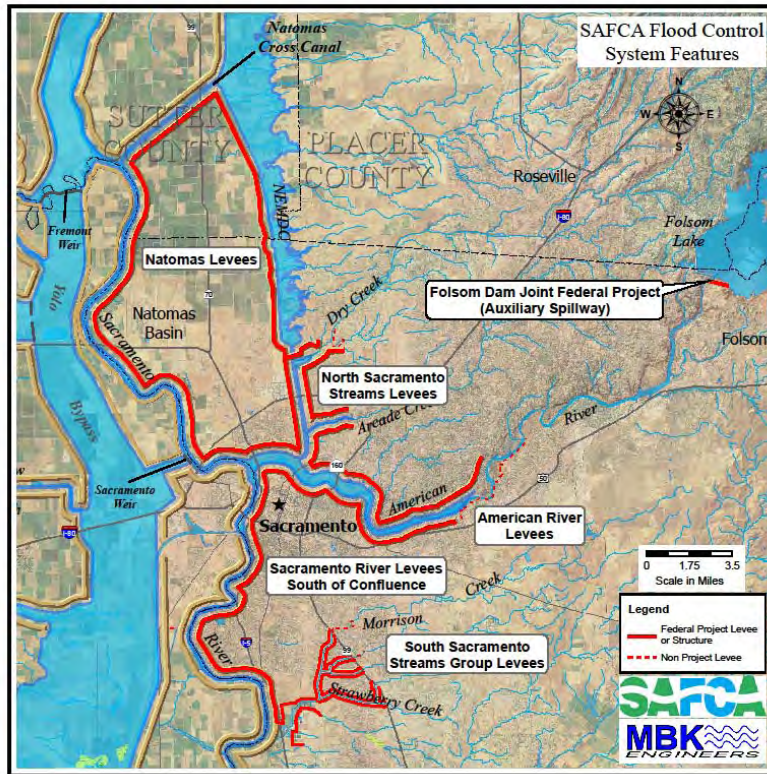


PHASE I ENVIRONMENTAL SITE ASSESSMENT

AMERICAN RIVER COMMON FEATURES GENERAL REEVALUATION REPORT (GRR)

Sacramento, CA



Prepared by:
Environmental Engineering Branch
Sacramento District



US Army Corps
of Engineers®

August 2012

This page intentionally left blank

TABLE OF CONTENTS

Acronyms	iii
Executive Summary	v
1.0 Introduction.....	1
1.1 Purpose.....	1
1.2 Detailed Scope of Services	1
1.3 Limitations and Exceptions.....	1
1.4 Special Terms and Conditions	1
1.5 Site Definition.....	2
1.6 Guidance	3
2.0 Site Description.....	4
2.1 Location and Legal Description.....	4
2.2 Site Vicinity General Characteristics.....	4
2.3 Current Use of Property	5
2.4 Descriptions of Structures, Roads, and Other Improvements on the Site.....	5
2.5 Current Uses of Adjoining Properties.....	5
2.6 Completed Study Work.....	5
2.7 Possible Project Alternatives	5
3.0 User Provided Information	7
3.1 Title Records	7
3.2 Environmental Liens or Activity and Use Limitations	7
3.3 Reason for Performing Phase 1.....	7
3.4 Other	7
4.0 Records Review	8
4.1 Standard Environmental Record Sources	8
4.2 Additional Environmental Record Sources	9
4.3 Historical Record Review	10
4.4 Regional Contaminant Considerations During Future Construction.....	10
5.0 Site Reconnaissance.....	12
5.1 Methodology and Limiting Conditions.....	12
5.2 Observations	12
6.0 Historical Records.....	13
6.1 Aerial Photo Review	13
6.2 Topographic Maps	13
6.3 Commercial Environmental Database Report	14
7.0 Interviews.....	15
7.1 Interviews with Owners/Occupants	15
7.2 Interviews with State and Local government Officials.....	15
8.0 Findings.....	16
9.0 Opinions.....	24
9.1 Type 1 Sites.....	24
9.2 Type 2 Sites.....	25
10.0 Conclusions.....	28
11.0 References.....	30

12.0 Signature of Environmental Professional32
13.0 Qualifications of Environmental Professional32

LIST OF TABLES

Table 1 Site Characterization Definitions
Table 2 Type 1 HTRW Sites
Table 3 Type 2 HTRW Sites
Table 4 Sites with Recognized Environmental Conditions

LIST OF FIGURES

Figure 1 Study Area
Figure 2 EDR Site Map with Search Radius
Figure 3 Potential Environmental HTRW Concerns

APPENDICES

Appendix A EDR DataMap™ Environmental Atlas™, Inquiry No. 3359662.2s
Appendix B Site Classification Report
Appendix C Interviews
Appendix D Site Photographs
Appendix E EDR Aerial Photo Decade Package, Natomas Basin Aerials for 2095499, Inquiry
No. 2215805.1
Appendix F Topographic Maps

ACRONYMS

ARFCD	American River Flood Control District
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
BTEX	Benzene, Toluene, Ethylbenzene, and total Xylenes
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CESPK	US Army Corps of Engineers, Sacramento District
COCs	Contaminates of Concern
DCA	Di-chloro Ethane
DCE	Di-chloro Ethylene
DoD	Department of Defense
DTSC	Department of Toxic Substance Control
DWR	California Department of Water Resources
DWSC	Deep Water Ship Channel
EDR	Environmental Data Resources Inc.
ER	Engineering Regulation (US Army Corps of Engineers)
ESA	Environmental Site Assessment
FUDS	Formerly Used Defense Sites
GRR	General Reevaluation Report
HTRW	Hazardous, Toxic or Radioactive Waste
IAW	In accordance with
KMEP	Kinder Morgan Energy Partners
LUFT	Leaking Underground Fuel Tank
LUST	Leaking Underground Storage Tank
MTBE	Methyl tert-butyl ether
NEPA	National Environmental Policy Act
NFA	No further Action
NGVD29	National Geodetic Vertical Datum of 1929
NPL	National Priority List (Superfund Site)
PCB	Polychlorinated Biphenyl
PCE	Tetra-chloro ethylene
RCRA	Resource Conservation and Recovery Act
RD900	State of California Reclamation District 900 (West Sacramento)
RD1000	State of California Reclamation District 1000 (Natomas)
SAFCA	Sacramento Area Flood Control Agency
SLIC	Spills, Leaks, Investigations and Cleanups
SVE/AS	Soil Vapor Extraction/Air Sparging
SWRCB	State Water Resources Control Board
TARP	Tesoro ARCO Remediation Project
TBA	Tert-butyl Alcohol
TCA	Tri-chloroethane
TCE	Tri-chloroethylene
TPH-d	Total Petroleum Hydrocarbons as Diesel
TPH-g	Total Petroleum Hydrocarbons as Gasoline
TSCA	Toxic Substance Control Act
USACE	United States Army Corps of Engineers

USEPA US Environmental Protection Agency
USGS US Geological Survey
WSAFCA West Sacramento Area Flood Control Agency

EXECUTIVE SUMMARY

The American River Common Features General Reevaluation Report (GRR) project is currently performing a study along approximately 40 miles of the levee system that surround the American River, Natomas Basin and the Sacramento Bypass.

The GRR is in the Feasibility Study phase of the Civil Works process, which requires a Phase 1 Environmental Site Assessment (ESA) to be performed to identify environmental contamination at or near the project construction site. Contaminated sites have the potential to significantly impact future construction activities and need to be identified as early as possible.

Records review identified 491 environmental sites including 7 sites that have the Hazardous, Toxic, Radiologic Waster (HTRW) concerns with the potential to affect future construction activities and 45 sites with HTRW concerns that should not affect future construction activities. Regional contaminants from historic agriculture and mining sources are likely present and should be considered on a site-specific basis if future construction activity generates soil for reuse or disposal.

This Phase 1 ESA identifies and generally describes locations where environmental conditions exist in proximity to the project levee. The purpose of the GRR is to identify deficiencies in the levee system and perform feasibility analysis on potential remedies for these deficiencies. Separate reports and construction plans will be developed for the chosen remedial alternatives. As the American River Common Features GRR project schedule approaches actual construction, an additional Phase 1 ESA may be necessary to provide up-to-date information necessary to comply with the USACE Civil Works process.

The presence of the Old Bryte Landfill adjacent to the Sacramento Bypass may influence alternative selection, as may the presence of the old Southern Pacific rail yard in downtown Sacramento. The bulk fuel facility at Broadway and Front Street near downtown Sacramento is a petroleum release site on both sides of the levee with fuel pipelines going through the levee and may be unavoidable; but non-hazardous waste under CERCLA.

Further investigation of these sites as they may affect the cost of levee relocation or rehabilitation for seepage, stability and erosion is recommended.

1.0 Introduction

1.1 Purpose

The purpose of this Phase 1 ESA is to identify recognized HTRW environmental conditions, including the presence or likely presence of any hazardous substances or petroleum products under conditions that indicate an existing release, a past release, or the material threat of a release into structures, the ground, and groundwater or surface waters of the project site.

A Phase 1 ESA is required by the United States Army Corps of Engineers (USACE) *Engineering Regulation (ER) 1165-2-132; HAZARDOUS, TOXIC AND RADIOACTIVE (HTRW) GUIDANCE FOR CIVIL WORKS PROJECTS.*, *Policy Guidance Letter 34 Non-CERCLA Regulated Contaminated Materials at Civil Works Projects* and *ASTM 1527-05 – Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* is widely used in the environmental industry and will be followed as applicable in this report.

The American River Common Features GRR will analyze the levee system surrounding the American River, Sacramento Bypass, and east bank of the Sacramento River downstream of the American River. These areas will be addressed in the future by using three alternatives developed from past levee construction and repair. The range of possible future construction activities may use techniques and methods that require soil and/or groundwater disturbance, thereby creating possible contaminant exposure concerns.

1.2 Detailed Scope of Services

The scope of this ESA is limited to assessing the environmental condition of the property associated with the levees under study in the American River Common Features General Reevaluation. It also is concerned with identifying HTRW sites within the project boundaries and the surrounding area using commonly known and reasonably ascertainable information.

1.3 Limitations and Exceptions

The Phase I ESA does not include any sampling or testing of soil, air, water or building materials.

1.4 Special Terms and Conditions

The current American River Common Features GRR project does not involve purchase of property for commercial purposes, and as such, the conditions for the ASTM specifications are not completely applicable. The ASTM standard is used as a guide and sections that are not applicable are deleted or modified to meet the requirements of the project. Where applicable, the format and guidance recommended by ASTM is followed as stated in standard E 1527-05. The ASTM post-dates the Regulation, and there is no requirement to follow it, but the ASTM is the industry standard and a convenient guide to follow in performing the environmental site assessment.

1.5 Site Definition

The approach of this report is to search environmental databases and produce a list of sites that have recognized environmental concerns in proximity to the project levee. Sites identified from the environmental database search are classified using the following criteria. The criteria are based on site characteristics that affect the potential of the site to impact future levee construction and repair activities.

Table 1 - Site Characterization Definitions

Type	Definition
1	Site with significant HTRW concerns that may impact future construction activities
2	Site with HTRW concerns that are not likely to have an impact on future construction activities, but warrant mention due to close proximity
3	Site with no apparent HTRW concerns or concerns that have been remediated and closed in the past, or sufficiently removed from the levees so as to have no possible impact.

Type 1 sites have current, significant HTRW concerns that may impact future construction activities. A significant HTRW concern for the American River GRR study and future levee construction projects include soil contamination within the footprint of levee construction activities, or groundwater contamination present on the site that extends to areas of levee construction. Sites with currently undefined or ill-defined contaminant plumes that have the possibility to affect future activities are also included in this category. Most of these sites are currently undergoing assessment, active remediation, or monitoring activities that are under the regulation of the California State Water Resources Control Board (SWCRB), or the California Department of Toxic Substances Control (DTSC).

Type 2 sites have identified HTRW concerns that present a low potential to impact future construction activities. These sites are removed from the levee centerline and will not be included in future areas of construction activity. Current remediation measures on these sites have stabilized a groundwater contaminant plume, remediated or removed a significant amount of the soil contamination present on the site. The combination of remediation measures and distance from the project centerline lead to the lower risk categorization of the site. Also included are contaminated properties that warrant mention simply due to close proximity (generally immediately adjacent to the levee) but pose no apparent problem for work on the levee unless the property must be used, such as a levee setback or staging area.

Type 3 sites have either been closed by a regulatory agency or have no historical evidence of potential HTRW problems. Sites located outside of the “Approximate Minimum Search Distance” defined in ASTM section 8.2.1 but included in the EDR records report are included in this site category as well. Sites with HTRW problems that are sufficiently removed from the levees, such as a site with a 300 foot petroleum groundwater plume located a half mile away, are included.

The best reasonably ascertainable data available to evaluate potential impacts of surface water on the project sites or other regional contaminant considerations comes from California Regional Water Quality Control Boards. Review of the most recent water quality information showed that COCs in the American River / Sacramento River included PCBs, mercury, and other agricultural related chemicals. Environmental impacts from PCBs was observed in fish tissue and seems to be a river wide problem that is regional (agriculture and mining) and best represented as area sources. Mercury contamination originates from the historic uses of the river basin for mining purposes. The levees themselves may be a source of these contaminants as historical records indicate that they were dredged from the riverbed and constructed after hydraulic mining was banned in the Sierra foothills and long after commencement of agricultural use.

1.6 Guidance

This report was prepared in accordance with ASTM E 1527-05, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process; ER 1165-2-132, HTRW Guidance for Civil Works Projects and Policy Guidance Letter 34: Non-CERCLA Regulated Contaminated Materials at Civil Works Projects. Deviations from the approved guidance procedures are noted where appropriate in the report. Reasons for the deviations generally include the unavailability of required information and feasibility concerns associated with the study. All reasonably ascertainable information has been reviewed in the preparation of this report.

An electronic database search and field observations were conducted in order to compile information for this Phase 1 ESA. This assessment did not include sampling or analysis of environmental media.

ER 11165-2-132 requires that the project avoid hazardous waste as defined by CERCLA. If it cannot be avoided, it must be cleanup at the 100% non-federal sponsor expense. Policy Guidance Letter 34 states that non-hazardous waste (such as State Special or Designated Waste) may be cleaned up as part of the Project; however it is the District's policy that the non-federal sponsor performs the cleanup. Paragraph 8 of the regulation requires that a site investigation and HTRW feasibility study or "ESA Phase 2" should be performed during the flood risk management feasibility study where waste is unavoidable.

HTRW assessments during the feasibility phase will determine the type and extent of HTRW contamination, if any, and how HTRW considerations will impact on the alternative project plans. A preliminary cost estimate of required HTRW response actions will be needed for each project alternative in order to be able to make a reasoned choice among alternative project plans. Alternative project plans may consider avoidance of HTRW as well as possible responses. At least one alternative plan should be formulated to avoid HTRW sites to the maximum extent possible, consistent with project objectives. These assessments, conducted during the feasibility stage, are shared with the local sponsor for cost-shared studies.

2.0 Site Description

The Project incorporates all or part of the following areas:

- Sacramento Area Flood Control Agency
- American River Flood Control District
- Reclamation District 1000 (Natomas Basin)
- Reclamation District 900 (West Sacramento)
- West Sacramento Area Flood Control Agency

2.1 Location and Legal Description

The American River Levee system is a levee system that divides Sacramento County and joins the Sacramento River on the western boundary of the County. The entire flood-prone area was once called Natomas Basin but has since been sub-divided into Reclamation District 1000 (Natomas Basin) north of the River and American River Flood Control District mostly south of the River, and north of the River east of the Natomas main drainage canal. One alternative considers diverting more of the Sacramento River flow into the Yolo Bypass at the Sacramento Bypass and therefore some of the levee system in Yolo County across the Sacramento River is considered. A separate project to raise the height of the levees on the American River is ongoing.

Levees “reaches” have been assigned to segments of the levee to assist with identification of specific locations (see Figure 1). The Project has divided levee reaches into American River North (ARN) including Dry Creek, Magpie Creek and Arcade Creek, American River South (ARS) including the Sacramento River south of the American River confluence, and Natomas (NAT).

2.2 Site Vicinity General Characteristics

The City of Sacramento is in Sacramento Valley located immediately east of the City of West Sacramento at the confluence of the American River and Sacramento River. The two cities are separated by the Sacramento River, which flows from north to south. The City and County contains a mix of residential, commercial, agricultural and industrial properties. Approximately 500,000 people reside in the City and 1,500,000 reside in the County. The City is the Capital of the State of California. It is considered to be at the highest risk of flooding of any major city in the nation. Most of Reclamation District 1000 is included in a separate flood risk management project. The study area includes

- **Natomas Main Drainage Canal South and East Levee** from the confluence of Dry Creek, Magpie Creek and Arcade Creek to the Sacramento River is included.

- **American River North and South Levees** from Carmichael through the City of Sacramento to the Sacramento River are included.
- **Sacramento River East Levee** from the American River south to Clarksburg, Freeport and Elk Grove/Laguna Creek is included
- **Sacramento Bypass Levee** extends for approximately 1.1 miles along the Sacramento Bypass left bank from the Sacramento Weir west to the Yolo Bypass Levee.

2.3 Current Use of Property

The American River Common Features Levee system property is a currently used a flood protection levee for the City of Sacramento and Sacramento County.

2.4 Descriptions of Structures, Roads, and Other Improvements on the Site

Roads along the levee system are a mix of gravel and paved roads, railroads and bike trails that can be found along the levee crest and at the base of the levee. The levee system is crossed by numerous bridges. There are numerous residences, businesses and landfills built on the project site (levee) within the developed areas of the City.

2.5 Current Uses of Adjoining Properties

Landside adjacent properties are a mix of light industrial, commercial properties, and residential subdivisions and agricultural lands. Waterside adjacent property is the American River Parkway, the undeveloped Sacramento River; the Yolo Bypass, which is a diversionary floodwater channel used during periods of high water. There are several parks and recreational areas located between portions of the levee and the Sacramento River.

2.6 Completed Study Work

Several earlier feasibility studies to include environmental impact statements and environmental site assessments for the American River (USACE, 1991, 1996, 2004) and Magpie Creek (USACE, 1995) were completed by the Sacramento District. This environmental site assessment is an update to previous assessments.

2.7 Possible Project Alternatives

All alternatives include adding erosion control to the American River levees.

One alternative adds measures for levee stability and seepage control to the levees on the east bank of the Sacramento River south of the American River.

Another alternative avoids improvement of Sacramento River levees by widening the Sacramento Bypass north of West Sacramento to divert more water from the Sacramento River into the Yolo Bypass.

The Project has not fully defined all alternatives but they have defined the project area.

3.0 User Provided Information

3.1 Title Records

Title records are not provided because the project site, including the levees and waterways, is essentially public land, easement or right-of-way.

3.2 Environmental Liens or Activity and Use Limitations

There are no NPL or proposed NPL sites located within the study area. There is one delisted NPL site, Jibboom Junkyard. Three CERCLIS sites are located within the study area including: La Quinta Inn and Jibboom Junkyard Super Fund Site. There are no DoD sites within the study area. One FUDS sites, the Sacramento District Engineer Yard is included in the study area. There are no tribal lands included in the search area. No sites with state environmental liens are located within the study area.

3.3 Reason for Performing Phase 1

A Phase 1 ESA for HTRW is required by USACE ER 1165-2-132 for all civil works projects during the reconnaissance or feasibility study phase. A Phase 1 ESA is also required by National Environmental Protection Act (NEPA) for all construction activities.

3.4 Other

This ESA will follow the environmental industry practice of using the guidelines set forth in the USEPA rule concerning "All Appropriate Inquiries," the *ASTM E 1527-05* standard, USACE *Engineering Regulation (ER) 1162-2-132* and *Policy Guidance Letter 34, Non-CERCLA Regulated Contaminated Materials at Civil Works Projects*. *ASTM E 1527-05* was designed to protect persons purchasing property from liability arising from adverse environmental conditions, but also may be used for other situations per section 4.2.1 of the standard.

4.0 Records Review

4.1 Standard Environmental Record Sources

Environmental Data Resources (EDR) conducted a records research of the study area consisting of 71 federal, state, public, and proprietary available data bases.

Figure 2 shows the EDR map used with the one mile buffer around the project levee. A complete copy of the EDR Report is included as Appendix A. Standard “point” searches apply different levels of scrutiny at the ¼ mile, ½ mile and 1 mile search radius per the ASTM. This “corridor” search applies the same level of scrutiny to the entire one mile search radius.

The report generated by EDR searched the following Federal environmental record sources:

- National Priority List (NPL), including current, proposed, de-listed, liens
- Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), including archived sites (CERC-NFRAP) and CERCLA Lien Information (LIENS 2)
- Resource Conservation and Recovery Act (RCRA), including transporters, storage and disposal (TSDf), large quantity generators (LQG), small quantity generators (SQG), conditionally exempt small quantity generators (CESQG), non-generators (NonGen) and the RCRA Administration Action Tracking System (RAATS)
- The Emergency Response Notification System (ERNS)
- The Hazardous Materials Incident Report System (HMIRS)
- The EPA’s listing of Brownfield properties (US BROWNFIELDS)
- Department of Defense sites (DOD) and Formerly Used Defense Sites (FUDS)
- The Toxic Chemical Release Inventory (TRIS)
- Integrated Compliance Information System (ICIS)
- PCB Activity Database (PADS)

The following State and Local environmental record sources were searched:

- California Department of Health Services (CA BOND EXP. PLAN)
- Solid Waste Facilities/Landfill Sites (SWF/LF)
- California Water Resources Control Board Waste Discharge System (CA WDS)
- Water Management Database System (WMUDS/SWAT)
- Leaking Underground Storage Tank Incident Reports (LUST), Facility Inventory Database (CA FID UST), Underground Storage Tank Database (UST), Historical Underground Storage Tank Database (HIST UST) and the Aboveground Storage Tank Database (AST)
- California Regional Water Quality Control Board (SLIC)
- DTSC Liens (LIENS)

- California Hazardous Material Incident Report System (CHMIRS)
- Confirmed release sites involving DTSC (RESPONSE)
- Pollutant emissions data (AIRS)
- The DTSC database that identifies sites that have known contamination or sites that require further investigation (ENVIROSTOR)

There were no tribal records found that applied to the area in question

4.2 Additional Environmental Record Sources

Federal Sources:

- Corrective Action Report (CORRACTS)
- A listing of sites with engineering controls in place (USENG CONTROLS)
- A listing of sites with institutional controls in place (US INST CONTROL)
- Department of Transportation Office of Pipeline Safety incident and accident data (DOT OPS)
- A listing of clandestine drug lab locations (US CDL)
- Land Use Control Information System (LUCIS)
- A listing of sites that cleanup responsibility and standards have been established by U.S. District Courts (CONSENT)
- Uranium Mill Tailings sites (UMTRA)
- Open Dump Inventory (ODI)
- Torres Martinez Reservation Illegal Dump Site Locations (DEBRIS REGON 9)
- Mines Master Index File (MINES)
- Administrative cases and pesticide enforcement actions (FTTS) and (HIST FTTS)
- FIFRA-related reporting (SSTS)
- Material Licensing Tracking System (MLTS) and Radiation Information Database (RADINFO)
- Facility Index System (FINDS)

State and Local Sources:

- Known and potential hazardous substance sites (HIST Cal-Sites, formerly ASPIS and replaced by ENVIROSTOR)
- School Property Evaluation Program (SCH)
- Toxic Pits CEANUP Act Sites (Toxic Pits)
- Sites designated by LUST, SWF/LS and Cal-Sites (Cortese)
- Recycling facilities (SWRCY)
- Statewide Environmental Evaluation and Planning System (SWEEPS UST)
- Proposition 65 Database (Notify 65)
- Recorder Land Use Restrictions (DEED)
- DTSC low threat level properties (VCP)
- Dry cleaning-related facilities with EPA ID numbers (DRYCLEANERS)
- Clandestine Drug Labs (CDL)

- Well Investigation Program Case List (WIP)
- Extracts from hazardous waste manifests (HAZNET)
- List of waste tire haulers (HAULERS)

4.3 Historical Record Review

Historic aerial, topographic, and fire maps were not obtained for this search due to the cost for a search of this magnitude. Instead the assessment reviewed these historical records obtained for a previous assessment (USACE, 2008) which covered most of the same area, with the assumption that the historic records haven't changed significantly since 2008.

4.4 Regional Contaminant Considerations During Future Construction

Environmental records searches are efficient ways to identify and track sites where past releases have occurred. Other types of contaminants unlikely to be picked up in an environmental records database search are considered in this report because they are associated with significant industries that were historically active in the region. Gold mining and large-scale agricultural activities are two historic activities that have produced regional contaminants in the project area and should be considered when future levee construction occurs.

The levee system around the American River and Natomas Basin lies in a region that has a history of gold mining. The regional history of gold mining coupled with the regional agriculture land use and the historic use of dredge material from the rivers as levee construction material, suggests there are some chemicals for which data collection would be useful to confirm if contaminants from these historic process are present. These include arsenic, mercury, pesticides and herbicides.

Additionally, based on the vehicular use of the existing levee crown, lead and petroleum hydrocarbons may have been released to the upper 3 feet of the roadway shoulder on the existing levee, especially at bridge locations where old corrosion-resistant lead paint would be present. Herbicides are sometimes used for weed abatement on the levees.

Railroad tracks are located on the levee on the Sacramento River west of the downtown area. Old railroad ties were preserved with creosote. Newer wooden ties are probably preserved with copper arsenate. If the railroad road bed must be disturbed for the project, further investigation for these contaminants will be warranted.

Sacramento Regional County Sanitation District has regionalized its wastewater treatment system (SRCSD, 20007). Most or all wastewater is collected and pumped to the regional wastewater treatment plant in Elk Grove. Treated wastewater is discharged just south of the Freeport Bridge in the project area. Wastewater from Natomas is moved south to the west of the Sacramento River and now crosses to Elk Grove at the Freeport bridge. There were wastewater treatments plants located between Exposition Park and Howe Avenue (the "Arden Station") and on River Walk Road (the "Northeast Facility") along the north bank of the American River. These old wastewater treatment plants have been converted to pumping and flow equalization stations that today move wastewater through force mains across the American River. The

Sacramento City Interceptor parallels the Sacramento River south of the Sacramento Marina for several miles. The Dry Creek Interceptor crosses Dry Creek and Magpie Creek between Rio Linda Blvd and Dry Creek Road near the Sacramento Northern Bike Trail, and crosses Arcade Creek at Rio Linda Boulevard. There is no record of overflows but the wastewater pipelines are to be avoided and special personal protective equipment for biological hazards may be required when working in close proximity to present and former treated wastewater discharge locations.

5.0 Site Reconnaissance

5.1 Methodology and Limiting Conditions

The study area site visit was conducted for the Phase 1 ESA by staff from the Environmental Engineering and Geology Sections of the United States Army Corps of Engineers, Sacramento District.

The objective of the site visit was to identify recognizable environmental concerns in connection with the property. Common environmental concerns that were looked for include the following: asbestos; construction and demolition debris; drums; landfill or solid waste disposal sites; pits, ponds or lagoons; wastewater; fill dirt, depressions, mounds, or any artificial structures; PCB containing transformers; monitoring wells, and the presence or likely presence of any hazardous substance or petroleum products on the property under conditions that indicate an existing release, a past release, or a material threat of a release on the property or into the ground, groundwater, or surface water of the property.

The mere presence of a contaminated property on the dry side of the levee was generally considered to be avoidable. The presence of contaminated properties on the “wet” side of the levee or features on or inside the levee such as monitoring wells, drains and pipelines were generally assumed to be unavoidable.

5.2 Observations

Site visits to properties screened as likely affecting the Project were conducted on August 2, 2012. Photographs are included in Appendix D. Findings are incorporated in Chapter 8.

6.0 Historical Records

The 2008 assessment consulted Sanborn Fire Insurance records to glean any information about sites along the rivers that was not presented elsewhere. Basically, the maps confirmed the other sources that most of the industrial sites were located at or near the confluence of the American and Sacramento Rivers. Searching the Internet yielded a few aerial and historical photographs, and maps which confirmed earlier findings about the locations of various industrial sites.

6.1 Aerial Photo Review

EDR provided an Aerial Photo Decade Package (EDR, 2008) for the previous environmental site assessment (USACE, 2008). "Birdseye" view drawings, aerial and other historical photographs were obtained from the EDR report, and from the California State Library in Sacramento, California.

It is unlikely any additional historical air photos have been found in the last four years. Therefore this assessment used the 2008 historical record search from the previous study. It is included in Appendix E.

Several industrial sites were noted, especially along the confluence of the American and Sacramento Rivers. Water-borne shipping was more in evidence in the past than it is today, although the modern ships, while fewer in number carry much larger payloads.

6.2 Topographic Maps

The search also consisted of reviewing historical topographic maps (Appendix F):

- Sacramento East Maps

- From the edition of 1949, six specific crossings of the Sacramento River were noted, Highway 99, H Street, a footbridge south of Arden Town and three railroads, Southern Pacific, Sacramento Northern and Western Pacific. In addition, there are power line crossings.
- There are several pumps related to miscellaneous water uses associated with the levees.
- The edition of 1954 showed the same features, except that the footbridge had become the Watts Avenue crossing.
- The map of 1967 added a golf course east of the highway 80 and south of Cal Expo, a sewage disposal plant east of mile 5 and west of Howe Avenue, a filtration plant east of the Sacramento State University campus and a fire station, presumably associated with the Sacramento State campus.
- The Sacramento East map of 1975 was a photo revision of the 1967 edition and added a crossing at Howe Road.

- The editions of 1980 and 1992 did not show any significant additions.

- Sacramento West Maps

- The map of 1949 noted an intake tower and filtration plant south of the confluence of the American River, a pumping plant at the end of the Natomas Canal, a boat launching ways near the confluence of the American River and a clay pit and stack near Clay Bank Bend. Crossings include the Tower Bridge, the I Street Bridge and the Jibboom Street Bridge.
- There are several pumps related to miscellaneous water uses associated with the levees.
- In the 1967 edition, the clay pit has become Lake Greenhaven and the stack is gone. The Sacramento Deep Water Ship Channel is added. There is a new filtration plant south of the end of 10th Avenue, a new sewage disposal plant at the confluence of the barge canal leading to the deep water ship channel, a new marina at Miller Park and borrow pits across the river from the old intake tower. Highway 80, 5 and a proposed crossing for highway 880 are added.
- The photo revision of the 1967 edition shows the actual location of the 880 bridge.

- Clarksburg Maps

- The 1952 edition of the Clarksburg map shows a sugar beet plant located north of Clarksburg on the west side of the Sacramento River and the Borges-Clarksburg Airport at benchmark 13. There are several pumps related to miscellaneous water uses associated with the levees. Crossings include several power lines and a drawbridge south of Freeport.
- The version of 1967 shows three industrial waste ponds in or on the location of the sugar beet plant, just north of Willow Point Road. There is a new water tank and sewage disposal plant at Freeport Bend on the east side of the Sacramento River
- The 1975 photo revision of the 1967 edition adds a small waste pond at the old sugar beet plant.
- The 1980 photo revision of the 1967 edition shows a new waste pond at the sugar beet plant.

6.3 Commercial Environmental Database Report

The EDR “Environmental Records Database Search is in Appendix A. Due to the size of the document (over 2,000 pages), the Appendix contains only an extract. The entire document is included in PDF file format on CD.

7.0 Interviews

Six interviews were conducted in the 2008 assessment. One new interview was conducted for this assessment.

7.1 Interviews with Owners/Occupants

Individual Contacted	Date	Title/Organization	Contact Information	Page Number (USACE, 2008)
Mr. Joe Borges	10/23/2008	Owner Borges-Clarksburg Airport	N/A	5

7.2 Interviews with State and Local Government Officials

Tim Kerr, the President of the American River Flood Control Agency (ARFCA) was interviewed. His response is in Appendix C.

Previous interviews included

Individual Contacted	Date	Title/Organization	Contact Information	Page Number (USACE, 2008)
Ms. Mary Perlea	8/31/2007	US Army Corps of Engineers	(916) 557-7185	1
Mr. Terrie Figueroa	9/13/2007	Secretary/RD1000	(916) 922-1449	2
Mr. Richard Payan	9/13/2007	Battalion Chief/City of Sacramento Fire Department	(916) 216-0311	3
Mr. Paul Devereaux	9/20/2007	General Manager/RD1000	(916) 922-1449	4
Lt(jg) Simone Moss	9/25/2008	Waterways Officer, USCG	(510) 437-2975	6

The interviewees had very limited knowledge of HTRW contaminated properties located along the levees. It is recommended that public officials at the California Department of Toxic Substances Control and Central Valley Regional Water Quality Control Board involved in cleanup of contaminated sites that may affect the Project be interviewed to help define how the Type 1 sites affect project alternatives.

8.0 Findings

The EDR search identified over 600 records of possible HTRW concerns within the study area. All of these sites were identified in the EDR search by a site identification-focus map number identifier. Many of the Site ID's had multiple records of possible HTRW associated with them so the total number of identified sites in the EDR report was 491. Of these, 7 sites were considered to be Type 1 and 45 were found to be Type 2.

Appendix B provides a summary of each site including its levee station and reach, whether or not the site may affect future construction, and links to regulatory information. This information was used to focus the Phase 1 ESA to the potential effects of the identified HTRW sites on future construction activities. Further investigation of potentially hazardous sites included review of available site information in the EnviroStor and GeoTracker databases maintained by the California Department of Toxic Substance Control (DTSC) and California State Water Resources Control Board (SWRCB) respectively. Reports from these databases were used to determine the possible impact identified sites may have on future construction activities. Characteristics used to classify the site included the suspected mass and volume of contaminants, their mobility within the soil-groundwater-air matrix, and the likelihood of traditional levee remediation measures impacting contaminated media.

As previously discussed, sites were classified in one of three types according to the potential for harmful impacts on future construction activities. Tables 2 & 3 below provide a listing of all the Type 1 and Type 2 sites, respectively. Figure 3 provides a map showing the location of all Type 1 and 2 HTRW sites. The remaining Type 3 sites are identified in Appendix A and B.

Whether a contaminated site adjacent to the levee is avoidable depends in part on what work is proposed to be done on the levee; erosion control, stability, seepage control, relocation or raise in elevation. Justification for classification as a Type 1 or Type 2 site is further discussed in Chapter 9, Findings.

Table 2 – Type 1 HTRW Sites

Type 1 Sites – HTRW concerns that may impact future activities					
Site Name	EDR ID#	Assessor Parcel Number	Levee Reach	Address	Summary
Full Stop Mini Mart	41-5	251-0292-016	ARN_D	3200 Rio Linda Blvd, Sacramento, CA 95815	Gasoline plume at gasoline station adjacent to the levee at a bridge crossing. Active remediation by soil vapor extraction and air sparging is occurring. The oxidizer is immediately adjacent to the levee. http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606701131
Old Bryte Landfill	79-6	042-280-011	WS*	50035 County Rd 126, West Sacramento, CA 95691	Old unregulated landfill, uncapped, is immediately adjacent to the Sacramento Bypass levee. Waste from a car battery lead recycling company in West Sacramento was dumped here. http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60001146 http://www.calrecycle.ca.gov/SWFacilities/Directory/57-CR-0002/Detail/
CA State Railroad Museum Unit SHO	120-7	No parcel number, public land	ARS_D	501 Jibboom ST, Sacramento, CA 95814	Union Pacific Railroad (old Southern Pacific) railyard. The museum appears to be a surrogate for the historic locomotive repair shops being preserved here for reevelopment. There are monitoring wells in the levee and in the waterfront park at this location. http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=80001665
TOSCO Corporation/ ConocoPhillips Sacramento Terminal	174-11	009-0030-054	ARS_D	76 Broadway, Sacramento, CA 95818	Bulk fuel terminal used by ConocoPhillips. Soil and groundwater beneath the site have been impacted by petroleum hydrocarbons, specifically from active gasolines and diesel fuels. http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL0606742138
TOSCO Corp. – Sacramento Terminal	174-11	009-0020-001	ARS_D	66 Broadway, Sacramento, CA 95818	Wet side of major petroleum release above still undergoing cleanup. http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL372513618
Chevron Sacramento Terminal 1001620	178-11	009-0012-072 009-0012-071	ARS_D	2420 Front St, Sacramento, CA 95818	More dry-side petroleum bulk handling facility. Petroleum pipelines pass through the levee at all properties. http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606700657
Harbor Sand & Gravel/Bell Marine Co Inc.	128-8	001-0160-011	ARS_B	200 28th St, Sacramento, CA	Release was reported in 1994. The property is now occupied by an asphalt concrete recycling company. The new business has fenced off the levee road and its operation is encroaching on the levee.

					http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL0606705586
--	--	--	--	--	---

Table 3 Type 2 HTRW Sites

Type 2 Sites – HTRW concerns that are not likely to impact future activities					
Site Name	EDR ID#	Distance from Centerline (miles)	Levee Reach	Address	Summary
PG&E – Sacramento Site	156-11	009-0012-003	ARS_D	2000 Front St, Sacramento, CA 95818	Former manufactured gas plant that produced gas from raw materials such as coal and petroleum from 1873 to 1930. Primary COCs in both soil and groundwater are BTEX, and PAHs including naphthalene. http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=34490048
Shell #204-6678-9003	98-7	001-0011-003	ARS_D	225 Jibboom, Sacramento, CA 95814	Gasoline plume in groundwater. Two gasoline stations, one adjacent to the levee. This waterfront area was a Superfund site that has been redeveloped. http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606700500
Continental Chemical Company	69-8	275-0111-006	ARN_C	2175 Acoma St Sacramento, CA 95815	LUST, SLIC site http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL185472918
Micheletti Property	69-8	275-0112-005	ARN_C	2147 Barstow St Sacramento, CA 95815	SLIC site, CVOCs http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL0606762702
Martin Sprocket & Gear Inc.	99-8	001-0070-036	ARS_C	1199 Vine St STE 204, Sacramento, CA 95814	Small quantity hazardous waste generator with a diesel tank on-site. No record of releases. A cluster of three monitoring wells was found in the levee near this property, probably associated with Lovotti Bros. at 1275 Vine St. http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606793627
Petro-Speed	123-8	001-0142-010 001-0142-011 001-0142-012	ARS_B	324 N 16 th St Sacramento, CA	Old gasoline station that has been closed. Petroleum plume being monitoring. Sufficiently removed from the River. http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606700184
Sacramento City Landfill	128-8	001-0170-018	ARS_B	20 28th and A St, Sacramento, CA	Now known as “Sutter’s Landing Regional Park”. Closed Sacramento public solid waste landfill. The landfill is built right up against the levee so that the levee crown road is downhill from the landfill cap. Stormwater drains on the

					landfill cap go through the levee to the River. Landfill gas collection wells are close to the levee. A Kinder Morgan petroleum pipeline is buried under the water-side toe of the levee. http://www.calrecycle.ca.gov/SWFacilities/Directory/34-AA-0018/Detail/
Scollan (Old Sac City Landfill)	133-8	001-0160-013	ARS_B	24th and A St, Sacramento, CA	Old dump site along the AR between railyard and Sac City landfill http://www.calrecycle.ca.gov/SWFacilities/Directory/34-CR-5005/Detail/
Sacramento Housing & Redevelopment Agency	149-11	009-0012-002	ARS_D	1920 Front St, Sacramento, CA 95814	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606700254 http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=34240036
Sacramento Municipal Utility District (SMUD)	158-11		ARS_D	Front & T St, Sacramento, CA 95814	Across the street from the PG&E site. Historical uses include vehicle maintenance, fueling, and storage. The potential site contaminants of concern are polynuclear aromatic hydrocarbons (PAHs), total petroleum hydrocarbons as gasoline (TPH-Gas), and volatile organics (VOCs). All remedial activities were completed in 2008, however, DTSC required the continued operation and maintenance of the GWETs and associated monitoring wells and prohibited certain uses of the site. http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=34490057
Delta Shores	243-20		ARS_G	8145 Freeport Blvd Sacramento CA 95832	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000000566
Wastewater Treatment Plant Yolo APN		058-260-016 058-260-019		1991 South River Rd West Sacramento, Ca 95691	Worth noting for Health & Safety while working in this reach of the Sacramento River http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0611300170
Pell Drive	15-4	237-0400-019	ARN_F	4220 Pell Dr Sacramento, CA 95838	Chlorinated solvents in soil http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60001003
Great American Stage	29-4	250-0122-011	ARN_F	3560 Western Ave #A Sacramento, CA 95838	NPDES/WDS Permit
Strawberry Manor/PCB Site	43-4	263-0313-003	ARN_E	188 Olmstead Dr Sacramento, CA 95838	PCB in soil http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=34330034

Arco #6168	98-7	001-0012-016	ARS_D	222 Jibboom St, Sacramento, CA 95814	TPH release site by the levee, across the street from the Shell release site, monitored. http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606700277 http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606700537
Jibboom Junkyard	119-7	001-0190-015	ARS_D	I-5 and Jibboom St, 240-260 Jibboom St, Sacramento, CA 95814	Redeveloped property, former NPL site http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=34490023
Colfax Yard	63-8	275-0072-002		2225 Colfax St, Sacramento, CA 95815	LUST site, TPH-diesel release http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606700685
Lawson Mechanical Yard	69-8	275-0113-022	ARN_C	58 Arden, Sacramento, CA 95815	LUST site http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606700395
Rawson Drug & Sundry Corp	69-8	275-0111-001	ARN_C	2189 Acoma St Sacramento, CA 95815	Old North Sacramento, minor release, to groundwater but this property is adjacent to the levee. http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606793621
A-1 Plating Company	69-8	275-0112-017	ARN_C	2170 Acoma St Sacramento, CA 95815	Case closed in 2010 http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=34340002 http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL185792942
Petrocheck	69-8	275-0161-001	ARN_C	2076 Acoma St Sacramento, CA 95815	Old North Sacramento, Historical site, County response with no state involvement, organic liquid in soil
Green Property	69-8	275-0163-001	ARN_C	1000 Del Paso Blvd Sacramento, CA 95815	Old North Sacramento 4-LUSTS, County response
Central Maintenance	74-8	Public land	ARN_C	2080 Railroad Dr Sacramento, CA 95815	LUST, County response , Los Rios Community College
Subway Truck Parts	81-8	275-0200-010	ARN_C	903 Del Paso Blvd Sacramento, CA 95815	LUST, county response
Mells Cargo Supply	84-8	274-0200-005	ARN_C	1940 Railroad Dr Sacramento, CA 95815	LUST Site, RWQCB response http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606700530
Special Service	84-8	274-0200-010	ARN_C	1930 Railroad Dr Sacramento, CA 95815	LUST, county response
Robertson Sand & Gravel	92-8	001-0160-011	ARN_B	(28 th & A) Sacramento (County), CA	MINES database, no longer operating
Kinder Morgan Energy	95-8	275-0310-031	ARN_B	1111 Exposition Blvd	SLIC site – leaking petroleum pipeline

Partners KMEP Exposition Blvd		thru 275-0310-038		Sacramento, CA 95815	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000001938
Sacramento Police Dept/Prop MNGT/Armory	96-8	001-0200-035	ARS_C	555 Sequoia Pacific Blvd Sacramento, CA 95814	Clandestine drug lab
Direct Current Inc.	101-8	275-0270-018	ARN_B	150 Commerce Cir Sacramento, CA 95815	RCRA Battery hazwaste, no releases
Sacramento Marina	174-11	009-0020-003	ARS_D	2701 Marina View Dr Sacramento, CA 95818 (2710 Ramp Way?)	LUST Site, County response
Setzer Forest Products Inc.	187-11	009-0030-019 009-0270-009 009-0270-033 009-0030-043 009-0030-045 009-0286-012	ARS_D	2570 3 rd St and 2630 5 th St, Sacramento, CA 95818	LUST site http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606786234
Sacramento City Unified School District Maint. Yard	191-11	009-0237-013	ARS_D	425 1 st Ave (AKA 5 th St @ 1 st Ave), Sacramento, CA 95818	LUST site http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606728136
Utilities Sump 2A	210-11	017-0036-021 017-0036-020 017-0036-017 017-0036-019	ARS_D	3530 Riverside Blvd, Sacramento, CA 95814	AST with sump County response
Shell	216-11	017-0071-004	ARS_D	4000 S Land Park Dr Sacramento, CA 95822	LUST Site (TPHg) http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606700962
Hubacher Cadillac Inc	148-13	295-0020-004	ARN_A	1 Cadillac Dr Sacramento, CA 95825	UST permit
CA State University Sacramento	179-13	005-0010-007 005-0010-027 079-0221-002 079-0221-009	ARS_A	6000 J St Sacramento, CA 95819	hazmat storage http://www.envirostor.dtsc.ca.gov/public/hwmp_profile_report.asp?global_id=CAT080031115&starttab=
Chevron #9-1743	153-14	294-0107-006	ARN_A	3481 Fair Oaks Sacramento, CA 95825	LUST Site (TPHg) http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606700085

Arco #4968	153-14	292-0123-002	ARN_A	3501 Fair Oaks Blvd Sacramento, CA 95825	LUST Site (TPHg) http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606700223
Shell SS	153-14	292-0141-008	ARN_A	3510 Fair Oaks Blvd Sacramento, CA 95825	LUST Site (TPHg) http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606701030
BP #11176 (Former)	153-14	293-0260-001	ARN_A	3480 Fair Oaks Blvd Sacramento, CA 95825	LUST Site (TPHg) http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0606700100
Glenbrook Shopping Plaza	192-14	078-0011-017	ARS_A	8700-8760 La Riviera Dr, Sacramento, CA 95831	SLIC Site (PCE) http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000003071
Riverside Plaza Shopping Center	225-16	030-0330-015	ARS_F	6401 Riverside Blvd, Sacramento, CA	SLIC Site (PCE) http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL0606734773
Cleaners Express	231-19	031-1030-017 031-0070-077 031-0070-078	ARS_F	7600 Greenhaven Dr, Unit 7, Sacramento, CA 95831	SLIC Site (PCE) http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000003089

9.0 Opinions

All information used to form the following opinions was gathered from the most recent reporting information available in the EnviroStor or GeoTracker databases, site reconnaissance and interviews. If no citation is given, general information on the website or the site details from the EDR report were used.

9.1 Type 1 Sites

76/66 Broadway & 2420 Front St EDR Site 174-11 is a bulk fuel terminal now used by ConocoPhillips. The site is located within an industrial area of Sacramento, north and east of the Sacramento Marina at the intersection of Front and Broadway Streets. Twelve aboveground storage tanks associated above- and below- ground piping, a loading rack, and several buildings are present at the site. Previous site investigations have revealed that the soil and groundwater beneath the site have been impacted by petroleum hydrocarbons, specifically from active gasoline and diesel fuels. Previous remedial activities include a soil vapor extraction system set up in 1991 that removed 26,000 pounds of petroleum hydrocarbons after two months; an expanded soil vapor extraction system. The site is located on both sides of the levee. Pipelines run through the levee from 2420 Front Street to 66 Broadway and from 76 Broadway to the Sacramento Marina. Pipelines also run parallel to the levee from 76 Broadway to 2420 Front Street. 66 Broadway St is on the water side of the levee while 76 Broadway is on the dry side of the levee making this site unavoidable. 2420 Front Street is on the dry side of the levee.

EDR Site 79-6, Yolo County Assessor Parcel Number (APN) 042-280-011 is the Old Bryte Landfill. The landfill was an old unregulated dump site. DTSC has found lead above risk level. The source of the lead is probably scrap from an old car battery lead recycling operation in West Sacramento which is now the site of Sacramento Stucco. The waste would probably classify as CERCLA hazardous waste based on toxicity and leachability. Very likely the north levee for the Sacramento Bypass cannot be moved without dumpsite removal by the non-federal sponsor at 100% non-federal expense.

EDR Site 41-5, Sacramento County APN 251-0292-016 Full Stop Mini Mart in ARN Reach N on Arcade Creek is a leaking underground storage tank adjacent to the Arcade Creek levee adjacent to a bridge. The site is being actively remediated with soil vapor extraction and air sparging and it is possible but not probable that some vapor-laden air from the air sparging escapes the soil vapor extraction system into the levee. The thermal/catalytic oxidizer is trailer-mounted and located at the dry side toe of the levee. The site is included here as it is an actively remediated groundwater contamination site on a parcel adjacent to the levee.

EDR Site Number 120-7 in ARS Reach D is the old Southern Pacific rail yard with engine houses. It has no assessor parcel number as it is now public land for historic preservation and redevelopment. This was a major cleanup site. Monitoring wells are found in and on the west (wet) side of the levee along the Sacramento River. Land use controls are in place. It is

probably possible to avoid contamination at this site but the project will need to work around monitoring wells that will be in the way and will need to avoid digging or pile-driving.

EDR Site 128-8 APN 001-0160-011 “Harbor Sand & Gravel” in ARS Reach B is now the site of an asphalt concrete recycling company. The company has blocked the levee road with a gate and is encroaching on the levee including the wet side with piles of recyclable pavement materials and structures (see photo in Appendix D).

EDR Site 156-11 is a former manufactured gas plant, Pacific Gas & Electric Sacramento Site, which produced gas from raw materials such as coal and petroleum from 1873 to 1930 and was demolished in 1961 (there is a second such site located “south of the western end of Broadway”). The site is located between the Sacramento River levee and Front Street. Residuals of the manufactured gas process include lampblack, tar, total petroleum hydrocarbons (TPH), and spent oxides. Contaminants associated with these residues have been detected in soil and groundwater beneath the Site. The primary COCs in both soil and groundwater are benzene, toluene, ethylbenzene and total xylenes (BTEX), and polycyclic aromatic hydrocarbons (PAHs) including naphthalene. The major benzene plume is located in the north eastern area of the site, while a small separate plume exists at the foot of the levee in the central western part of the site based on monitoring results from May 2008 (DTSC 2011).

Numerous remedial investigations, soil removal actions, and many years of groundwater extraction and treatment have been conducted at the Site. Remedial activities to date include: capping of the PG&E property with a geosynthetic clay liner, soil excavations, operation of a soil vapor extraction treatment system, and operation of a groundwater evapotranspiration system (GWETs). Currently, the site is paved to control soil migration and exposure. The Ranney Collector was decommissioned in 2009, thus necessitating a remedy modification. Soil stabilization/solidification, by the addition of Portland Cement and Activated carbon to the areas where the highest contamination is found in the vadose zone, has been selected as the remedial action. Any future construction work would be impacted by the presence of this plume and monitoring system.

9.2 Type 2 Sites

Several sites were visited during site reconnaissance and downgraded from a preliminary classification as “Type 1” to a final classification of Type 2 or 3 based on avoidability. They are discussed here. ***Sites determined from map reconnaissance and records review to be Type 2 and Type 3 sites without site reconnaissance are not discussed.*** Most of the sites discussed here are contaminated properties adjacent to or near to the levee that are unlikely to affect levee improvements so long as the properties are avoided.

EDR Site 158-11 is a vacant parcel owned by the Sacramento Municipal Utility District that is located at the intersection of Front and T Streets with the Sacramento River and levee to the west and the Interstate 5 Highway to the east. EDR 158-11 is located on the other side of Front Street, across from EDR 156-11. The site’s historical uses include vehicle maintenance, fueling, and storage. This site was discovered during the groundwater investigation of EDR Site 156-11. The investigation revealed that the site consisted of a source of contaminants that were

migrating to the groundwater. The potential site contaminants of concern are polynuclear aromatic hydrocarbons (PAHs) from diesel fuel, total petroleum hydrocarbons as gasoline (TPH-Gas), and volatile organics (VOCs). The source of contamination was removed in 1999 by excavating 4,290 tons of contaminated soil and disposing of it off-site. A seasonal soil vapor extraction system (SVETs) operated at the site from November 1999 to May 2007. The SVETs is estimated to have captured and treated 34 pounds of reactive organic compounds and 13 pounds of benzene from the vadose zone. Groundwater monitoring continues to occur on site. The site relies on the EDR Site 156-11 GWETs to remove residual amounts of site contaminants. The California Department of Toxic Substances Control (DTSC) certified that all appropriate remedial actions have been completed in April 2008. However, DTSC also recorded land use controls requiring that the operation and maintenance of the GWETs and associated monitoring wells continue and prohibiting certain uses of the site. Any future construction work should avoid this area (DTSC 2010a).

EDR Site 98-7 Sacramento APN 001-011-003 Shell station in ARS Reach C/D on the Sacramento River south of the American River is a monitored leaking UST across the street from another gasoline station that abuts the levee but does not reach it.

EDR Site 99-8 APN 001-0070-036 in ARS Reach C, Martin Sprocket & Gear. The site is adjacent to the levee along with a few other such properties. The presence of a cluster of three monitoring wells in the levee, probably due to a petroleum release at the Lovotti Brothers site at 1275Vine St, is noted here but unlikely to affect erosion control measures.

EDR Site 128-8 Sacramento APN 001-0170-018 in ARS Reach B is the Sacramento City Landfill, now known as the Sutter's Landing Regional Park (Appendix D). This will have a minor impact on erosion control measures for the Project. The landfill uses the levee as a cap so that the landfill crown is topographically above the road on the levee crown. Stormwater drains from the landfill cap penetrate the levee that will need to be avoided. Landfill gas extraction wells are in or next to the levee but if working properly present no problem. The Kinder Morgan petroleum pipeline parallels the Union Pacific Tracks through most of Placer and Sacramento Counties, but the presence of the landfill between the levee and the tracks at this location means they have buried the pipeline at the toe of the levee on the water side at this location. There is no documented petroleum release from the pipeline in this location, but there is such a site in old North Sacramento across the river. It should be feasible to place riprap on the levee at this location, but care must be taken to avoid landfill features such as the storm water drains and the buried pipeline.

EDR Site 133-8 APN 001-0160-013 the Scollan or "Old Sac Landfill" in ARS Reach B is mentioned here because it is an old, unregulated and un-engineered landfill abutting the levee. An on-line aerial photo in Google Map™ appears to show a cap being placed on the landfill. No leachate collection system or landfill gas collection system are visible.

EDR Site 69-8 Sacramento APN 275-0111-006 Continental Chemical and EDR Site APN 275-0112-005 Micheletti Property in ARN Reach B/N along the Natomas Main Drainage Canal are minor groundwater release sites with petroleum and chlorinated solvents. The issue is that there are several more such documented and monitored release sites in close proximity in

this old industrial area in old North Sacramento. There is also a release site immediately adjacent to the levee at EDR Site 69-8, APN 275-0111-001. Due to the close proximity of many contaminated industrial sites and two such properties adjacent to the levee, the project would likely need to ensure that levee improvements would not adversely impact groundwater contaminant plume migration at this location.

1920 Front St - Sacramento Housing and Redevelopment Agency Site: The site was once a lumberyard. A leaking UST and waste from the adjacent manufactured gas plant were found on the property. The property was razed to create a parking lot that caps residual soil waste and has land use controls. A concrete wall 3 feet high separates the parking lot from the levee. A few empty waste drums remain on site. The State of California had a Ranney Well by the river used by the California Department of General Services to provide cooling water for downtown State office buildings. The well was destroyed in 2009.

2000 Front St – PG&E Former Manufactured Gas Plant Site: The site has been razed and paved over. It is located on the dry side of the levee. Land use restrictions are in place. The site is fenced and requires permission from PG&E to access. 40 hour OSHA Hazwoper training is required for access. The site is being remediated by Arcadis with deep soil mixing for soil stabilization/solidification. Remediation may be complete by November. The site is adjacent to the “Boat Section” of Interstate 5 which is lower than the River and actively de-watered. The property must be avoided.

Additional sites were categorized as Type 2 based on record screening without site visit. A summary can be found in Table 3. Type 3 sites are found in Appendix B.

10.0 Conclusions

A Phase 1 Environmental Site Assessment was performed in accordance with the scope and limitations of ASTM E 1527-05 and USACE ER 1165-2-132 for the American River Common Features GRR project. Any exceptions to, or deletions from, these practices have been outlined within the report. There are many contaminated properties adjacent to the levees on the dry side that are considered to be avoidable due to the nature of the contamination or the nature of the work proposed on the levees. This assessment has identified sites with recognized and probably unavoidable environmental conditions at the locations shown in Table 4 below.

Table 4 - Sites with Recognized Environmental Conditions

Site Name	Reach	EDR #	APN	Issue
Old Bryte Landfill	Sacramento Bypass	79-6	042-280-011	Lead in soil,
Southern Pacific Rail Yard	ARS Reach D Sacramento River	120-7	002-0010-049 002-0010-023 002-0010-054	CVOC, TPH Groundwater Plume, land use restrictions
Full Stop Mini Mart	ARN Reach N Arcade Creek	41-5	251-0292-016	TPHg plume at levee bridge crossing with air sparging
Robertson/Harbor Sand & Gravel	ARS Reach B American River	92-8 128-8	001-0160-011	Levee Encroachment, recycled pavement
Old North Sacramento	ARN Reach B/N Natomas Main Drainage Canal	69-8	275-0111-001	CVOC, TPH Groundwater Plumes adjacent to levee, multiple properties
TOSCO Corp./ Conoco-Phillips Sacramento Terminal	ARS_D	174-11	009-0030-054 009-0012-071 009-0012-072	Petroleum release site on dry side of the levee. Petroleum pipelines pass through the levee.
TOSCO Corp. Conoco-Phillips Sacramento Terminal	ARS_D	174-11	009-0020-001	Petroleum release site on wet side of the levee

The historical land uses of the region may also contribute to residual contamination of the entire project area with agricultural fertilizers, herbicides, and pesticides as well as arsenic and mercury from mining operations in the region. Additional sampling will be required during subsequent investigations to determine if project areas have been impacted by these historical contaminants.

On-line records are limited. For contaminated sites identified as unavoidable under the alternatives considered by the American River Common Features GRR, a public records review is recommended at the Central Valley Regional Water Quality Control Board office and the Sacramento Regional Office of the Department of Toxic Substances Control as the next step to determine if additional investigation is required to determine the impact of these sites on the project. Current groundwater plume maps and environmental liens / deed restrictions incorporating land use controls are particularly needed. Emphasis is needed on the Sacramento

Terminal bulk fuel handling facility, the old Southern Pacific rail yard, and the old Bryte landfill as these may affect alternative selection.

Due to the GRR process being a parent project that identifies the need for future actions, a Phase 1 ESA will need to be performed again, either at the appropriate GRR phase planning milestone, or at the beginning of actual construction activity. The subsequent Phase 1 ESA(s) will investigate if new sites have emerged and if existing sites still pose a threat to planned construction.

11.0 References

American Society for Testing and Materials, 2005. Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process
http://www.astm.org/cgi-bin/SoftCart.exe/STORE/filtrexx40.cgi?U+mystore+rbui8820+L+E1527:05+usr6/htdocs/astm.org/DATABASE.CART/REDLINE_PAGES/E1527.htm

Central Valley Regional Water Quality Control Board 2012, Request To Remove Soil Vapor Extraction System, Former Tidewater Fuel Terminal, 66 Broadway, Sacramento, Sacramento County
http://geotracker.waterboards.ca.gov/regulators/deliverable_documents/3349491715/6-18-12%20Tosco%2066%20Broadway%20SVE%20system.pdf

Central Valley Regional Water Quality Control Board 2012, Project Status, Former Rawson/Mckesson Drug Facility, 2189 Acoma Street, Sacramento, Sacramento County
http://geotracker.waterboards.ca.gov/regulators/deliverable_documents/8501235783/26%20June%202012%20-%20Staff%20Letter.pdf

DTSC, 2010. Site Screening Assessment Old Bryte Landfill. April 21.
http://www.envirostor.dtsc.ca.gov/regulators/deliverable_documents/9086042106/Old%20Bryte%20Landfill%20Approved%20Site%20Screen.pdf

ELM Consultants, 1993: Magpie Creek Toxic Reconnaissance Report

Full Stop Minimart (T0606701131) 3200 RIO LINDA BLVD Rio Linda, CA
http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T06067011313

Sacramento County 1985, American River Parkway Plan
<http://www.msa2.saccounty.net/parks/Documents/1985-ARPP.pdf>
<http://www.msa2.saccounty.net/parks/Pages/ParkwayPlan.aspx>

Sacramento County Historical Society 2006, Flooding in the Sacramento Valley: A Seething and Boiling Force that Threatens The Monuments of Our Enterprise, Sacramento History Journal Volume VI, No. 1-4, by James E. Henley
http://www.sachistoricalociety.org/journal_VI.cfm

Sacramento County Historical Society 2006, Levee Troubles: The Cost of Making the Sacramento Valley into an Agricultural Giant, Sacramento History Journal Volume VI, No. 1-4, Karen M. O'Neill
http://www.sachistoricalociety.org/journal_VI.cfm

Sacramento County Historical Society 2006, From Swampland to Farmland: Reclamation and Irrigation in the Natomas Basin , Sacramento History Journal Volume VI, No. 1-4,
http://www.sachistoricalsociety.org/journal_VI.cfm

Sacramento Regional County Sanitation District 2007, Sanitary Sewer Overflow Response Plan for SRCSD Interceptor System

USACE 1991, American River Watershed Investigation, California Feasibility Report Part II EIS/EIR Chapter 5 Hazardous and Toxic Waste

USACE, 1992. Water Resources Policies and Authorities: Hazardous, Toxic, and Radioactive Waste (HTRW) Guidance for Civil Works Projects, ER 1165-2-132
<http://www.usace.army.mil/publications/eng-regs/er1165-2-132/toc.htm>

USACE 1992, Policy Guidance Letter 34, Non-CERCLA Regulated Contaminated Materials at Civil Works Projects
<http://planning.usace.army.mil/toolbox/library/PGL/pgl34.pdf>

USACE 1995: Magpie Creek Draft Detailed Project Report and Draft Environmental Impact Statement/Environmental Impact Report - Chapter 5.10: Hazardous Materials/Waste

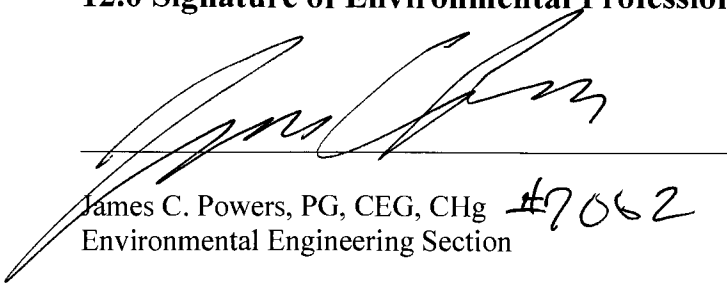
USACE 1996, American River Watershed Project, California, Part II Final SEIS/EIR Chapter 4 Affected Environment: Hazardous, Toxic and Radiological Waste Sites

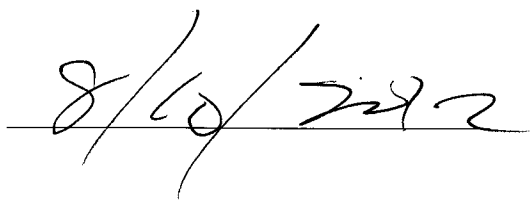
USACE, 2004: Supplemental Report to the April 1996 Final Detailed Project Report and Environmental Assessment on Magpie Creek: Enclosures

USACE 2004: Draft Supplemental Report to the section 205 Final Detailed Project Report and Environmental Assessment on Magpie Creek

USACE 2008, Environmental Site Assessment (Phase I), Common Features General Reevaluation Report Project, Sacramento, California, November 12, 2008

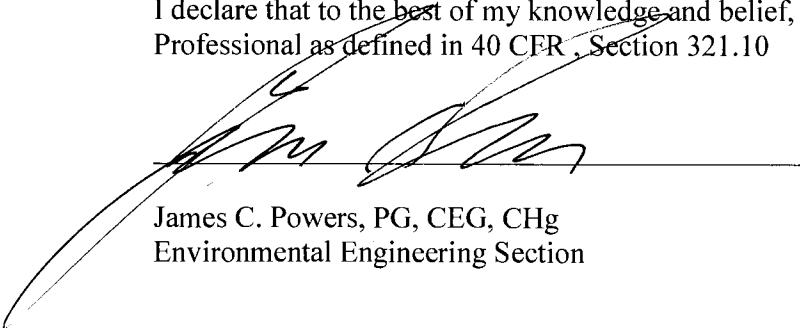
12.0 Signature of Environmental Professional

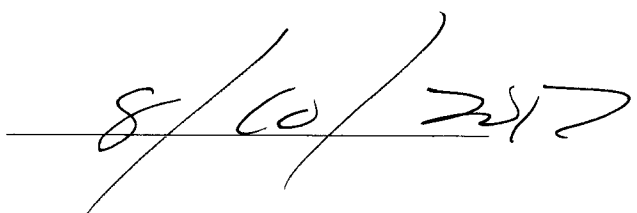

James C. Powers, PG, CEG, CHg #7062
Environmental Engineering Section



13.0 Qualifications of Environmental Professional

I declare that to the best of my knowledge and belief, I meet the definition of Environmental Professional as defined in 40 CFR, Section 321.10


James C. Powers, PG, CEG, CHg
Environmental Engineering Section



FIGURES

Figure 1 American River Common Features GRR Levee Reaches and Project Area

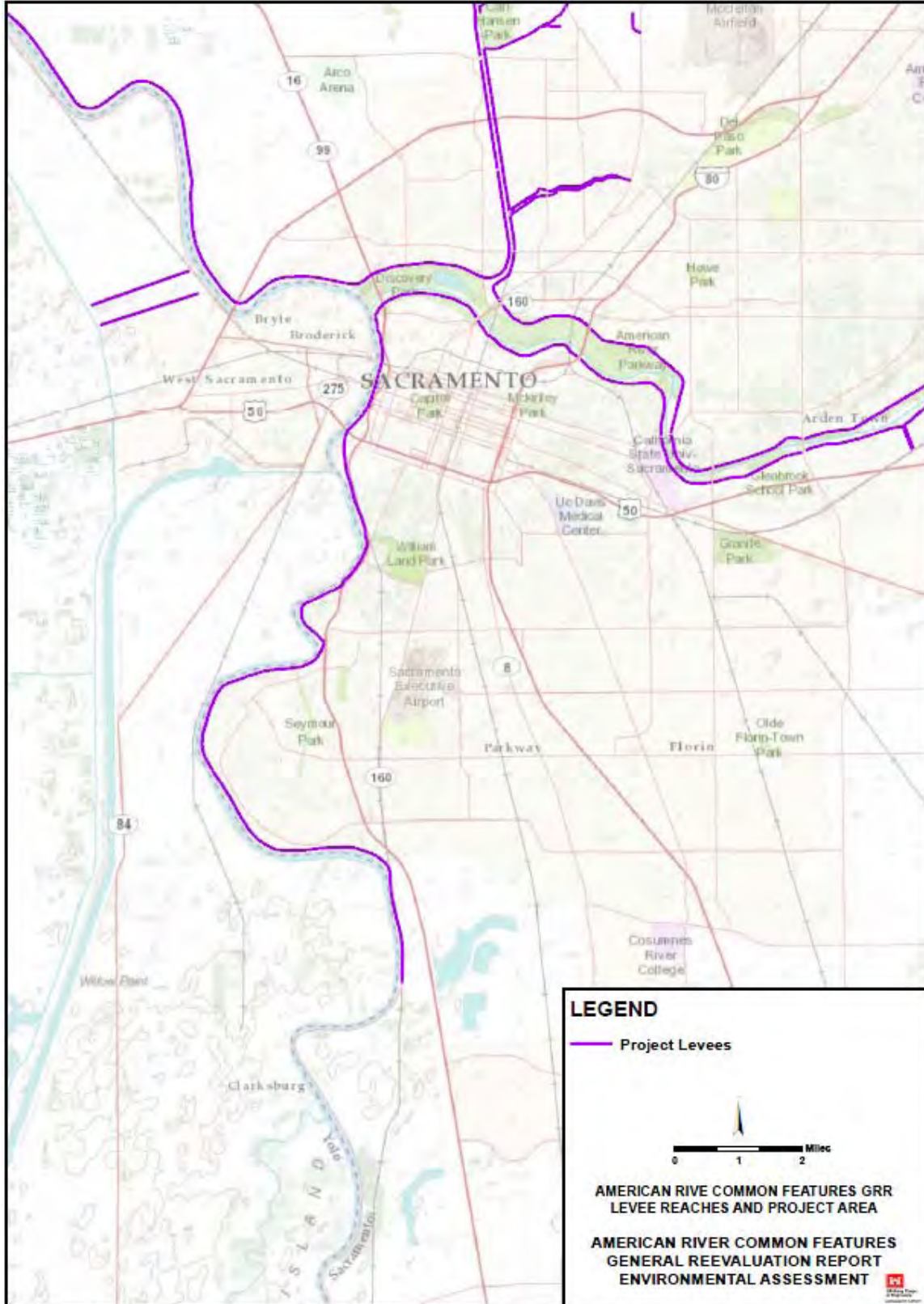
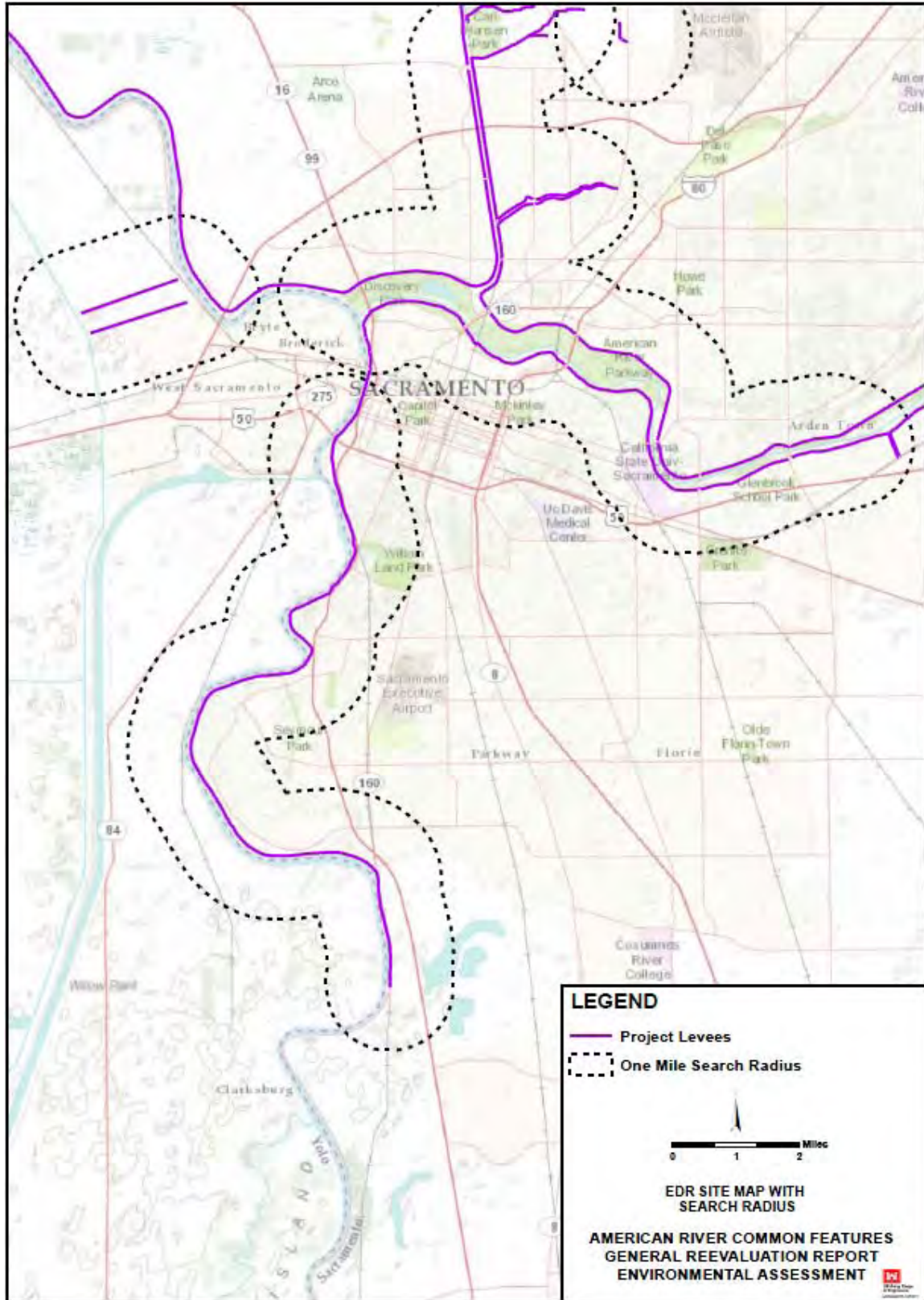
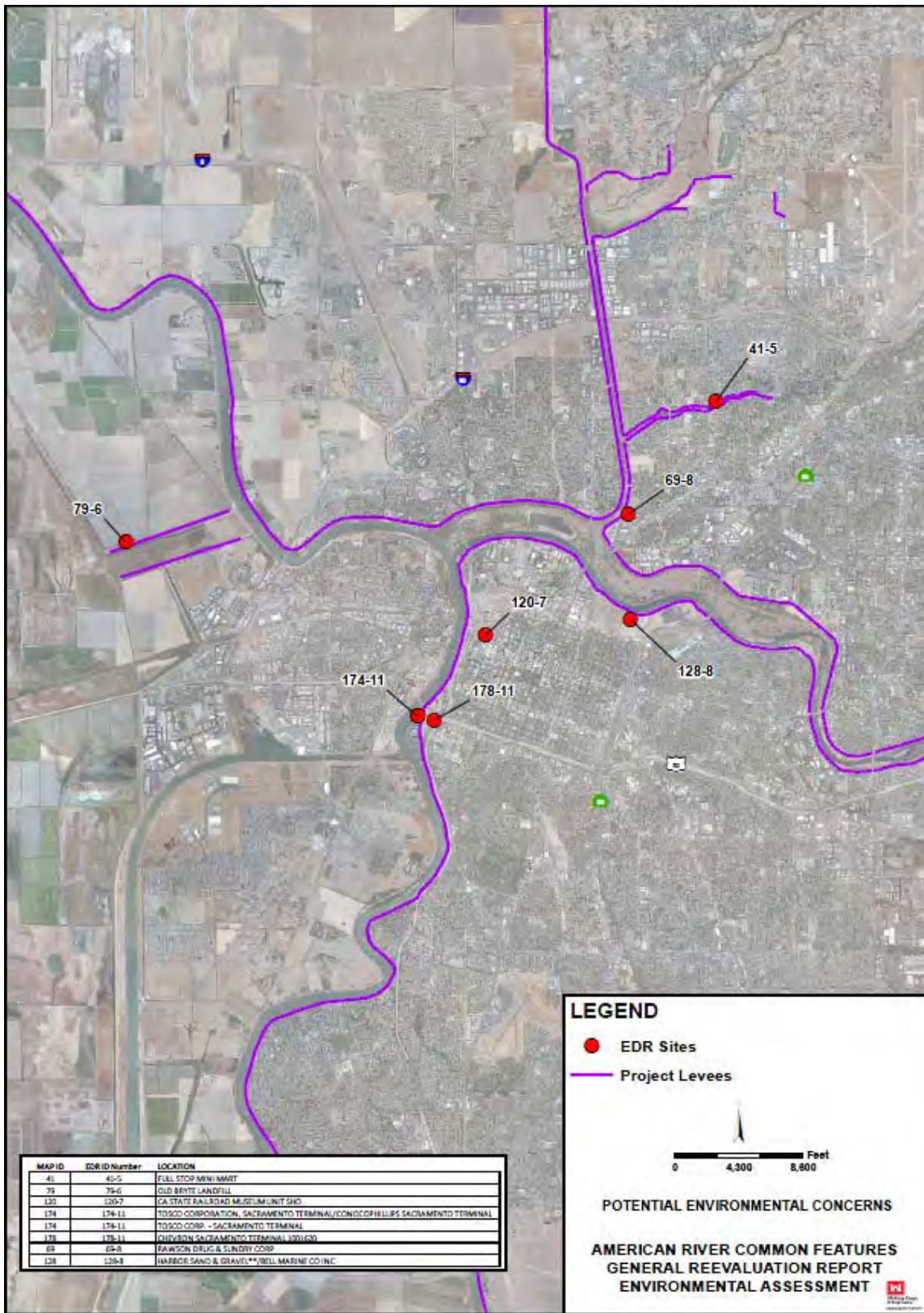


Figure 2 EDR Site Map with Search Radius



DATE: 8/16/12
FILE: \\ARCT\CP\proj\user\ch\ch\workspace\Site\Common\Features\GRR\Map\Project\Map\Fig02\124201_Fig02Map.mxd

Figure 3 Potential Environmental HTRW Concerns



DATE: 8/15/2012
 FILE: \\NCS\1\CS\proj\1211\AMERICAN_RIVER_COMMON_FEATURES_GRR_PHASE_1\FIGURES\FIGURE_3_POTENTIAL_ENVIRONMENTAL_CONCERNS_FINAL_PDF\MAP3.DWG