit from the USACE pursuant to Section 404 of the Clean Water Act. This final Environmental Impact Statement evaluates the environmental effects of seven alternatives, including the



**PROOF OF PUBLICATION**

STATE OF CALIFORNIA )

)ss.

County of Sacramento )

I am a citizen of the United States and a resident of the Country aforesaid. I am over the age of eighteen years and not a party to or interested in the above entitled matter. I am the principal clerk of the printer of THE GRAPEVINE INDEPENDENT, a newspaper of general circulation published in the County of Sacramento, and which newspaper has been adjudicated a newspaper of general circulation by the Superior Court of the County of Sacramento, State of California, under date of September 18, 1969, Case Number 195380 that the notice, of which the annexed is a printer copy (set in type not smaller than nonpareil) has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

July 24, 2009

**I certify (or declare) under penalty of perjury that the foregoing is true and correct.**

**SIGNATURE**



Date

July 24, 2009

**THE GRAPEVINE INDEPENDENT**

3338 Mather Field Rd., Rancho Cordova, CA 95670

**Notice of Public Meetings  
July 30, 2009  
Sunridge Specific Plan Projects EIS**

The U.S. Army Corps of Engineers, Sacramento District (Corps) invites interested individuals to attend a public scoping meeting for the preparation of an Environmental Impact Statement (EIS) for six projects in the Sunridge Specific Plan Area, in the City of Rancho Cordova. The EIS will address five projects permitted by the Corps between 2005 and 2007 and one project with a permit decision pending. Collectively the projects would involve the filling of approximately 29.7 acres of waters of the United States, including wetlands.

Two public scoping meetings for the EIS will be held on July 30, 2009. The first meeting will be held 5:00 pm to 6:00 pm and the second 7:00 pm to 8:00 pm. Both meetings will be held at the Rancho Cordova City Hall, American River Room - South, 2729 Prospect Park Drive, Rancho Cordova, CA 95670

Interested parties may register for the Corps' public notices and email notifications at:

<http://www.spk.usace.army.mil/organizations/cespk-col/regulatory/pnlist.html>.

Written comments on the scope of the EIS should be submitted to Michael Jewell, U.S. Army Corps of Engineers, Sacramento District, 1325 J Street, Room 1480 Sacramento, CA 95814-2922

**The Deadline for Providing Comments on the EIS Scope is  
August 31, 2009**

Published in the *Grapevine Independent* on July 24, 2009.







# LEGALIS

[illegible]

NOTICE OF TRUSTEE'S SALE IS NO. 00037333 TITLE ORDER NO. 09-3-15838 INVESTOR/INSURER NO. 0437313870303 IN SAN NO. 076-0143-005-0000 YOU ARE IN DEFAULT UNDER A DEED OF TRUST, DATED 10/10/2005, UNLESS YOU TAKE ACTION TO PROTECT YOUR PROPERTY, IT MAY BE SOLD AT A PUBLIC SALE. IF YOU NEED AN EXPLANATION OF THE NATURE OF THE PROCEEDING AGAINST YOU, YOU SHOULD CONTACT A LAWYER. Notice is hereby given that a RECONSTRUCTED COMPANY, N.A., as duly appointed trustee pursuant to the DEED OF TRUST EXECUTED BY PETER HISEB AND TRACEY SMER-SOZA HISEB AND LORA M. KLESPRESS HUSB AND AND WIFE, dated 10/10/2005 and 10/14/2005, as instrument No. 00052091, of Official Records in the office of the County of Sacramento, County, State of California, WILL SELL ON 06/13/2009 AT 9:30AM. AT THE EAST MAIN ENTRANCE TO THE COUNTY COURTHOUSE, 720 9TH STREET, SACRAMENTO, CA 95814 at public auction, to the highest bidder for cash or check as described in the above referenced Deed of Trust, payable in full at time of sale, all right, title, and interest conveyed to and now held by said County and State and as more fully described in the above referenced Deed of Trust. The street address and other common designation, if any, of the real property described above is purported to be: 2628 LAS CASAS WAY, FRANCISCO CORDOVA, CA 95670. The undersigned Trustee disclaims any liability for any incorrectness of the street address and other common designation, if any, shown herein. The amount of the unpaid balance with interest thereon of the obligation secured by the property to be sold plus reasonable estimated costs, expenses and advances at the time of the

published in the *Grapevine Independent* on July 24, 2005, and August 7, 2005.

**NOTICE OF TRUSTEE'S SALE** TRUSTEES' SALE # CA0937887-3-3 LOAN# 100708504 ORDER # 0901929292 YOU ARE IN DEFAULT UNDER ABEED OF TRUST DATED 01/25/2006, UNLESS YOU TAKE ACTION TO PROTECT YOUR PROPERTY, IT MAY BE SOLD AT A PUBLIC SALE. IT YOUR NEED AN EXPLANATION OF THE NATURE OF THE PROCEEDINGS AGAINST YOU, YOU SHOULD CONTACT A LAWYER. ON 08/15/2009 AT 09:30AM, MTC-PHILADELPHIA, INC. d/b/a TRUSTEE CORP. as the individually appointed Substituted Trustee under said deed of Trust Recorded on 02/02/2006 pursuant to Deed of Trust Recorded on 02/02/2006 in Book 200606202 Page 1296 of official records in the Office of the Recorder of Sacramento County, CALIFORNIA, EXECUTED BY, ROBERT RYDER, AN UNMARIED, SINGLE man, as Trustor, NONEONE, AN, BENEFICIARY, WILL SELL AT PUBLIC AUCTION TO THE HIGHEST BIDDER FOR CASH TO PAYABLE at all times in lawful money of the United States, by cash a cashier's check drawn by a state or national bank, a check drawn by a state or national bank, a check drawn by a state or federal credit union, or a check drawn by a state or federal savings and loan association, savings association, or savings bank specified in section 5102 of the Financial Code authorized to do business in this state) AT THE EAST MAIN ENTRANCE TO THE COUNTY COURTHOUSE, 720 9TH STREET, SACRAMENTO, CA 95804. The property herebefore described is being sold "as is AND ALL RIGHTS, title, and interest conveyed to and held by it under said Deed of Trust in the property held by the land shown: APN # 056-0422-001-000000 LOT 1, AS SHOWN ON THE THE OFFICIAL RECORDS OF THE MILLS RANCH UNIT NO. 1, "RECORDED IN THE OFFICE COUNTY RECORDER OF SACRAMENTO COUNTY, ON MAY 28, 1980 IN BOOK 140 OF MAPS, MAP NO. 22. The street address and other common designation, if any, of the real property described above is purported to be: 2340 MILLS RANCH WAY, RANCHO CORDOVA, 95670. The undersigned Trustee disclaims any liability for any incorrectness of the street address and other common designation. If any doubt herein, Said Sale will be made, but without covenant or warranty, expressed or implied, regarding the title, possession, or encumbrances, it paying the remaining principal sum of the Note(s) secured by said Deed of Trust, with interest(s) accrued, as provided in said Note(s), advances thereon, as provided in said Note(s), and the estimated fees, charges and expenses of the Deed of Trust, under the terms of the Deed of Trust, The total amount of the unpaid balance of the obligation secured by the property to be sold and reasonable estimated costs, expenses and advances at the time of the initial publication of the Notice of Trustee's Sale is: \$241,267.81 (estimated amount). Accrued interest and additional advances, if any, will increase this figure prior to sale. If the Trustee is unable to convey title for any reason, the successful bidder's sole and exclusive remedy shall be the return of monies paid to the Trustee under the successful bidder shall have no further recourse. The Beneficiary, under said Deed of Trust heretofore executed and delivered to the undersigned a written Declaration of Default and Demand for Sale, and a written Note(s)

**Detailed Notice of Sale:** The undersigned trustee, Deceased said Election to Default, and Election to Sell to be recorded in the County where the real property is located and more than three months before having elapsed since such recordation. Compliance with California Civil Code Section 2923.52 have been met. The Beneficiary or Beneficiary's agent/s has indicated that the requirements of California Civil Code Section 2923.52 have been met. DECLARATION PURSUANT TO CAL. CIVIL CODE SECTION 2923.5(b) The undersigned mortgagee, beneficiary or authorized agent/authorized declares under penalty of perjury, under the laws of the State of California, as follows: The mortgagee, beneficiary or authorized agent has tried with due diligence to contact the borrower to discuss the borrower's financial situation and to explore options for the borrower to avoid foreclosure as required by the Civil Code Section 2923.5. Thirty days or more have elapsed since these due diligence efforts were completed. Date: 3/20/2009 Compliance with California Civil Code Section 2923.54 have been met. Pursuant to California Civil Code Section 2923.54 the undersigned, on behalf of the beneficiary, loan servicer or authorized agent, declares as follows: X Service does hereby state that a final or temporary order of exemption pursuant to Section 2923.53 that is current and valid on the date of the notice of sale is filed 2. Timeframe for giving notice of sale specified in subdivision (a) Section 2923.52 is \_\_\_\_\_ Does X Does not apply (a) pursuant to Section 2923.52 or 2923.55 does not apply (b) pursuant to Section 2923.52 or 2923.55 DOES NOT APPLY TO THIS TRANSACTION. DATED: 07/24/2009 MTC FINANCIAL DBA: TRUSTEES CORP, AS SUCCESSOR TRUSTEE FOR: JOSEF VALLERIA, TRUSTEES SALES OF: FICER \*TRUSTEE CORPS \*212 BUSINESS CENTER DRIVE, 2ND FLOOR, IRVINE, CA 92612 FOR SALE INFORMATION CONTACT: (714) 714-30-2727; (714) 724-5000 (949) 282-8300 FOR REINSTATEMENT/PAY OFF REQUESTS CONTACT: (949) 252-8300/252-8300/252-8300 FAX: (949) 252-8300/252-8300

**NOTICE OF TRUSTEE'S SALE** TRUSTEE'S SALE # **CA0939197-2** LOAN# **17200306332** ORDER # **200707042** YOU ARE IN DEFAULT UNDER A DEED OF TRUST DATED 04/16/2007. UNLESS YOU TAKE ACTION TO PROTECT YOUR PROPERTY, IT MAY BE SOLD AT A PUBLIC SALE. IF YOU NEED AN EXPLANATION OF THE NATURE OF THE PROCEEDINGS AGAINST YOU, YOU SHOULD CONTACT A LAWYER AT **YOU SHOULD CONTACT A LAWYER AT 08/13/2009 AT 09:30 AM, MTC FINANCIAL, INC., A TRUSTEE CORP.** as the duly appointed Substituted Trustee under and pursuant to Decree of Trust Recorded on 04/24/2007 as BOOK 007070422 PAGE 1163 of official records in the Office of the Recorder of Sacramento County, CALIFORNIA, EXECUTED BY **JOHN M. HROMAN, UNNARRIED** as Trustor. **JPMORGAN CHASE BANK, N.A.** as Beneficiary, WILL SELL AT PUBLIC AUCTION TO THE HIGHEST BIDDER FOR CASH (payable at time of sale in lawful money of the United States) by cash a cashier's check drawn by a state or national bank, a check drawn by a state or federal credit union, or a check drawn by a state or federal savings and loan association, or savings association, or savings bank specified in section 5102 of the Financial Code and authorized to do business in this state, AT THE EAST MAIN ENTRANCE TO THE

**STREET, SACRAMENTO, CA.** The property heretofore described is being sold "as is," right, title and interest conveyed to and not warranted or guaranteed by the Seller, and held by it under said Deed of Trust in the property situated in said County and State described in the land therein: **APN# 067-0285-030**, ALTHAT PORTION OF LOTS 1394 AND 1395 OF RANCHO CORDOVA UNIT NO. 14, ACCORDING TO THE OFFICIAL PLAT THEREOF, FILED IN THE OFFICE OF THE RECORDER OF SACRAMENTO COUNTY, CALIFORNIA, IN BOOK 62 OF MAPS, MAP NO. 20, DESCRIBED AS FOLLOWS: BEGINNING AT A POINT LOCATED ON THE SOUTHWESTERLY BOUNDARY OF TH LOT 1394, FORM WHICH THE MOST SOUTHERLY CORNER OF SAID LOT 1395 BEARS SOUTH 28° 42' 20" EAST 14.8 FEET; THENCE FROM SAID POINT OF BEGINNING ALONG THE SOUTHWESTERLY BOUNDARY OF SAID LOTS 1394 AND 1395, NORTHWESTERLY, CURVING THROUGH AN ARC OF 52.00 FEET RADIUS, SAID ARC BEING SUBTENDED BY A CHORD BEARING NORTH 33° 45' 40" WEST 77.84 FEET; THENCE NORTH 52° 00' EAST 105.21 FEET TO A POINT LOCATED ON THE NORTHEASTERLY BOUNDARY OF SAID LOT 1395; THENCE ALONG THE NORTHEASTERLY BOUNDARY OF SAID LOTS 1395 AND 1394, SOUTH 36° 58' 20" EAST 43.87 FEET; THENCE ALONG THE NORTHEASTERLY BOUNDARY OF SAID LOT 1394, SOUTH 29° 26' 30" EAST 45.6 FEET; THENCE SOUTH 60° 28' 25" WEST 104.44 FEET TO THE POINT OF BEGINNING. The street address and other common designation, if any, of the real property described above is purported to be: **2430 NIGRADA WAY, RANCHO CORDOVA, CA 95670**. The undersigned Trustee disclaims any liability for any inaccuracy of the street address and other common designation, if any, shown herein. Said sale will be made, but without covenant or warranty, expressed or implied, regarding title, possession, or encumbrances, to pay the remaining principal sum of the Note(s) secured by said Deed of Trust, with interest thereon, as provided in said Note(s), advances thereon, estimated fees, charges and expenses of the Trust, and the terms of the Deed of Trust. Trustee and of the trusts created by said Deed of Trust. The total amount of the unpaid balance of the obligation secured by the property to be sold and reasonable estimated costs, expenses and advances at the time of the initial

PUBLICATION OF THE NOTICE OF DEBARTH AND/OR A NOTICE OF SALE UNDER A DEED OF TRUST IN WHICH THE UNDERSIGNED HAS AN INTEREST KNOWINGLY VIOLATES THE TRUTH AND ACCURACY OF THE STATEMENTS CONTAINED HEREIN BY COMMENCING AND HANDLING SUCH DISCREPANCY AND HANDLING SUCH DISCREPANCY ACTION UP TO AND INCLUDING:

Sale Price: \$266,045.00 (estimated amount). Any will increase this figure prior to sale. If the Trustee is unable to convey title for any reason, the successful bidder's sole and exclusive remedy shall be the return of monies paid by the Trustee and the successful bidder shall have no further recourse. The Beneficiary under said Deed of Trust heretofore executed and delivered to the undersigned a written Declaration of Default and Demand for Sale, and a written Notice of Default and Election to Sell. The undersigned caused said Notice of Default and Election to Sell to be recorded in the County where the real property is located and more than three months has elapsed since such recording. Compliance with California Civil Code Section 2923.52. The Beneficiary or Beneficiaries' agent has indicated that the requirements of California Civil Code Section 2923.52 have been met. DECLARATION PER CALIFORNIA CIVIL CODE SECTION 2923.52 THE UNDERSIGNED OFFICER OR CLERK/DONOR OF THE RECORDS FOR CHASE HOME FINANCE LLC ("SERVICER") DOES HEREBY DECLARE AS FOLLOWS: THAT SERVICER IS THE BENEFICIARY OR ACTING AS AGENT OF THE BENEFICIARY WHO IS A PARTY TO A DEED OF TRUST SECURING CERTAIN REAL PROPERTY COMMONLY KNOWN AS 2439 NEGRITA WAY, RANCHO CONCHO, CA 95670 AND LOCATED IN SACRAMENTO COUNTY; SAID DEED OF TRUST SECURES A LOAN MADE TO HOMEN, JOHN, (BORROWER), A SERVICER DOES HEREBY STATE THAT SERVICER HAS CONTACTED THE BORROWER TO (1) ASSESS THE BORROWER'S FINANCIAL SITUATION (2) EXPLORE OPTIONS WITH THE BORROWER TO AVOID FORECLOSURE SUCH AS REPAYMENT PLANS, FOREARRENT AGREEMENTS AND/OR LOAN MODIFICATIONS, (3) INFORM BORROWER OF BORROWER'S RIGHTS TO A SUBSEQUENT MEETING TO BE SCHEDULED WITHIN 14 DAYS OF SAID CONTACT, AND (4) PROVIDE BORROWER WITH A TOLL FREE NUMBER TO A HUD CERTIFIED COUNSELING AGENCY. THIS DECLARATION WAS MADE FOR THE PURPOSE OF NOTIFYING MTC FINANCIAL INC. DBA TRUSTEE CORP. TO PROCEED WITH THE FILING OF A NOTICE OF DEFAULT AND/OR A NOTICE OF SALE UNDER A DEED OF TRUST IN WHICH THE UNDERSIGNED HAS AN INTEREST KNOWINGLY VIOLATES THE TRUTH AND ACCURACY OF THE STATEMENTS CONTAINED HEREIN BY COMMENCING AND HANDLING SUCH DISCREPANCY AND HANDLING SUCH DISCREPANCY ACTION UP TO AND INCLUDING:

CLOSING FILING THE NOTICE OF SALE UNDER THEORETICALLY I DECLARE UNDER PENALTY OF PERJURY THAT THE STATE OF CALIFORNIA THAT TO THE BEST OF MY KNOWLEDGE THE FOREGOING STATEMENTS ARE TRUE AND CORRECT DATE: 4/20/09 Compliance with California Civil Code Section 2923.4; Pursuant to California Civil Code Section 2923.4, the undersigned, on behalf of the beneficiary, [loan servicer] or authorized agent, declares as follows: X. Servicer does hereby state that Service has obtained from the commissioner a final or temporary order of exemption pursuant to Section 2923.53 that is current and valid on the date of the notice of sale is filed. 2. Timeframe for giving notice of sale specified in subdivision (a) Section 2923.52 is \_\_\_\_\_ Does X Does not apply Pursuant to section 2923.52 or 2923.53 Dated: 07/24/2009 MFC FINANCIAL INC DBA TRUSTEES (as Successor Trustee by ERIN AGUILAR, TRUSTEE SISTER OFFICER \*TRUSTEE CORPS\* 2112 BUSINESS CENTER DRIVE, 2ND FLOOR IRVINE, CA 92612 FOR SALE INFORMATION CONTACT: (714)730-2722 (714) 724-7500 (949) 252-8300 FOR RENEWAL STATEMENT / PAY OFF REQUESTS CONTACT: (949) 252-8300 ASAF# 3192499 Published in the *Grapevine Independent* on July 24, 31 and August 7, 2009.

recorded 01/26/06, as instrument No. 1, in Book 20060126, Page 1295, of Official Records the office of the County Recorder of Sacramento County, State of California, WILL BE ON 08/15/2009 AT 9:30AM. AT THE EAST MAIN ENTRANCE TO THE COUNTY COURTHOUSE, 720 9TH STREET, SACRAMENTO, CA 95834 at public auction, the highest bidder for cash or check as described below, payable in full at time of sale, all right, title, and interest conveyed to and now held by it under said Deed of Trust, in the property situated in said County and State and as more fully described in the above referenced Deed of Trust. The street address and other common designation, if any, of the real property described above is purported to be: 11845 DEL VAIN CIRCLE, RANCHO CORDOVA, CA, 95742. The undersigned Trustee disclaims any liability for any inaccuracy of the street address and other common designation, if any, shown herein. The total amount of the unpaid balance with interest thereon of the obligation secured by this property to be sold plus reasonable estimated costs, expenses and advances at the time of its initial publication of the NOTICE OF SALE IS \$604,325.41. It is possible that at the time of sale the opening bid may be less than the total indebtedness due. In addition to cash, the Trustee will accept cashier's checks drawn on a state or national bank, a check drawn by state or federal credit union, or a check drawn by a state or federal savings and loan association, savings association, or savings bank specified in Section 5102 of the Financial Code authorized to do business in this state. Said sale will be made, in an "AS IS" condition, but without covenant or warranty, express or implied regarding title, possession or encumbrances, satisfy the indebtedness secured by said Deed of Trust, advances thereunder, with interest of 12% per annum, and the unpaid principal of the Note secured by said Deed of Trust with interest thereon as provided in said Note, plus fees and charges and expenses of the Trustee and of the trust created by said Deed of Trust. DATE: 07/16/2009 RECORDED IN COMPANY, N.A. 1800 Ipan Canyon Rd., CA 91610 291.5IN VALLEY, CA 91603 Phone: (818) 281-8211. Sale Information: (626) 927-4399 B9. Trustee's Sale Office RECORDED IN COMPANY, N.A. is a debt collector attempting to collect a debt. Any information obtained will be used for that purpose. ASAP 3/19/1594. Published in the *Grapevine Independent* on July 2, 2009.

NOTICE OF TRUSTEE'S SALE TRUSTEE SALE NO.: 20060314004258 TITLE OR ORDER NO.: 20062836 FHM/VAP/MNO. YOU ARE IN DEFAULT UNDER A DEED OF TRUST DATED 04/19/2006. UNLESS YOU TAKE ACTION TO PROTECT YOUR PROPERTY, IT MAY BE SOLD AT A PUBLIC SALE. IF YOU NEED AN EXPLANATION OF THE NATURE OF THE PROCEEDING AGAINST YOU, YOU SHOULD CONTACT A LAWYER. NDEX WEST, LLC, as duly appointed Trustee under and pursuant to Deed of Trust recorded on 04/21/2006 as Book N: 200604021 and Page No. 03583 of official record in the office of the County Recorder of SACRAMENTO County, State of CALIFORNIA, EXECUTED BY: MOHAMED UMREH WILL SELL AT PUBLIC AUCTION THE HIGHEST BIDDER FOR CASH, CASHIER CHECK/CASH EQUIVALENT, OR other form of payment authorized by 2924(b)(6), (grayable) at time of sale in lawful money of the United States) DATE OF SALE: 08/13/2009 TIME OF SALE: 9:30 AM PLACE OF SALE: A THE EAST MAIN ENTRANCE TO THE COUNTY COURTHOUSE, 720 9TH STREET, SACRAMENTO, CA. STREET ADDRESS and other common designation, any, of the real property described is purported to be: 17115 KOUROS WAY, RANCHO CORDOVA, CALIFORNIA 95742 ATTN: 067-0564-064-0000. The undersigned Trustee disclaims any liability for an inaccuracy of the street address and other common designation, if any, shown hereinafter. Said sale will be made, but without regard to warranty, expressed or implied, regarding title, possession, or encumbrances, to pay the remaining principal sum of the note(s) secured by said Deed of Trust, with interest thereon, as provided in said note(s), advances, under the terms of said Deed of Trust, fees, charges and expenses of the Trustee and of the trusts created by said Deed of Trust. The total amount to be paid by said Deed of Trust, the obligation secured by the unpaid balance of the obligation recorded by the property to be sold and reasonably estimated costs, expenses and advances, all the terms of the Deed of Trust, and the terms of the initial promissory note of the Deed of Trust, is \$313,791.92. The beneficiary under said Deed of Trust heretofore executed and delivered to the undersigned a written Declaration of Default and Demand for Sale, and a written Notice of Default and Election to Sell. The undersigned caused said Notice of Default and Election to Sell to be recorded in the County where the real property is located, FOR THE TRUSTEE SALE INFORMATION PLEASE CALL: AGENCY SALES & POSTING 321 E CALMADO REAL, SUITE 200 IRVINE, CA 92607 714-730-2127 www.dpsap.com/ND060314004258. NDEX WEST, LLC, MAY BE ACTING AS A DEBT COLLECTOR ATTEMPTING TO COLLECT

**NOTICE OF TRUSTEE'S SALES** NO. 09-8150457 TITLE ORDER NO. 09-8150457 INVESTOR/INSURER NO. 17037505 APN NO. 066-024-012-0004 YOU ARE IN DEFAULT UNDER A DEED OF TRUST DATED 04/06/2007. UNLESS YOU TAKE ACTION TO PROTECT YOUR PROPERTY IT MAY BE SOLD AT A PUBLIC SALE. IF YOU NEED AN EXPLANATION OF THE NATURE OF THE PROCEEDING AGAINST YOU, YOU SHOULD CONTACT A LAWYER. Notice is hereby given that deocontrust company, N.A., as duly appointed trustee pursuant to the **DEED OF TRUST EXECUTED BY GREG L. WISEMAN, A MARRIED MAN, AS HIS SOLE AND SEPARATE PROPERTY**, dated 04/06/2007 and recorded 04/10/07, as instrument 0620407 and recorded 04/10/07, of OFFICIAL RECORDS in Book 20070410 Page 1440, of OFFICIAL RECORDS in the office of the County Recorder of Sacramento County, State of California will be used FOR THAT PURPOSE.

NDEX, West, LLC, as Authorized Agent/Dated 07/20/2009 NDEX, West, LLC, 15000 Sun Valley Boulevard, Suite 500 Addison, Texas 75001-9013 Telephone: (866) 795-1851 Telecopier: (972) 661-7800 FAX/APR 31 1991 Published in the *Grapvine Independent* on July 24, 31 and August 7, 2009.

total amount of the unpaid balance with interest thereon of the obligation secured by the property to be sold plus reasonable attorney's fees, expenses and advances at the time of the sale.

**NOTICE OF SALE**

It is possible that at the time the sale the opening bid may be less than the total indebtedness due. In addition to cash, a Trustee will accept cashier's checks drawn on a state or national bank, a check drawn by a state or federal credit union, or a check drawn on a state or federal savings and loan association, savings association, or savings bank specified in Section 5102 of the Financial Code authorized to do business in this state. Said sale will be made, in an "AS IS" condition, without covenant or warranty, express or implied, regarding title, possession or encumbrances, to satisfy the indebtedness secured said Deed of Trust, advances thereunder, w interest as provided, and the unpaid principal of the Note secured by said Deed of Trust w interest thereon as provided in said Note, pfees, charges and expenses of the Trustee a of the trusts created by said Deed of Trust DATED: 07/24/2009 RECONTRUST COMPANY, N.A. 1800 Tapo Canyon Rd., CA# 91 81.94 SIMM Valley, CA, 91066 (Phone: 908 281 8219, Sale Information (626) 927-4399 B "Trustee's Sale Office RECONTRUST CO. PANYN, N.A. is a debt collector attempting collect a debt. Any information obtained be used for that purpose. AS/AF# 31191995 Pl filed in the *Grainville Independent* on July 31 and August 7, 2009.

NOTICE OF TRUSTEE'S SALES TO NO. 0-0009398 TITLE ORDER NO. 09-825739 INVESTOR/INSURER NO. 10-02-8379 APN NO. 067-4466-057-0000 YOU ARE DEFAULT UNDER A DEED OF TRUST DATED 11/06/2006. UNLESS YOU TAKE ACTION TO PROTECT YOUR PROPERTY, IT MAY BE SOLD AT A PUBLIC SALE. YOU NEED AN EXPLANATION OF THE NATURE OF THE PROCEEDING AGAINST YOU? YOU SHOULD CONTACT A LAWYER. Notice is hereby given that RECONTRUST COMPANY, N.A., as duly appointed trustee pursuant to the DEED OF TRUST EXECUTED BY RAMOND Y AN UNMARRIED MAN AND JENNIFER Y AN UNMARRIED WOMAN, dated 11/06/2006 and recorded 11/15/06, as instrument N. 2006-115, of the County of Santa Clara, in Book 20061115, Page 03172, of Office Records in the Office of the County Recorder

of Sacramento County, State of California WILL SELL ON 06/14/2009 at 9:30AM A.M. THE EAST MAIN ENTRANCE TO THE COUNTY COURTHOUSE 720 9TH STREET SACRAMENTO CA 95834 as public auction, to the highest bidder for cash check as described below, interest in full at sale, all right, title, and interest conveyed, and now held by if under said Deed of Trust, the property situated in said County and State, and more fully described in the above referenced Deed of Trust. The street address at other common designation, if any, of the real property described above is purported to be HERS STONE HOLLOW WAY RANCH CORONA, CA 95742. The undersigned Trustee disclaims any liability for any incorrectness of the street address and other common designation, if any, shown herein. The total amount of the unpaid balance with interest thereon of the obligation secured by the property to be sold plus reasonable estimated costs, expenses and advances at the time of the initial publication of the NOTICE OF SALE \$407,846.38. It is possible that at the time said sale the opening bid may be less than the total indebtedness due. In addition to cash, if Trustee will accept cashier's checks drawn by a state or national bank, a check drawn by a state or federal credit union, or a check drawn by a state or federal savings and loan association, or a check drawn by a state or federal savings and loan association, or savings association, or savings bank specified in Section 5102 of the Financial Code authorized to do business in this state, said sale will be made, in an "AS IS" condition, but without covenant or warranty, express or implied, regarding title, possession or encumbrances, to satisfy the indebtedness secured by said Deed of Trust; advances thereunder, with interests as provided, and the unpaid principal of the Note secured by said Deed of Trust will be paid.

The following information was obtained from the records of the Recorder of the County of Stanislaus, California, and is being published for informational purposes only. This information does not constitute an offer of insurance or any other financial product. Please contact your agent for more information.

DATED: 07/24/2009 RECONTRUST COMPANY, N.A. 1800 Tapo Canyon Rd., CA-6191 NE 21ST VALLEY, CA 95957-4399 (800) 281 8219 Site Information (626) 927-4739 PANV, N.A.'s Sale Office RECONTRUST COMPANY, N.A. is a debt collector attempting to collect a debt. Any information obtained will be used for that purpose. ASNP 3192297 Published in the *Grapevine Independent* on July 23 and August 7, 2009.

NOTICE OF TRUSTEE'S SALE. TRUSTEE'S SALE # CA083771410A0N 300265-0108 OF DEDER # 090183772 YOU ARE IN DEFAULT UNDER A DEED OF TRUST DATED 05/17/2006 UNLESS YOU TAKE ACTION TO PROTECT YOUR PROPERTY, IT MAY BE SOLD AT A PUBLIC SALE. IF YOU NEED AN EXPLANATION OF THE NATURE OF THE PROCEEDINGS AGAINST YOU, YOU SHOULD CONTACT A LAWYER. ON 08/11/2009 AT 09:30 AM, MFC FINANCIAL, INC. (THE "TRUSTEE" CORP. as the duly appointed Substituted Trustee under and pursuant to Deed of Trust Recorded on 05/26/2006 in Book 200606526 Page 0241 of official records in the Office of the Recorder of Sacramento County, CALIFORNIA, EXECUTED BY DARLENE WHITTEN, AN UNMARRIED WOMAN, a Trustor, HOMECOMING FINANCIAL NETWORK, INC., as Beneficiary, WILL SELL A PUBLIC AUCTION TO THE HIGHEST BIDDER FOR CASH (payable at time of sale in full), money of the United States, by cash, cashier's check drawn by a state or national bank, a check drawn by a state or national bank, or a check drawn by a state or federal savings and loan association, savings association, or financial bank specified in section 510 of the California Code and authorized to do business in this state, AT: THE EAST MAIN ENTRANCE TO THE COUNTY COURTHOUSE, 720 9TH STREET, SACRAMENTO, CA. The property heretofore described is being sold "as is." All right, title and interest conveyed to and now held by it under said Deed of Trust in the property situated in said County of Sutter and the land therein, APN 218-013-002-0000 LOT 250, AS SHOWN ON THE "PLAT OF MISSION RANCHO UNIT

after said Deed of Trust, the and delivered to the undersigned (hereinafter "Borrower") for the purpose of securing the obligations of Defendant and Defendant's assigns under the undersigned caused said Election to Sell to be held, where the real property is located, three months have elapsed since Compliance with California Section 2923.52. The Beneficiary's agent has indicated that the requirements of California Civil Code Section 2923.52 have been met (DECI 2923.50) TO CAL. CIV. C. 2923.50(b). The undersigned hereby certifies that the penalty of perjury, under the penalty of California, as authorized agent, has been duly sworn to by the undersigned agent, borrower to discuss the best situation and to explore options to avoid foreclosure in or to comply with California Civil Code Section 2923.5, in compliance with the Borrower Date: 3/20/2009 Compliance California Code Section 2923.54, in compliance with California Civil Code 2923.54, in compliance with the undersigned agent, declares as follows: I, the undersigned, state that Serv from the commissioner a final that of exemption pursuant to that is current and valid on the date of sale is filed. 2. Time notice of sale specified in section 2923.52 or does not exist in section 2923.52 or 2923.55. I MTC FINANCIAL INC. I CORP. as Successor Trusts GUTIERREZ, INDIENES S\* TRUSTEE CORP. 2102 I TERBINE, 2ND FLOOR, I FOR SALE INFORMATION (714)-60-2727, (714) 724-8500 FOR REINSTATEMENT (QUESTIONS CONTACT: (949) 3195356. Published in the *Grain* on July 24, 31 and Aug

**NOTICE OF TRUSTEES' ASSESSMENT CA UNIT CODE 40386257 CA UNIT CODE 40386257 WESTON AP #1: 05 TRD. SERVICE COMPANY.** Trustee under the following Trust will sell at Public Auction the **HIGHEST BIDDER FORMS** which are lawful ten (10) Acres and/or the cashier's checks specified in Civil Case No. 09-04 (payable in full at the time of sale) and now held by it a Trust in the property herein **TRUSTOR: JAMES G. WESTON** Recorded June 1, 2009. — In Book 20050617 of the Official Records in the County of SACRAMENTO County, pursuant to the Notice of Defect in Title recorded at 09-04 to Sell thereunder recorded at 09-04. — In Book 0904 of the Official Records in the County of SACRAMENTO County, recorded at 09-04. **YOU ARE IN DEFAULT UN**

TRUST DATED JUNE 8, 2001. TAKE ACTION TO PROTECT ERY. IT MAY BE SOLD SALE. IF YOU NEED AN OF THE NATURE OF THE AGAINST YOU. YOU SHO A LAWYER. 2051 KE RANCHO CORDOVA, CA. KELLLOG-WAY, GOLD R

time frame for giving notice of disqualification (a) of Section 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

**PUBLIC LIEN SALE**  
Horn Road Self Storage  
9973 Horn Road  
Sacramento, CA 95827  
(916)366-6226 Fax: (916)366-6263

# HORN ROAD

INVESTOR/INSURER NO. 17223348 APN  
NO. 067-0640-032-0000 YOU ARE IN DE  
FAULT UNDER A DEED OF TRUST. DATED  
01/24/2006. UNLESS YOU TAKE ACTION  
TO PROTECT YOUR PROPERTY, IT MAY  
BE SOLD AT A PUBLIC SALE. IF YOU  
NEED AN EXPLANATION OF THE NA  
TIONAL ANTI-PREDATORY LENDING  
LAW, OR THE PROTECTION OF CONSUMERS

**STREET, SACRAMENTO, CA 95814** at public auction, to the highest bidder for cash or check as described below, payable in full at time of sale, all right, title, and interest conveyed to and now held by it under said Deed of Trust, in the property situated in said County and State and as more fully described in the above recited

dress and other common designation, if any, of the real property described above is purported to be: 5741 SAN VICENTE WAY, NORTH HIGHLANDS, CA 95660 The undersigned Trustee disclaims any liability for any incorrectness of the street address and other common designation, if any, shown herein. Said sale will be

business under the fictitious name of Bread Shed Deli at 631 N. M. Sacramento, CA 95834. FBI County Clerk File Number: 090 in *The Grapevine Independent* August 7 and 14, 2009.

**NOTICE IS HEREBY GIVEN** that the undersigned intends to sell the property of the undersigned and to force a lien imposed on said property

Personal property described below to ensure compliance with Section 21700-21716 of the

RECONTRUST COMPANY, N.A., as duly appointed trustee pursuant to the Deed of Trust

other common designation, if any, of the real property described above is purported to be 1954 BENITA DRIVE #4, RANCHO CORDOVA, CA 95770. The median owner

made, but without covenant or warranty, expressed or implied, regarding title, possession or encumbrances, to pay the remaining principal sum of the Note(s) secured by said Deed of

**FICTITIOUS BUSINESS  
NAME STATEMENT**  
Jeff M. Perkins of 11142 Uio  
P. O. Box 10000



MEETING  
UNITED STATES ARMY CORPS OF ENGINEERS  
SACRAMENTO DISTRICT

PUBLIC SCOPING MEETING  
SUNRIDGE SPECIFIC PLAN PROJECTS

RANCHO CORDOVA CITY HALL  
AMERICAN RIVER ROOM - SOUTH  
2729 PROSPECT PARK DRIVE  
RANCHO CORDOVA, CALIFORNIA

THURSDAY, JULY 30, 2009

5:00 P.M.

ORIGINAL

ORIGINAL

Reported by: Peter Petty

APPEARANCES

US Army Corps of Engineers

Lisa Clay

Hunter Merritt

John Suazo

Tyler Stalker

Contractors

John W. Ayres, Brown and Caldwell

Randy E. Marx, Brown and Caldwell

Ilana R. Cohen, Camp Dresser & McKee, Inc.

John Clerici, CirclePoint

Members of the Public

Deana Ellis, Sunridge Lot J

Judy Waegell, Resident

Cori Resha, City of Rancho Cordova

Thad Johnson, Pappas Investments

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PROCEEDINGS

5:32 p.m.

MR. CLERICI: Thank you all for coming. Could I see a show of hands of people that aren't either from the Corps of Engineers, Brown and Caldwell or CDM.

MS. ELLIS: I'm sorry, would you clarify, please. I'm tired, I got about three hours of sleep.

MR. CLERICI: I'm just wondering who here wasn't from the Corps or from the technical team that is doing the study. I'm just curious, I'm trying to get a -- real quickly, where are you all from?

MS. WAEGELL: I'm Judy Waegell and I'm just -- the projects in the area.

MR. SUAZO: You're just here, okay.

MS. RESHA: I'm Cori Resha, I'm with the City of Rancho Cordova.

MR. CLERICI: Okay.

MS. ELLIS: Deana Ellis with Lot J in the study.

MR. CLERICI: Okay.

MR. JOHNSON: Thad Johnson with Pappas.

MR. CLERICI: Okay, thank you.

My name is John Clerici and I am part of the study team, Brown and Caldwell and CDM, I'm with CirclePoint. I'm going to mention the rest of the team here and I hope I don't mess up these names.

1 We have John Ayres and Randy Marx from Brown and  
2 Caldwell, very good.

3 And let's see. Ilana Cohen from CDM, very good.

4 And then from the Corps, Tyler Stalking, John  
5 Suazo, Lisa Clay and Hunter Merritt.

6 Did I miss anybody?

7 Oh, we have the court reporter but he remains  
8 anonymous, or he prefers to do that.

9 So anyway, we do have a --

10 This meeting is a scoping meeting associated with  
11 the Sunridge projects. It's very much at the beginning of  
12 the environmental process. It's basically to get your input  
13 regarding some of the environmental impacts and whatnot.

14 Also to describe the NEPA process to you. Most of  
15 you probably already know this. But we have a very nice  
16 slide show which John has been studying and he is going to  
17 go ahead and go through it.

18 But the idea is to collect input and we do have  
19 various ways to do that. We have -- if you came over here  
20 -- please do sign in by the way so we know who is here.

21 And then also we have information. We have the  
22 notices. The notice of this meeting, also the Notice of  
23 Intent that was printed in the Federal Register.

24 There is also a comment sheet. It's really good  
25 to get comments in writing. We would prefer to get your



1 comments in writing, that would be very good, if you choose  
2 to leave a comment about the scope of the environmental  
3 process that we are embarking on here. Please put it in  
4 writing.

5 You will also have the aforementioned anonymous  
6 court reporter over there that you can go and give comments  
7 to during the course of the evening once we are done with  
8 the presentation.

9 I would ask that you -- you know, this is such a  
10 nice small crowd. If you have a question, if something  
11 comes up and you go, what's that, but a clarifying question,  
12 then I think we can probably just answer it, try to go  
13 through it. I don't think that will be a problem.

14 But if we do get into an area where maybe your  
15 question starts to sound either more like a statement or a  
16 scoping comment we may stop you and ask you to actually get  
17 that down in writing so that we make sure we go through this  
18 process. Because we want to make sure that we do it  
19 correctly to inform the process the best we can.

20 So anyway, I am going to go sit down -- I'm not  
21 too far away -- and John is going to go ahead and do the  
22 rest of the presentation, thank you.

23 MR. SUAZO: Thank you, everyone. As Mr. Clerici  
24 has stated I am John Suazo with the Corps of Engineers. I  
25 am filling in for Mike Jewell.



1           For those of you who have been along this process  
2           for awhile probably know who Mike Jewell is and you know  
3           that I am not him.

4           (Laughter.)

5           MR. SUAZO: The reason why we wanted to -- first  
6           of all, there is a reason why we are having this meeting.  
7           It's a scoping meeting, which is part of the NEPA process.  
8           Since some of you are actually with the developers you have  
9           been along for the ride long enough to know why we are here.  
10          But I'll act like you don't know and I'll present some of  
11          the information.

12          Under NEPA one of the primary tenets is to involve  
13          the public through the opportunity to partake in the scoping  
14          process. And it gives you the opportunity to either give  
15          input to the scope of the process itself or comment on the  
16          scope.

17          In this particular case the project that is at  
18          hand really involves bringing together six projects that  
19          have previously been considered by Regulatory Division for  
20          permits under development. And the six projects are listed  
21          here, Anatolia IV, Sunridge Village J, Douglas Road 103 as  
22          well as Douglas Road 98, Grantline 208 and Arista Del Sol.

23          There are also three, actually three other  
24          projects within what is considered the Sunridge Specific  
25          Plan area that have already been constructed.

1           And all of these projects have already been  
2 considered under CEQA. However, this is just the NEPA  
3 process that we will be dealing with with this effort  
4 because of the litigation that is at hand.

5           This is a regional vicinity map. The project area  
6 is actually to our east.

7           And this is a little bit more specific depiction  
8 of the project areas. There is also a larger map at the  
9 rear of the room which is even a bigger area associated with  
10 this. And there's some greater attention that I'll bring to  
11 this in a moment.

12           Why is the Corps involved? In this case the  
13 regulatory division of the Corps of Engineers regulates the  
14 discharge of fill into waters of the United States to  
15 include, I think most importantly in this particular area,  
16 are wetlands and vernal pools, which have come into question  
17 with the project area.

18           The six Specific Plan projects associated with  
19 this effort would require filling approximately 30 acres of  
20 seasonal streams and wetlands. And most importantly, many  
21 of these are considered vernal pools.

22           We are preparing an EIS. First of all because the  
23 Corps is the lead agency.

24           Second of all, because there is litigation  
25 associated with that. And probably most of the people in

1 the room are aware of that litigation. I won't go into it  
2 for a couple of reasons. Because this is the beginning of  
3 the project.

4 Secondly, because I am not a technical expert on  
5 it. My background is in civil works and I am familiar with  
6 the NEPA process and the processing and development of NEPA  
7 documents. But I am not a regulatory expert. Lisa Clay who  
8 is with our Office of Counsel has been associated with the  
9 project for a period of time and may be able to answer some  
10 questions, or Mike Jewell would have been able to. His  
11 contact information is actually in the back of the room and  
12 it is also the last slide in the presentation.

13 Associated with the reason why we are in  
14 litigation is probably the last point. Cumulative effects  
15 was a very big issue that came up with the whole area  
16 involving the Sunridge Specific Plan area.

17 In mentioning that, in considering the cumulative  
18 effects, any project within the area in the reasonable past,  
19 present or foreseeable future must be considered in the  
20 realm of cumulative effects for the Environmental Impact  
21 Statement that we are embarking on.

22 So here we are at the beginning of the scoping  
23 process. We have published the Notice of Intent in the  
24 Federal Register as well as mailing out the public notice.

25 We are having this public meeting, offering anyone



1 who is interested to give us comments or present any  
2 concerns that you have on the project.

3 The next part of the process will be the  
4 preparation of the Draft EIS, working toward the Final, and  
5 then eventually the Record of Decision.

6 The decision that the Corps will be involved in is  
7 whether the previously issued permits for five of the  
8 projects -- and I believe the only project which did not  
9 have a permit was Arista Del Sol. Is that correct?

10 And whether or not a permit would be issued for  
11 the sixth.

12 This is a very rough schedule. Going back to the  
13 previous, I'm sorry, list of activities. Here we are at the  
14 scoping meeting.

15 Approximately nine months from now we will expect  
16 to have the Draft EIS.

17 And hopefully five months later we will be at the  
18 point of finalizing the document.

19 And the Record of Decision produced in time for  
20 the court-mandated date of November of 2010.

21 Here is how you can participate.

22 You can write out your comment card, submit that.

23 You can provide your comments to the court  
24 reporter.

25 Or they can be submitted by letter or by e-mail to

1 Mr. Jewell.

2 And that's pretty short and sweet.

3 If you have any questions regarding clarification  
4 of any of the information we'll answer those questions. But  
5 if you have any other comments, perhaps regarding the scope,  
6 any of the other details regarding any of the developments  
7 or the properties associated with it, you know, we'd really  
8 like you to submit those as public comments.

9 Anything I might be able to answer for you?

10 Going once, twice, sold.

11 (Laughter.)

12 MR. CLERICI: Thank you, John, that was very good.

13 We will be around now for awhile so if you do have  
14 any questions I do invite you to look at some of the  
15 displays. We have quite a bit of information back there.

16 There's also the information materials that were  
17 over here.

18 And as I mentioned before, if you could sign in to  
19 make sure that we know who was at this meeting that would be  
20 great.

21 We will be here for another many hours actually.

22 (Laughter.)

23 MR. SUAZO: We'll be here until eight.

24 MR. CLERICI: And if you didn't get all of John's  
25 presentation we'll probably be showing it again here in

1 about an hour and a half or so.

2 So anyway, I do thank you all very much for  
3 coming.

4 And once again just to remind you, the deadline  
5 for submitting scoping comments is August 30.

6 We are going to be around. Have at it, thank you.

7 (Thereupon, the July 30, 2009, Public  
8 Scoping Meeting of the US Army Corps of  
9 Engineers was adjourned at 5:43 p.m.)

10 --oOo--  
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## CERTIFICATE OF REPORTER

I, PETER PETTY, an Electronic Reporter, do hereby certify:

That I am a disinterested person herein; that the foregoing US Army Corps of Engineers, Sacramento District, Public Scoping meeting was reported by me and thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties in this matter, nor in any way interested in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand this 12th day of August, 2009.



---

Peter Petty  
Official Reporter

# California Native Plant Society

August 31, 2009

Michael Jewell  
U.S. Army Corps of Engineers  
Sacramento District  
1325 J Street, Room 1480  
Sacramento, CA, 95814-2922  
[michael.s.jewell@usace.army.mil](mailto:michael.s.jewell@usace.army.mil)

VIA EMAIL

Subject: Sunridge Specific Plan  
Public Notice Number SPK-2009-00551

Dear Mr. Jewell,

The California Native Plant Society (CNPS) is a statewide non-profit organization of some 10,000 scientists, educators, and laypeople dedicated to the conservation and understanding of the California native flora. As a science-based conservation organization, we believe that good land use decisions must be accompanied by a thorough assessment of the environmental impacts as required by the state and federal Endangered Species Acts, the Clean Water Act, the National Environmental Policy Act, the California Environmental Quality Act, and other resource protection laws.

The Sacramento Valley Chapter of CNPS has been highly involved in participating in and commenting upon land use decisions at all levels that affect vernal pool ecosystems in Sacramento County. Chapter volunteers serve on the South Sacramento Habitat Conservation Plan steering committee and biological subcommittee. Chapter volunteers serve on a stakeholders group to determine land use planning for the former Mather Air Force Base and its vernal pool grassland ecosystem. Chapter volunteers serve on local land trust boards, steering committees, and management committees. Chapter volunteers have testified at innumerable planning commission, board of supervisors, and city council meetings on projects that impact vernal pool resources.

The Sacramento Valley Chapter of CNPS has long viewed the region that was ultimately proposed for the Sunrise-Douglas Community Planning Area as the "Yellowstone" of vernal pool landscapes in Sacramento County. Due to its extraordinary biological resources, CNPS lobbied extensively to exclude this area from future development during the last Sacramento County General Plan update. Geospatial analysis independently conducted for the developing South Sacramento Habitat Conservation Plan has confirmed that this region is unique within Sacramento County from the perspective of both density and diversity of vernal pools present, and in listed species presence. The diversity of vernal pool sizes, shapes, and hydroperiods is strongly correlated to high species diversity and a high level of ecosystem supporting function. The density of aquatic resources and listed species indicates that losses of this habitat will not easily be mitigated for elsewhere in the county.

## Proposed Project

The Sunridge Specific Plan project, as proposed in the above cited public notice, contains only six of the nine individual projects in the specific planning area. The proposed EIS must analyze the impacts of the three related projects that have already irreparably destroyed vernal pool habitats. These three projects are: Montelena (2000-00336), North Douglas 1&2 (1994-00218 and 1994-00529) and Sunridge Park (2001-00252)



*Dedicated to the preservation of California native flora*

Alternatives Analysis

CNPS requests that an alternative that is even more protective of resources than the "Conceptual-level Strategy" (or "Applicants' Preferred Projects") be analyzed in the EIS for the Sunridge Specific Plan project. Specifically, we request that the tributaries to Morrison and Laguna Creeks be fully buffered by at least 500 feet on both. Furthermore, the edges of the proposed onsite avoidance area must be smoothed in order to minimize edge effects. These changes would considerably reduce indirect effects.

Cumulative Impacts Analysis

The EIS for the Sunridge Specific Plan must consider and cross-walk with the various other EISs being prepared for other projects in and around the Sunrise-Douglas Community Plan Area (SDCPA). Within the SDCPA are "The Preserve", Sun-Creek, Heritage Falls, and The Arboretum. Nearby are Rio Del Oro, Cordova Hills, Folsom Sphere of Influence, Glenborough, Easton Place and the Kiefer Landfill.

CNPS specifically requests that the U.S. Army Corps of Engineers consider any parcel for which a wetland delineation has been received, or for which a pre-application meeting has been held, regardless of the status of the permit application, within a five mile radius of Sunridge Specific Plan project be included in the cumulative impacts analysis.

CNPS specifically requests that the U.S. Army Corps of Engineers also analyze the cumulative impacts of unregulated vernal pool losses as has been recently disclosed through a mapping project conducted by Dr. Robert F. Holland. We anticipate the final report and GIS layers for this project to be available in early November and will forward additional information at that time.

Summary

On behalf of CNPS, I appreciate the opportunity to comment on this Notice of Intent. Please keep me informed of activities related to projects in this area that might impact vernal pool grasslands and endangered species habitat.

Sincerely,

A handwritten signature in black ink, appearing to read "Carol W. Witham".

Carol W. Witham  
CNPS Vice-President  
1141 37<sup>th</sup> Street  
Sacramento CA 95816  
(916) 452-5440  
cwitham@ncal.net



Cox, Castle & Nicholson LLP  
555 California Street, 10<sup>th</sup> Floor  
San Francisco, California 94104-1513  
P 415.392.4200 F 415.392.4250

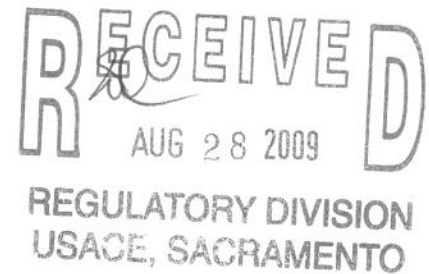
Andrew B. Sabey  
415.262.5103  
asabey@coxcastle.com

File No. 56585

August 28, 2009

**BY OVERNIGHT DELIVERY**

Michael Jewell  
U.S. Army Corps of Engineers, Sacramento District  
1325 J Street, Room 1480  
Sacramento, CA 95814-2922



Re: Comments on Notice of Intent to Prepare a Draft Environmental Impact Statement for the Sunridge Specific Plan Projects in Rancho Cordova, Sacramento County, CA, ID SPK-2009-00511

Dear Mr. Jewell:

We represent Cresleigh Homes ("Cresleigh") in connection with its Sunridge Village J Project, ID SPK-2001-00230 ("Project"), located in the Sunridge Specific Plan area in the City of Rancho Cordova, California. We have reviewed the Notice of Intent ("NOI") for the Draft Environmental Impact Statement ("DEIS") for the Sunridge Specific Plan, and have the following comments.

**1. The Description of the Project Is Misleading and Incomplete.**

As indicated in the NOI, Cresleigh is the permittee for the Project. Cresleigh received its Clean Water Act Section 404 permit ("Permit") from the U.S. Army Corps of Engineers ("Corps") on October 24, 2006. The Permit authorizes the fill of approximately 2.99 acres of waters of the United States on an 81.25-acre site. As mitigation for the impacts associated with this fill, the Permit requires the construction of at least 3.38 acres of vernal pool habitat at the Gill Ranch Mitigation Area (off-site mitigation area) as compensatory mitigation, and the purchase of 9.18 acres of vernal pool crustacean habitat at the Bryte Ranch Conservation Bank as preservation mitigation.

By stating that "the permittee would construct 3.39 acres of wetland habitat," the NOI is misleading and incomplete. Cresleigh has in fact already complied with both the compensatory and the preservation mitigation requirements under the Permit by constructing 3.38 acres of vernal pool habitat and preserving 9.18 acres of vernal pool crustacean habitat. Cresleigh therefore has satisfied these terms of the Permit. It is our understanding that many of the other projects evaluated in the DEIS have already satisfied their mitigation requirements as well. We request the Corps include this information in the DEIS and all other documents related to the Corps' environmental review process for the Sunridge Specific Plan.

Michael Jewell  
August 28, 2009  
Page 2

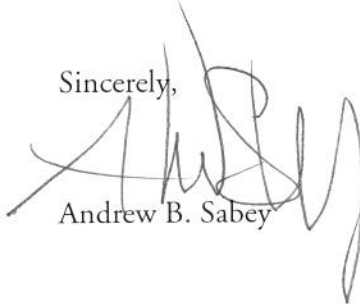
2. **The DEIS Should Specify Projects Included in the Cumulative Effects Analysis.**

Although the NOI does not refer to the analysis of cumulative effects in the DEIS, the Corps' scoping meetings for the DEIS included a presentation that indicated the Corps would analyze cumulative effects "from past, present and reasonably foreseeable actions." However, this presentation did not specify which projects would be included in that cumulative effects analysis. We request the DEIS specify those projects, including "past, present and reasonably foreseeable" projects, that will be evaluated as part of the DEIS's cumulative effects analysis.

\* \* \*

Thank you for the opportunity to comment on the NOI. We look forward to reviewing and commenting on the DEIS.

Sincerely,

A handwritten signature in black ink, appearing to read "Andrew B. Sabey", written over the printed name.

Andrew B. Sabey

56585\149306v1

cc: Deana Ellis, Cresleigh Homes



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

SEP 03 2009

Mr. Mike Jewell, Chief  
Regulatory Division  
U.S. Army Corps of Engineers  
1325 J. Street, 14<sup>th</sup> Floor  
Sacramento, CA 95814

Subject: Request for U.S. Environmental Protection Agency (EPA) Participation as a  
Cooperating Agency for the Sunridge Specific Plan area, Sacramento County,  
California; SPK-2009-00511

Dear Mr. Jewell:

The EPA received your July 2, 2009 request to participate as a cooperating agency during the National Environmental Policy Act (NEPA) Environmental Impact Statement (EIS) development process for the Sunridge Specific Plan area, City of Rancho Cordova, Sacramento County, California. We appreciate the Corps' invitation and are interested in coordinating with the Corps, but due to resource constraints, we decline the request to serve as a cooperating agency in a formal capacity for this project.

EPA considers coordination with the Corps, as well as other environmental resource agencies, a high priority. To that end we will provide review and input on the Project during the NEPA process. We are especially interested in working with the Corps on the development of alternatives screening criteria and alternatives selection, as well as environmental impact avoidance and mitigation measures prior to completion of the Draft EIS. EPA also regards Clean Water Act Section 404 (b)(1) compliance to be an important opportunity for ongoing coordination between our two agencies.

In the event any early EPA NEPA coordination takes place, please be aware that our independent responsibilities under Section 309 of the Clean Air Act, to review and comment publicly on all Draft EISs, still apply.

If you have any questions, please contact me at 415-972-3521 or Tom Kelly, the lead reviewer for this project. Tom can be reached at 415-972-3856 or [kelly.thomas@epa.gov](mailto:kelly.thomas@epa.gov).

Sincerely,

A handwritten signature in dark ink, appearing to read "Kathleen M. Goforth".

Kathleen M. Goforth, Manager  
Environmental Review Office

Cc:

Mr. Horst Greczmiel, Council on Environmental Quality



RECEIVED  
JUL 22 2009  
REGULATORY DIVISION  
USACE, SACRAMENTO

U.S. Department of Homeland Security  
FEMA Region IX  
1111 Broadway, Suite 1200  
Oakland, CA. 94607-4052



FEMA

July 21, 2009

Michael S. Jewell  
U. S. Army Corps of Engineers, Sacramento District  
1325 J Street, Room 1480  
Sacramento, California 95814-2922

Dear Mr. Jewell:

This is in response to your request for comments on Public Notice Number SPK-2009-00511 dated July 20, 2009 - Intent to Prepare a Draft Environmental Impact State for the Sunridge Specific Plan Projects, in Rancho Cordova, Sacramento County, California.

Please review the current effective countywide Sacramento County Flood Insurance Rate Maps (FIRMs) for the City of Rancho Cordova (Community Number 060772), Maps revised December 8, 2008. Please note that the City of Rancho Cordova, Sacramento County, California is a participant in the National Flood Insurance Program (NFIP). The minimum, basic NFIP floodplain management building requirements are described in Vol. 44 Code of Federal Regulations (44 CFR), Sections 59 through 65.

A summary of these NFIP floodplain management building requirements are as follows:

- All buildings constructed within a riverine floodplain, (i.e., Flood Zones A, AO, AH, AE, and A1 through A30 as delineated on the FIRM), must be elevated so that the lowest floor is at or above the Base Flood Elevation level in accordance with the effective Flood Insurance Rate Map.
- If the area of construction is located within a Regulatory Floodway as delineated on the FIRM, any **development** must not increase base flood elevation levels. **The term development means any man-made change to improved or unimproved real estate, including but not limited to buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials.** A hydrologic and hydraulic analysis must be performed prior to the start of development, and must demonstrate that the development would not cause any rise in base flood levels. No rise is permitted within regulatory floodways.

Michael S. Jewell, Project Manager

Page 2

July 21, 2009

- All buildings constructed within a coastal high hazard area, (any of the "V" Flood Zones as delineated on the FIRM), must be elevated on pilings and columns, so that the lowest horizontal structural member, (excluding the pilings and columns), is elevated to or above the base flood elevation level. In addition, the posts and pilings foundation and the structure attached thereto, is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components.
- Upon completion of any development that changes existing Special Flood Hazard Areas, the NFIP directs all participating communities to submit the appropriate hydrologic and hydraulic data to FEMA for a FIRM revision. In accordance with 44 CFR, Section 65.3, as soon as practicable, but not later than six months after such data becomes available, a community shall notify FEMA of the changes by submitting technical data for a flood map revision. To obtain copies of FEMA's Flood Map Revision Application Packages, please refer to the FEMA website at <http://www.fema.gov/business/nfip/forms.shtm>.

**Please Note:**

Many NFIP participating communities have adopted floodplain management building requirements which are more restrictive than the minimum federal standards described in 44 CFR. Please contact the local community's floodplain manager for more information on local floodplain management building requirements. The Rancho Cordova floodplain manager can be reached by calling Cyrus Abhar, Director, Department of Public Works, at (916) 851-8711. The Sacramento County floodplain manager can be reached by calling George H. Booth, Senior Civil Engineer, Department of Water Resources, at (916) 874-6851.

If you have any questions or concerns, please do not hesitate to call Cynthia McKenzie of the Mitigation staff at (510) 627-7190.

Sincerely,



Gregor Blackburn, CFM, Branch Chief  
Floodplain Management and Insurance Branch

cc:

Cyrus Abhar, Director, Department of Public Works, City of Rancho Cordova  
George H. Booth, Senior Civil Engineer, Sacramento County, Department of Water Resources  
Garret Tam Sing/Salomon Miranda, State of California, Department of Water Resources,  
Southern District

Cynthia McKenzie, Senior Floodplanner, CFM, DHS/FEMA Region IX  
Alessandro Amaglio, Environmental Officer, DHS/FEMA Region IX

## **Appendix F**

### **URBEMIS 2007 Modeling Runs**

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\DHooper\Desktop\temp at home work folder\ACE Sunridge\URBEMIS\_No Action Alternative\Sunridge GHG Emissions\_No action alternative.urb924

Project Name: Sunridge GHG emissions no action alternative

Project Location: Sacramento County AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>CO2</u>
2011 TOTALS (tons/year unmitigated)	8,203.53
2012 TOTALS (tons/year unmitigated)	8,238.25
2013 TOTALS (tons/year unmitigated)	8,241.01
2014 TOTALS (tons/year unmitigated)	8,243.44
2015 TOTALS (tons/year unmitigated)	8,245.04
2016 TOTALS (tons/year unmitigated)	8,245.31

5/10/2010 4:03:09 PM

AREA SOURCE EMISSION ESTIMATES

	<u>CO2</u>
TOTALS (tons/year, unmitigated)	9,849.70
TOTALS (tons/year, mitigated)	8,326.23
Percent Reduction	15.47

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>CO2</u>
TOTALS (tons/year, unmitigated)	28,636.75
TOTALS (tons/year, mitigated)	28,560.91
Percent Reduction	0.26

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>CO2</u>
TOTALS (tons/year, unmitigated)	38,486.45
TOTALS (tons/year, mitigated)	36,887.14
Percent Reduction	4.16

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

CO2

5/10/2010 4:03:09 PM

2011	8,203.53
Asphalt 01/01/2011-12/31/2016	211.05
Paving Off-Gas	0.00
Paving Off Road Diesel	184.45
Paving On Road Diesel	8.45
Paving Worker Trips	18.16
Building 01/01/2011-12/31/2016	6,675.17
Building Off Road Diesel	293.71
Building Vendor Trips	1,053.75
Building Worker Trips	5,327.72
Coating 01/01/2011-12/31/2016	12.06
Architectural Coating	0.00
Coating Worker Trips	12.06
Fine Grading 01/01/2011-12/31/2016	1,305.24
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,268.93
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	36.31



5/10/2010 4:03:09 PM

2012	8,238.25
Asphalt 01/01/2011-12/31/2016	211.87
Paving Off-Gas	0.00
Paving Off Road Diesel	185.16
Paving On Road Diesel	8.48
Paving Worker Trips	18.24
Building 01/01/2011-12/31/2016	6,703.98
Building Off Road Diesel	294.84
Building Vendor Trips	1,057.96
Building Worker Trips	5,351.19
Coating 01/01/2011-12/31/2016	12.11
Architectural Coating	0.00
Coating Worker Trips	12.11
Fine Grading 01/01/2011-12/31/2016	1,310.28
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,273.81
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	36.47

5/10/2010 4:03:09 PM

2013	8,241.01
Asphalt 01/01/2011-12/31/2016	211.88
Paving Off-Gas	0.00
Paving Off Road Diesel	185.16
Paving On Road Diesel	8.48
Paving Worker Trips	18.24
Building 01/01/2011-12/31/2016	6,706.71
Building Off Road Diesel	294.84
Building Vendor Trips	1,058.14
Building Worker Trips	5,353.73
Coating 01/01/2011-12/31/2016	12.12
Architectural Coating	0.00
Coating Worker Trips	12.12
Fine Grading 01/01/2011-12/31/2016	1,310.30
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,273.81
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	36.49

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2014	8,243.44
Asphalt 01/01/2011-12/31/2016	211.89
Paving Off-Gas	0.00
Paving Off Road Diesel	185.16
Paving On Road Diesel	8.48
Paving Worker Trips	18.25
Building 01/01/2011-12/31/2016	6,709.11
Building Off Road Diesel	294.84
Building Vendor Trips	1,058.34
Building Worker Trips	5,355.94
Coating 01/01/2011-12/31/2016	12.13
Architectural Coating	0.00
Coating Worker Trips	12.13
Fine Grading 01/01/2011-12/31/2016	1,310.31
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,273.81
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	36.50

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2015	8,245.04
Asphalt 01/01/2011-12/31/2016	211.89
Paving Off-Gas	0.00
Paving Off Road Diesel	185.16
Paving On Road Diesel	8.48
Paving Worker Trips	18.26
Building 01/01/2011-12/31/2016	6,710.69
Building Off Road Diesel	294.84
Building Vendor Trips	1,058.52
Building Worker Trips	5,357.33
Coating 01/01/2011-12/31/2016	12.13
Architectural Coating	0.00
Coating Worker Trips	12.13
Fine Grading 01/01/2011-12/31/2016	1,310.32
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,273.81
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	36.51

5/10/2010 4:03:09 PM

2016	8,245.31
Asphalt 01/01/2011-12/31/2016	211.90
Paving Off-Gas	0.00
Paving Off Road Diesel	185.16
Paving On Road Diesel	8.48
Paving Worker Trips	18.26
Building 01/01/2011-12/31/2016	6,710.96
Building Off Road Diesel	294.84
Building Vendor Trips	1,058.64
Building Worker Trips	5,357.48
Coating 01/01/2011-12/31/2016	12.13
Architectural Coating	0.00
Coating Worker Trips	12.13
Fine Grading 01/01/2011-12/31/2016	1,310.32
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,273.81
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	36.51

Phase Assumptions

Phase: Fine Grading 1/1/2011 - 12/31/2016 - Default Fine Site Grading Description

Total Acres Disturbed: 343.5

Maximum Daily Acreage Disturbed: 85.88

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

**5/10/2010 4:03:09 PM**

On Road Truck Travel (VMT): 0

Off-Road Equipment:

- 1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day
- 2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day
- 3 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
- 2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 1/1/2011 - 12/31/2016 - Default Paving Description

Acres to be Paved: 85.88

Off-Road Equipment:

- 1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day
- 2 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
- 2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 1/1/2011 - 12/31/2016 - Default Building Construction Description

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day
- 3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day
- 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 1/1/2011 - 12/31/2016 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250



Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>CO2</u>
Natural Gas	7,900.65
Hearth	1,935.26
Landscape	13.79
Consumer Products	
Architectural Coatings	
TOTALS (tons/year, unmitigated)	9,849.70

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

<u>Source</u>	<u>CO2</u>
Natural Gas	6,377.18
Hearth	1,935.26
Landscape	13.79
Consumer Products	
Architectural Coatings	
TOTALS (tons/year, mitigated)	8,326.23

Area Source Changes to Defaults

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	CO2
Single family housing	25,845.23
City park	52.91
General office building	2,738.61
TOTALS (tons/year, unmitigated)	28,636.75

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Mitigated

<u>Source</u>	CO2
Single family housing	25,776.37
City park	52.78
General office building	2,731.76
TOTALS (tons/year, mitigated)	28,560.91

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2011 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

<u>Summary of Land Uses</u>						
Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	303.00	8.98	dwelling units	2,060.00	18,498.80	138,468.37

<u>Summary of Land Uses</u>						
Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
City park		1.59	acres	31.50	50.09	285.66
General office building		11.01	1000 sq ft	196.00	2,157.96	14,726.49
					20,706.85	153,480.52

<u>Vehicle Fleet Mix</u>				
Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	47.6	1.1	98.7	0.2
Light Truck < 3750 lbs	10.0	2.0	92.0	6.0
Light Truck 3751-5750 lbs	22.5	0.9	98.7	0.4
Med Truck 5751-8500 lbs	10.2	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.1	0.0	76.2	23.8
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.6	0.0	18.8	81.2
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	3.5	62.9	37.1	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

	<u>Travel Conditions</u>					
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	10.8	7.3	7.3
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
City park				5.0	2.5	92.5
General office building				35.0	17.5	47.5

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\DHooper\Desktop\temp at home work folder\ACE Sunridge\URBEMIS\_proposed Project\Sunridge GHG Emissions.urb924

Project Name: Sunridge GHG emissions proposed project alternative

Project Location: Sacramento County AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>CO2</u>
2011 TOTALS (tons/year unmitigated)	12,234.31
2012 TOTALS (tons/year unmitigated)	12,286.38
2013 TOTALS (tons/year unmitigated)	12,290.74
2014 TOTALS (tons/year unmitigated)	12,294.59
2015 TOTALS (tons/year unmitigated)	12,297.12
2016 TOTALS (tons/year unmitigated)	12,297.55

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AREA SOURCE EMISSION ESTIMATES

	<u>CO2</u>
TOTALS (tons/year, unmitigated)	15,797.26
TOTALS (tons/year, mitigated)	13,387.81
Percent Reduction	15.25

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>CO2</u>
TOTALS (tons/year, unmitigated)	44,220.18
TOTALS (tons/year, mitigated)	44,094.96
Percent Reduction	0.28

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>CO2</u>
TOTALS (tons/year, unmitigated)	60,017.44
TOTALS (tons/year, mitigated)	57,482.77
Percent Reduction	4.22

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

CO2



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2011	12,234.31
Asphalt 01/01/2011-12/31/2016	215.96
Paving Off-Gas	0.00
Paving Off Road Diesel	184.45
Paving On Road Diesel	13.36
Paving Worker Trips	18.16
Building 01/01/2011-12/31/2016	10,432.21
Building Off Road Diesel	293.71
Building Vendor Trips	1,699.17
Building Worker Trips	8,439.33
Coating 01/01/2011-12/31/2016	19.43
Architectural Coating	0.00
Coating Worker Trips	19.43
Fine Grading 01/01/2011-12/31/2016	1,566.71
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,523.14
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	43.57

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2012	12,286.38
Asphalt 01/01/2011-12/31/2016	216.81
Paving Off-Gas	0.00
Paving Off Road Diesel	185.16
Paving On Road Diesel	13.41
Paving Worker Trips	18.24
Building 01/01/2011-12/31/2016	10,477.31
Building Off Road Diesel	294.84
Building Vendor Trips	1,705.96
Building Worker Trips	8,476.51
Coating 01/01/2011-12/31/2016	19.51
Architectural Coating	0.00
Coating Worker Trips	19.51
Fine Grading 01/01/2011-12/31/2016	1,572.76
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,528.99
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	43.76

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2013	12,290.74
Asphalt 01/01/2011-12/31/2016	216.81
Paving Off-Gas	0.00
Paving Off Road Diesel	185.16
Paving On Road Diesel	13.41
Paving Worker Trips	18.24
Building 01/01/2011-12/31/2016	10,481.63
Building Off Road Diesel	294.84
Building Vendor Trips	1,706.26
Building Worker Trips	8,480.53
Coating 01/01/2011-12/31/2016	19.52
Architectural Coating	0.00
Coating Worker Trips	19.52
Fine Grading 01/01/2011-12/31/2016	1,572.78
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,528.99
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	43.79

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2014	12,294.59
Asphalt 01/01/2011-12/31/2016	216.82
Paving Off-Gas	0.00
Paving Off Road Diesel	185.16
Paving On Road Diesel	13.41
Paving Worker Trips	18.25
Building 01/01/2011-12/31/2016	10,485.44
Building Off Road Diesel	294.84
Building Vendor Trips	1,706.57
Building Worker Trips	8,484.03
Coating 01/01/2011-12/31/2016	19.53
Architectural Coating	0.00
Coating Worker Trips	19.53
Fine Grading 01/01/2011-12/31/2016	1,572.80
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,528.99
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	43.80

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2015	12,297.12
Asphalt 01/01/2011-12/31/2016	216.83
Paving Off-Gas	0.00
Paving Off Road Diesel	185.16
Paving On Road Diesel	13.41
Paving Worker Trips	18.26
Building 01/01/2011-12/31/2016	10,487.95
Building Off Road Diesel	294.84
Building Vendor Trips	1,706.88
Building Worker Trips	8,486.24
Coating 01/01/2011-12/31/2016	19.54
Architectural Coating	0.00
Coating Worker Trips	19.54
Fine Grading 01/01/2011-12/31/2016	1,572.81
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,528.99
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	43.82

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2016	12,297.55
Asphalt 01/01/2011-12/31/2016	216.83
Paving Off-Gas	0.00
Paving Off Road Diesel	185.16
Paving On Road Diesel	13.41
Paving Worker Trips	18.26
Building 01/01/2011-12/31/2016	10,488.38
Building Off Road Diesel	294.84
Building Vendor Trips	1,707.07
Building Worker Trips	8,486.48
Coating 01/01/2011-12/31/2016	19.54
Architectural Coating	0.00
Coating Worker Trips	19.54
Fine Grading 01/01/2011-12/31/2016	1,572.81
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,528.99
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	43.82

Phase Assumptions

Phase: Fine Grading 1/1/2011 - 12/31/2016 - Default Fine Site Grading Description

Total Acres Disturbed: 543.21

Maximum Daily Acreage Disturbed: 135.8

Fugitive Dust Level of Detail: Default

20 lbs per acre-day



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On Road Truck Travel (VMT): 0

Off-Road Equipment:

- 2 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day
- 1 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day
- 2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day
- 4 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 1/1/2011 - 12/31/2016 - Default Paving Description

Acres to be Paved: 135.8

Off-Road Equipment:

- 1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day
- 2 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
- 2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 1/1/2011 - 12/31/2016 - Default Building Construction Description

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day
- 3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day
- 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 1/1/2011 - 12/31/2016 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>CO2</u>
Natural Gas	12,715.02
Hearth	3,060.72
Landscape	21.52
Consumer Products	
Architectural Coatings	
TOTALS (tons/year, unmitigated)	15,797.26

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

<u>Source</u>	<u>CO2</u>
Natural Gas	10,305.57
Hearth	3,060.72
Landscape	21.52
Consumer Products	
Architectural Coatings	
TOTALS (tons/year, mitigated)	13,387.81

Area Source Changes to Defaults

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	CO2
Single family housing	37,689.31
City park	75.58
General office building	6,455.29
TOTALS (tons/year, unmitigated)	44,220.18

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Mitigated

<u>Source</u>	CO2
Single family housing	37,580.41
City park	75.40
General office building	6,439.15
TOTALS (tons/year, mitigated)	44,094.96

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2011 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

<u>Summary of Land Uses</u>						
Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	477.00	8.28	dwelling units	3,258.00	26,976.24	201,924.23

<u>Summary of Land Uses</u>						
Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
City park		1.59	acres	45.00	71.55	408.08
General office building		11.01	1000 sq ft	462.00	5,086.62	34,712.43
					32,134.41	237,044.74

<u>Vehicle Fleet Mix</u>				
Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	47.6	1.1	98.7	0.2
Light Truck < 3750 lbs	10.0	2.0	92.0	6.0
Light Truck 3751-5750 lbs	22.5	0.9	98.7	0.4
Med Truck 5751-8500 lbs	10.2	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.1	0.0	76.2	23.8
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.6	0.0	18.8	81.2
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	3.5	62.9	37.1	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

	<u>Travel Conditions</u>					
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	10.8	7.3	7.3
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
City park				5.0	2.5	92.5
General office building				35.0	17.5	47.5

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\DHooper\Desktop\temp at home work folder\ACE Sunridge\URBEMIS\_Reduced Footprint Alternative\Sunridge GHG Emissions\_Reduced Footprint Alternative.urb924

Project Name: Sunridge GHG emissions reduced footprint alternative

Project Location: Sacramento County AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>CO2</u>
2011 TOTALS (tons/year unmitigated)	10,300.89
2012 TOTALS (tons/year unmitigated)	10,344.60
2013 TOTALS (tons/year unmitigated)	10,348.14
2014 TOTALS (tons/year unmitigated)	10,351.28
2015 TOTALS (tons/year unmitigated)	10,353.33
2016 TOTALS (tons/year unmitigated)	10,353.68



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AREA SOURCE EMISSION ESTIMATES

	<u>CO2</u>
TOTALS (tons/year, unmitigated)	12,328.45
TOTALS (tons/year, mitigated)	10,471.45
Percent Reduction	15.06

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>CO2</u>
TOTALS (tons/year, unmitigated)	37,087.23
TOTALS (tons/year, mitigated)	36,986.98
Percent Reduction	0.27

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>CO2</u>
TOTALS (tons/year, unmitigated)	49,415.68
TOTALS (tons/year, mitigated)	47,458.43
Percent Reduction	3.96

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

CO2

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2011	10,300.89
Asphalt 01/01/2011-12/31/2016	215.96
Paving Off-Gas	0.00
Paving Off Road Diesel	184.45
Paving On Road Diesel	13.36
Paving Worker Trips	18.16
Building 01/01/2011-12/31/2016	8,502.99
Building Off Road Diesel	293.71
Building Vendor Trips	1,332.31
Building Worker Trips	6,876.98
Coating 01/01/2011-12/31/2016	15.22
Architectural Coating	0.00
Coating Worker Trips	15.22
Fine Grading 01/01/2011-12/31/2016	1,566.71
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,523.14
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	43.57

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2012	10,344.60
Asphalt 01/01/2011-12/31/2016	216.81
Paving Off-Gas	0.00
Paving Off Road Diesel	185.16
Paving On Road Diesel	13.41
Paving Worker Trips	18.24
Building 01/01/2011-12/31/2016	8,539.74
Building Off Road Diesel	294.84
Building Vendor Trips	1,337.64
Building Worker Trips	6,907.27
Coating 01/01/2011-12/31/2016	15.29
Architectural Coating	0.00
Coating Worker Trips	15.29
Fine Grading 01/01/2011-12/31/2016	1,572.76
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,528.99
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	43.76

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2013	10,348.14
Asphalt 01/01/2011-12/31/2016	216.81
Paving Off-Gas	0.00
Paving Off Road Diesel	185.16
Paving On Road Diesel	13.41
Paving Worker Trips	18.24
Building 01/01/2011-12/31/2016	8,543.26
Building Off Road Diesel	294.84
Building Vendor Trips	1,337.87
Building Worker Trips	6,910.55
Coating 01/01/2011-12/31/2016	15.29
Architectural Coating	0.00
Coating Worker Trips	15.29
Fine Grading 01/01/2011-12/31/2016	1,572.78
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,528.99
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	43.79

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2014	10,351.28
Asphalt 01/01/2011-12/31/2016	216.82
Paving Off-Gas	0.00
Paving Off Road Diesel	185.16
Paving On Road Diesel	13.41
Paving Worker Trips	18.25
Building 01/01/2011-12/31/2016	8,546.36
Building Off Road Diesel	294.84
Building Vendor Trips	1,338.12
Building Worker Trips	6,913.41
Coating 01/01/2011-12/31/2016	15.30
Architectural Coating	0.00
Coating Worker Trips	15.30
Fine Grading 01/01/2011-12/31/2016	1,572.80
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,528.99
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	43.80

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2015	10,353.33
Asphalt 01/01/2011-12/31/2016	216.83
Paving Off-Gas	0.00
Paving Off Road Diesel	185.16
Paving On Road Diesel	13.41
Paving Worker Trips	18.26
Building 01/01/2011-12/31/2016	8,548.39
Building Off Road Diesel	294.84
Building Vendor Trips	1,338.36
Building Worker Trips	6,915.20
Coating 01/01/2011-12/31/2016	15.30
Architectural Coating	0.00
Coating Worker Trips	15.30
Fine Grading 01/01/2011-12/31/2016	1,572.81
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,528.99
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	43.82



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2016	10,353.68
Asphalt 01/01/2011-12/31/2016	216.83
Paving Off-Gas	0.00
Paving Off Road Diesel	185.16
Paving On Road Diesel	13.41
Paving Worker Trips	18.26
Building 01/01/2011-12/31/2016	8,548.73
Building Off Road Diesel	294.84
Building Vendor Trips	1,338.50
Building Worker Trips	6,915.40
Coating 01/01/2011-12/31/2016	15.30
Architectural Coating	0.00
Coating Worker Trips	15.30
Fine Grading 01/01/2011-12/31/2016	1,572.81
Fine Grading Dust	0.00
Fine Grading Off Road Diesel	1,528.99
Fine Grading On Road Diesel	0.00
Fine Grading Worker Trips	43.82

Phase Assumptions

Phase: Fine Grading 1/1/2011 - 12/31/2016 - Default Fine Site Grading Description

Total Acres Disturbed: 543.21

Maximum Daily Acreage Disturbed: 135.8

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

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On Road Truck Travel (VMT): 0

Off-Road Equipment:

- 2 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day
- 1 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day
- 2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day
- 4 Scrapers (313 hp) operating at a 0.72 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 1/1/2011 - 12/31/2016 - Default Paving Description

Acres to be Paved: 135.8

Off-Road Equipment:

- 1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day
- 2 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
- 2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 1/1/2011 - 12/31/2016 - Default Building Construction Description

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day
- 3 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day
- 1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day
- 3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 1/1/2011 - 12/31/2016 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>CO2</u>
Natural Gas	9,952.80
Hearth	2,358.95
Landscape	16.70
Consumer Products	
Architectural Coatings	
TOTALS (tons/year, unmitigated)	12,328.45

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

<u>Source</u>	<u>CO2</u>
Natural Gas	8,095.80
Hearth	2,358.95
Landscape	16.70
Consumer Products	
Architectural Coatings	
TOTALS (tons/year, mitigated)	10,471.45

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	CO2
Single family housing	30,556.36
City park	75.58
General office building	6,455.29
TOTALS (tons/year, unmitigated)	37,087.23

Operational Settings:

Includes correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2011 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

<u>Summary of Land Uses</u>						
Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	477.00	8.71	dwelling units	2,511.00	21,870.81	163,708.75
City park		1.59	acres	45.00	71.55	408.08
General office building		11.01	1000 sq ft	462.00	5,086.62	34,712.43
					27,028.98	198,829.26

<u>Vehicle Fleet Mix</u>				
Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	47.6	1.1	98.7	0.2
Light Truck < 3750 lbs	10.0	2.0	92.0	6.0

<u>Vehicle Fleet Mix</u>				
Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Truck 3751-5750 lbs	22.5	0.9	98.7	0.4
Med Truck 5751-8500 lbs	10.2	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.1	0.0	76.2	23.8
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	55.6	44.4
Med-Heavy Truck 14,001-33,000 lbs	1.6	0.0	18.8	81.2
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	3.5	62.9	37.1	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

<u>Travel Conditions</u>						
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	10.8	7.3	7.3
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
City park				5.0	2.5	92.5

<u>Travel Conditions</u>						
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
General office building				35.0	17.5	47.5



