DRAFT

FINDING OF NO SIGNIFICANT IMPACT

U.S. DEPARTMENT OF AGRICULTURE – AGRICULTURAL RESEARCH SERVICE
CONSTRUCTION OF THE AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER FACILITY AT 3031 2ND STREET, DAVIS, CALIFORNIA

Introduction

The U.S. Department of Agriculture – Agricultural Research Service (USDA-ARS) has prepared an Environmental Assessment (EA) pursuant to the National Environmental Policy Act in order that it may assess and consider the environmental impacts of constructing an approximately 66,000 square foot (SF) Laboratory and Office Facility (the Project or the Facility). The Project would support various USDA-ARS research unit operations and the Location Administrative Office Support Staff. The Project would be located at 3031 Second Street in Davis, California.

The National Environmental Policy Act (NEPA) of 1969, as amended, requires all Federal agencies to give appropriate consideration to potential environmental effects of proposed major actions in planning and decision-making. The Council on Environmental Quality (CEQ) is responsible for issuing regulations (40 Code of Federal Regulations [CFR] 1500 et seq.) and implementing the provisions of NEPA. CEQ regulations in turn are supplemented by procedures adopted on an agency-specific basis. The USDA-ARS regulations are 7 CFR 520-Procedures for Implementing National Environmental Policy Act and 7 CFR 1b-National Environmental Policy Act. The ARS Facilities Design Standards in ARS-242.1 Section 1.3 - Compliance with NEPA was also followed. The EA was developed pursuant to these regulations and standards. The EA dated Click or tap to enter a date. is incorporated herein by reference.

Description of the Proposed Action and Alternatives

Proposed Action.

Only one Action Alternative was considered in the EA, which is referred to as the Proposed Action. The Proposed Action is to construct a Facility in Davis, CA, that consists of an approximately 66,000 SF Laboratory and Office Facility to support various research unit operations and the Location Administration Office Support Staff. The purpose of the Proposed Action is to better serve the expanding research and development needs of the USDA-ARS by providing modern and spacious facilities. The Proposed Action is needed by the USDA-ARS as the occupied facilities at University of California, Davis (UC Davis) campus are outdated and confining. The lack of space and appropriate technology limits the research potential for multi-disciplinary endeavors. New facilities would effectively unify and expand the collaborative effort between Federal, State, and local researchers.

The Proposed Action would address the Project purpose and need by providing USDA-ARS additional and modernized laboratory, office, administrative, and technical support space to better support research and development needs.

Alternatives Considered.

In addition to the Proposed Action, the USDA-ARS considered the No Action Alternative. Existing, outdated facilities would continue to be leased from UC Davis. USDA-ARS would be subject to potential lease conditions and termination should UC Davis move forward with plans to reacquire their laboratory and office space currently occupied by USDA-ARS research units co-located on campus. Staffing would need to be maintained at current levels, preventing future growth. The Crops Pathology and Genetics Research Unit and National Clonal Germplasm Repository are imbedded in seven different university buildings. The Sustainable Agricultural Water System Research Unit is located on 1.5 acres of leased land. The Invasive Species and Pollinator Health Research Unit occupy offices on campus, and eight acres of leased land on the Agriculture Experiment Station. The No Action Alternative would prevent the expansion of the USDA-ARS research and development capabilities, as well as hinder the collaborative scientific process due to the scattered arrangement of currently leased buildings.

The renovation and/or rehabilitation of existing facilities was considered but eliminated because it did not fully meet the needs of the Project. Existing laboratories no longer meet research requirements and require renovation for highly specific scientific protocols and procedures. Most occupied buildings cannot be expanded due to restrictive locations surrounded by existing campus facilities. Even if all seven individual buildings and multiple off-campus worksites were renovated, the fragmented arrangement of USDA-ARS facilities scattered around the UC Davis Campus would continue to hinder the scientific process. Therefore, renovation/rehabilitation of existing facilities would not meet the Project purpose and need, and the alternative was not carried forward.

During conceptual design, an alternate floor plan was considered for the Facility, referred to as Option 1. Option 1 provided a two-story, U-shaped footprint with private and open offices on the extreme north and south facades, and centralized support lab spaces and open lab spaces facing a central courtyard. The double-wing approach would provide a shallower building depth but a less efficient configuration resulting in longer travel times throughout the building. The USDA research leaders disapproved of the configuration primarily due to the lack of natural light in individual offices. The floorplan did not meet the requirements of the users. For these reasons, the alternative was eliminated and not carried forward in this EA.

Environmental Assessment

The evaluation of environmental aspects and consequences associated with the Proposed Action are fully described in the EA. The EA identified environmental resources that could be affected by the Proposed Action, and evaluated the significance of the impacts, if any, to each of the resources (Table 1). The EA evaluated possible effects related to air quality, water resources, cultural resources, threatened and endangered species, sole source aquifers, hazardous material and waste activities, soils and subsurface conditions, wetlands, utility use, noise, transportation, public health and safety, socioeconomic conditions and environmental justice.

With the implementation of following mitigating actions, best management practices (BMPs), and regulatory requirements, applied during and after the project development, there will be no significant environmental impacts related to the Proposed Action.

Table 1: Summary of Potential Effects of Proposed Action

	Resource	Resource unaffected by action	Insignificant effects due to mitigation
A	Wind or water caused soil erosion	☐	☒
B	Soil surface stability	☐	☒
C	Sole source aquifer quality	☒	☐
D	Aquifer yield or water rights	☒	☐
E	Aquatic life	☒	☐
F	Flow variation in stream or spring	☒	☐
G	Aesthetic properties of ground or surface waters	☒	☐
H	Chemical quality of ground or surface waters	☐	☒
I	Physical quality of ground or surface waters	☐	☒
J	Odors released to air or water	☐	☒
K	Toxic substance release to the air	☒	☐
L	Release particulate matter to the air	☐	☒
M	Meteorological conditions or air movement	☒	☐
N	Release substances for which a NAAQS[1] exists	☐	☒
O	Natural areas or wild and scenic river	☒	☐
P	Game animals or fish	☒	☐
Q	Rare, threatened or endangered species	☒	☐
R	Species balance	☒	☐
S	Special hazards	☒	☐
T	Wetland, floodplain or coastal zone	☒	☐
U	Cultural, historical or archaeological site	☒	☐
V	Local or regional systems	☐	☒
W	Local land use	☐	☒
X	Socioeconomic	☒	☐
Y	Noise levels	☐	☒
Z	Public health and safety	☒	☐
AA	Public controversy	☒	☐
BB	Climate change	☒	☐
CC	Energy usage	☐	☒

[1] *NAAQS* National Ambient Air Quality Standard*

Mitigating Actions Enacted or Planned

The following is a summary of mitigation commitments.

(A) Soil Erosion and (B) Soil Surface Stability

A Project-specific Stormwater Pollution Prevention Plan (SWPPP) to describe the BMPs to be implemented during construction would be prepared for the Project as part of the submittals for the Construction General Permit (CGP) from the State Water Resources Control Board. The SWPPP would include appropriate BMPs to properly manage and minimize soil erosion by

temporarily stabilizing exposed soils and controlling sedimentation. No discharge of pollutants from vehicle and equipment cleaning would be allowed into any storm drains or watercourses. Spill containment kits would be maintained onsite at all times during construction operations.

Disturbance will be limited to that necessary for the construction of the Facility. Once Project construction is completed, all disturbed ground surfaces that have not been converted to impervious surface (i.e. building, parking areas, sidewalks, pavement), would be revegetated to stabilize the parcel. Permanent erosion control measures such as bio-filtration strips and swales to receive storm water discharges from paved or impervious surfaces would be incorporated into the design and construction of the Project. The site drainage design at a minimum will meet Federal, State of California, and City of Davis stormwater quantity and quality requirements.

(H) Chemical Quality of Ground or Surface Waters

A Project-specific SWPPP to describe the BMPs to be implemented during construction would be prepared for the Project. A spill response plan would be prepared for construction activities as part of the SWPPP. BMPs outlined in the SWPPP would prevent, to the extent practicable, minor spills or releases of hazardous materials to stormwater, the ground, or local drains that could contribute to degraded water quality. If a spill were to occur, it would be cleaned promptly by trained personnel, reported to the appropriate agencies, and disposed of in accordance with local, State, and Federal policies. The design for the Facility includes stormwater detention basins that would provide stormwater control during construction and operations.

Phase I and Phase II Environmental Site Assessments were performed from 2019-2021 and concluded there was no potential for exposure of contaminants during construction. The active construction site will have restricted access and regular monitoring to ensure compliance with the SWPPP and prevent accidental spills which could affect ground water quality. During operations, the Facility would participate in the Hazardous Materials Business Plan program, which includes spill response planning, to prevent or minimize harm to public health and the environment from a release or threatened release of a hazardous material.

(I) Physical Quality of Ground or Surface Waters

A Project-specific SWPPP to describe the BMPs to be implemented during construction would be prepared for the Project. The SWPPP would include approved components to reduce erosion, suspended solids, turbidity, and downstream sedimentation that may degrade water quality and adversely impact aquatic life. Graded areas would be protected from erosion using a combination of silt fences, fiber rolls, etc. along toes of slopes or along edges of designated staging areas, and erosion control netting (such as jute or coir) on sloped areas. Refueling and equipment maintenance would occur at a minimum of 50 feet from any aquatic habitat, culvert, or drainage feature.

The design for the Facility includes stormwater detention basins that would provide stormwater control during construction and operations. The Facility design may also include features, such as permeable pavers and rain gardens, which would allow water to permeate the soil onsite. The site drainage design at a minimum will meet Federal requirements defined by the Energy Independence Security Act of 2007 (EISA), State law, and City of Davis stormwater quantity and quality requirements. Section 438 of the EISA requires the Project to maintain predevelopment hydrology and prevent net increase in stormwater runoff for the design storm event. The design storm event

is the 95th percentile rainfall depth and is based on 24-hour rainfall depth. Post-construction rate, volume, duration, and temperature of runoff must not exceed pre-development rates.

(J) Odors or Release of Odoriferous Substances
Contractors will be required to turn off vehicles and equipment when not in use to reduce emissions odors from idling. Substances used during construction of the Project that may create odors, such as paints, solvents, adhesives, etc., will be used according to the manufacturer's guidelines.

(L) (N) Particulate Matter / National Ambient Air Quality Standards
Contractors will be required to comply with Yolo Solano Air Quality Management District mitigation measures for construction dust as outlined in the Handbook for Assessing and Mitigation Air Quality Impacts (2007). All driveways, sidewalks, and parking lots shall be paved as soon as possible during construction to prevent fugitive dust.

The following fugitive dust mitigation measures will be implemented during construction:

- Water the construction site daily based on type of operation, soil, and wind exposure.
- Cover trucks hauling soil or other loose materials.
- Plant vegetative ground cover in disturbed areas as soon as possible.
- Cover inactive storage piles.
- Sweep streets if visible soil material is carried out from the construction site.
- Treat accesses to a distance of 100 feet from the paved road with a 6- to 12-inch layer of wood chips, gravel or mulch.
- Suspend excavation and grading activities if wind speeds exceed 25 mph.
- Display notices including contact information for any dust complaints in a conspicuous manner, such as on construction site fences.

The following mitigation measures will be implemented by contractors regarding construction equipment exhaust mitigation and other emission sources:

- Construction vehicles and/or equipment will comply with the California Air Resources Board's (CARB) In-Use Off-Road Diesel-Fueled Fleets Regulation. Construction vehicles will use a CARB Tier 3 engine when feasible.
- Maintain vehicles in good working order and turn off vehicles and equipment when inactive. Limit idling of vehicles to no more than five minutes.
- Employ equipment and power tools that are powered by electric or natural gas engines.
- Use reformulated and emulsified fuels, if feasible.
- Use diesel oxidation catalysts and/or catalyzed diesel particulate traps on diesel equipment.
- Limit vehicle speeds to 15 miles per hour onsite.
- Recommend carpooling to the Project to reduce number of vehicles onsite.

(V) Local or Regional Systems
(1) Transportation
Construction activities will primarily be scheduled during daytime hours. Contractors will coordinate proper construction signage near the Project as necessary to make drivers aware of the potential for increased hazards associated with construction vehicles. Appropriate changes to signaling, signage, and parking will be instituted once the Facility begins operations.

(2) Local or Regional Water Supply
Contractors will coordinate with the City of Davis to minimize any impacts to local water systems. USDA-ARS will obtain the proper permits to connect to existing municipal water infrastructure in the area. The Facility is being designed to Leadership in Energy and Environmental Design (LEED) V4 Silver standards to help minimize its carbon footprint. As such, it will have the following water-saving features incorporated into its design: low flow restroom lavatories, urinals, water closets, and showers (if included in the final design).

(3) Local or Regional Power and Heating
Contractors will coordinate with PG&E when working at the service entrance to minimize risk of damage and/or injury to construction workers. USDA-ARS will coordinate with PG&E and the City of Davis to obtain the proper permits required to connect to the existing electric infrastructure.

The Facility is being designed to LEED V4 Silver standards to increase energy efficiency, therefore minimizing the Facility's load on the system. Overall, the LEED framework provides for healthy, highly efficient, and cost saving green buildings. Buildings designed to LEED standards, have been found to consume 25 percent less energy on average (Fowler et al., 2011). The Facility will evaluate enrolling in Valley Clean Energy's (VCE's) program to utilize more renewable energy sources for its power needs. This will assist the USDA-ARS in meeting the requirements of the 2021 Executive Order 14057 *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability* of net-zero emissions building portfolio by 2045 and net-zero emissions from overall federal operations by 2050.

(4) Local or Regional Solid Waste Management
All solid waste, including recycling, will be disposed of properly according to Federal, state, and local regulations.

(5) Local or Regional Sewer or Storm Drainage
Debris from the construction site will be properly disposed of so that they do not interfere with runoff to storm drains. USDA-ARS will coordinate with the City of Davis to obtain the proper permits required to connect to the existing sewer infrastructure. Stormwater onsite would be directed to stormwater detention basins where water would infiltrate soil. The Facility design may also include features, such as also includes permeable pavers and rain gardens, which would allow water to permeate the soil onsite.

(W) Local Land Use (3) Aesthetics
USDA will direct its contractors to minimize disturbance to vegetation and soil during Project construction. During construction, work areas would be maintained in an orderly manner and trash and construction debris removed. Following construction activities, disturbed areas would be restored and revegetated. Native landscaping is planned for the areas surrounding the Facility and would complement the overall aesthetic of the Facility. The Facility is being designed for consistency with aesthetic qualities of the surrounding commercial/industrial areas.

(Y) Noise
Construction activities will be scheduled between 7:00 am and 7:00 pm on Mondays through Fridays, and between the hours of 8:00 am and 8:00 pm on Saturdays and Sundays, per Section

24.02.040 of the Davis Municipal Code. The following mitigation measure shall be implemented by contractors during construction, if applicable:

- Maintain vehicles in good working order and turn off vehicles and equipment when not in use. Limit idling of vehicles to no more than five minutes at any location.
- Use properly functioning mufflers on appropriate machinery.
- Provide written notice to residents and businesses within 1,000 feet of the construction zone, advising them of the estimated construction schedule. This written notice will be provided at least one week prior to the start of construction.
- Display notices with information including the contact telephone number(s) and proposed construction dates and times in a conspicuous manner, such as on construction site fences.
- A noise disturbance coordinator will be identified who would promptly respond to noise complaint calls and monitor noise and construction activity.
- Local regulations would be followed to prevent noise exceedance beyond accepted decibel ranges when working near residential areas or near other sensitive receptors.
- Employ equipment that is powered by electric or natural gas engines, as opposed to those powered by gasoline fuel or diesel, when feasible.

(CC) Energy Usage / Alternative Energy

The Facility is being designed to LEED V4 Silver standards to help minimize its carbon footprint. As such, it will have the following energy-saving features incorporated into its design: high efficiency boilers, LED lighting, and unoccupied air change rate turn down. A high efficiency chiller, exhaust air heat recovery system, automated building controls, enhanced building envelope, and onsite photovoltaic and solar hot water heating will be evaluated for potential for use at the Facility. Additionally, the Facility intends to enroll in the VCE program, which will allow the Facility to increase the amount of renewable energy (wind and solar) that is being used for their needs to levels above what is currently available from PG&E.

Commitment to Implementation

The USDA-ARS affirms their commitment to implement the measures for the mitigations and BMPs listed above which are the same as those listed in Section 4.2 of the EA.
Implementation is dependent on funding. The USDA-ARS will provide that adequate funds are requested in future years' budgets to achieve the goals and objectives set forth in the EA, and to fund the mitigation commitments described in the EA.

Public Review and Comment

The EA was available for a 10-day public review and comment period following publication of a public notice in the Davis Enterprise and the California Aggie on January 5, 2022. The Public Comment Period began on January 5, 2022 and concluded on January 18, 2022. During this period, the EA was available for the public to download and review from the following U.S. Army Corps of Engineers (USACE) website:
https://www.spk.usace.army.mil/media/usace-project-public-notices/

The public was invited to submit written comments on the EA during the 10-day public review period to Ms. Keleigh Duey, U.S. Army Corps of Engineers, Sacramento District, Planning

Division 10th floor, 1325 J Street, Sacramento, California, 95814, or via email to Keleigh.L.Duey@usace.army.mil, 916-557-5131. A total of _(number)_ comments were received on the EA during the public comment period. USDA-ARS has considered these comments in this Finding of No Significant Impact (FONSI).

FINDING OF NO SIGNIFICANT IMPACT

After careful review of the EA, I have concluded that implementation of the Proposed Action will not generate significant controversy or have a significant impact on the quality of the human or natural environment. Per 7 CFR § 520, the Draft EA and FONSI were made available for a 10-day public review and comment period. Therefore, as evidenced by my signature below, I determine that the Proposed Action will have no significant impacts and the action will be implemented. This analysis fulfills the requirements of NEPA and the CEQ regulations. An Environmental Impact Statement will not be prepared, and the USDA-ARS is issuing this FONSI.

John Dyer
Acting Director, Pacific West Area
USDA Agricultural Research Service

Signature:

Date:

Environmental Assessment for the USDA – ARS Research and Development Center

U.S. Department of Agriculture – Agricultural Research Service

USDA – ARS Research and Development Center Facility
Contract Number: W912DQ-21-D-4009
Interagency Agreement No. 6001019745-15
Davis, California

1/5/2022

Environmental Assessment for the USDA – ARS Research and Development Center

U.S. Department of Agriculture – Agricultural Research Service
USDA – ARS Research and Development Center Facility
Davis, California

1/5/2022

TABLE OF CONTENTS

Page No.

LIST OF TABLES

Page No.

LIST OF FIGURES

Page No.

LIST OF ABBREVIATIONS

Abbreviation	Term/Phrase/Name
ABA	Architectural Barriers Act
ADA	American with Disabilities Act
APE	Area of Potential Effects
ASTM	American Society for Testing and Materials
BCC	Birds of Conservation Concern
BGEPA	Bald and Golden Eagle Protection Act
Burns & McDonnell	Burns & McDonnell Engineering Company, Inc.
BMPs	best management practices
CAA	Clean Air Act
CARB	California Air Resources Board
CCAA	California Clean Air Act
CGP	Construction General Permit
CNRA	California Natural Resources Agency
CO	carbon monoxide
CPGRU	Crops Pathology and Genetics Research Unit
DHS	Department of Homeland Security
EA	environmental assessment
EISA	Energy Independence and Security Act of 2007
EPA	U.S. Environmental Protection Agency
Facility	USDA-ARS Research and Development Center Facility
GHGs	greenhouse gases
HMBP	Hazardous Materials Business Plan

Abbreviation	Term/Phrase/Name
IFC	International Fire Code
IPaC	Information for Planning and Consultation
ISPHRU	Invasive Species and Pollinator Health Research Unit
LEED	Leadership in Energy and Environmental Design
LLRW	Low-Level Radioactive Waste
MAQ	Maximum Allowable Quantity
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standard
NCGR	National Clonal Germplasm Repository
NFPA	National Fire Protection Association
NO_x	nitrogen oxides
NO_2	Nitrogen dioxide
NPS	National Park Service
PM	particulate matter
PM_{10}	particulate matter 10 microns in diameter or less
$PM_{2.5}$	particulate matter 2.5 microns in diameter or less
REC	Recognized Environmental Condition
RWQCB	Regional Water Quality Control Board
SAWSRU	Sustainable Agricultural Water Systems Research Unit
Section 106	Section 106 of the National Historic Preservation Act of 1966
SF	Square Foot
SHPO	State Historic Preservation Officer
SO_2	sulfur dioxide
SVAB	Sacramento Valley Air Basin

Abbreviation	Term/Phrase/Name
SWPPP	Stormwater Pollution Prevention Plan
UC Davis	University of California-Davis
USACE	United States Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USDA-ARS	U.S. Department of Agriculture – Agricultural Research Service
VCE	Valley Clean Energy
VELB	Valley elderberry longhorn beetle
VOCs	volatile organic compounds
YSAQMD	Yolo-Solano Air Quality Management District

1.0 OBJECTIVE OF PROPOSED ACTION

The U.S. Department of Agriculture – Agricultural Research Service (USDA-ARS) is in the process of performing an environmental assessment (EA) pursuant to the National Environmental Policy Act (NEPA) in order that it may assess and consider the environmental impacts of constructing an Agricultural Research and Development Center Facility at Davis, California (Project). This EA describes the alternatives evaluated, the affected environment, potential environmental consequences, a recommended alternative, and mitigation measures for the Project.

The Agricultural Research and Development Center Facility (also referred to as the Proposed Action or Project) will consist of an approximately 66,000 square foot (SF) Laboratory and Office Facility (the Facility). The Project would support various USDA-ARS research unit operations and the Location Administrative Office Support Staff. The Project would be located at 3031 Second Street in Davis, California (see Figure 1-1) and be located adjacent to the existing greenhouses facilities.

The U.S. Army Corps of Engineers, Sacramento District (USACE) under Interagency Agreement No. 6001019745-15, with USDA-ARS, is assisting with the environmental compliance (NEPA), design and construction of the Facility. The Project is subject to NEPA, as amended (42 U.S. Code [U.S.C.] § 4321 et seq.), the Council on Environmental Quality's NEPA implementing regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508), and USDA-ARS' NEPA implementing regulations, Environmental Policies and Procedures (7 CFR 1b; 7 CFR 520).

1.1 Project Background

USDA-ARS currently conducts a variety of valuable research activities on University of California-Davis (UC Davis) leased land and/or in UC Davis buildings. USDA-ARS has determined the existing facilities are inadequate to meet USDA-ARS' research needs due to existing facility conditions. Existing facilities do not include adequate space for essential green houses, growth chambers, constant temperature and cold rooms, storage, and shop space. Additional office, administration, and support space are also required to continue ongoing critical research of the various research units when staffed at optimal capacity. UC Davis has indicated its desire to reacquire their laboratory and office space currently occupied by USDA-ARS research units co-located on campus. The USDA-ARS research units that are included in this Project are: Crops Pathology and Genetics Research Unit (CPGRU), the National Clonal Germplasm Repository (NCGR), the Sustainable Agricultural Water Systems Research Unit (SAWSRU), and the Davis-based portion of the Invasive Species and Pollinator Health Research Unit (ISPHRU).

Currently, the CPGRU and the NCGR research units are imbedded in seven different university buildings represented by six different academic departments (USACE, 2021a). The SAWSRU is currently located on 1.5 acres of leased land. ISPHRU scientists currently occupy two offices in Robbins Hall and two cubicles in Briggs Hall, which are provided by the university to accommodate four scientists. The Aquatic Weed worksite is approximately eight acres of leased land on the UC Davis' Agricultural Experiment Station to the west of the campus. The field facility has three offices for technicians, two separate laboratories with wet and general lab spaces, weighing room, analytical room and general laboratory space, and separate areas for equipment and herbicide storage, and two greenhouses/outdoor spaces for culture of aquatic and riparian plants. The Pollinator Health worksite is also on leased land, occupying approximately one-third of an acre near the Aquatic Weed worksite. The Pollinator Health worksite consists of four 52'x 8' x 8' mobile buildings that serve as the laboratory and office space for the scientific staff.

USDA-ARS plans to acquire a partially developed parcel adjacent to the UC Davis campus and facilities. The parcel is approximately 6.56 acres and was previously owned by Calgene/Monsanto, who built and maintained agriculture/biotech facilities, including greenhouses and related research and development support buildings from 1980 to summer 2018. The northeastern corner of the parcel contains these existing facilities on 25,000 SF. These facilities include nine greenhouses, headhouse, growth chamber, and support buildings (see Figure 1-2). However, the existing buildings do not provide the modernized facilities required to support the anticipated USDA-ARS research unit operations. The remainder of the parcel is undeveloped grass field, approximately 3.5 acres of which would be used for the construction of the Project. The existing driveway on Second Street for the existing facilities would be used for the Project. The average slope of the site is approximately two percent from east to west. The Facility would be directly served by new connections to the existing water and sewer lines in the area.

The new proposed Facility would be constructed on the currently undeveloped area of the parcel. The Project would provide a building with various state-of-the-art laboratories, including supporting equipment, cold and instrument rooms, science support areas with autoclave, plant and soils processing areas, and chemical storage. The building would also contain offices, collaborative areas, such as conference rooms, lunchroom, training room, and logistical areas.

An EA for the land acquisition of the parcel was prepared in July 2021 to address the potential environmental impacts, beneficial or adverse, that may result from the transfer of 3031 Second Street, Davis, CA, from UC Davis to the USDA-ARS (USACE, 2021a). The Land Acquisition EA found the

land acquisition will not have impacts to resources and therefore does not require mitigation measures (USACE, 2021a). A Finding of No Significant Impact (FONSI) was issued by USDA-ARS in July 2021.

1.2 Purpose and Need

The purpose of the Proposed Action is to better serve the expanding research and development needs of the USDA-ARS by providing modern and spacious facilities. The Proposed Action is needed by the USDA-ARS as the occupied facilities at UC Davis campus are outdated and confining. The lack of space and appropriate technology limits the research potential for multi-disciplinary endeavors. New facilities would effectively unify and expand the collaborative effort between Federal, state, and local researchers.

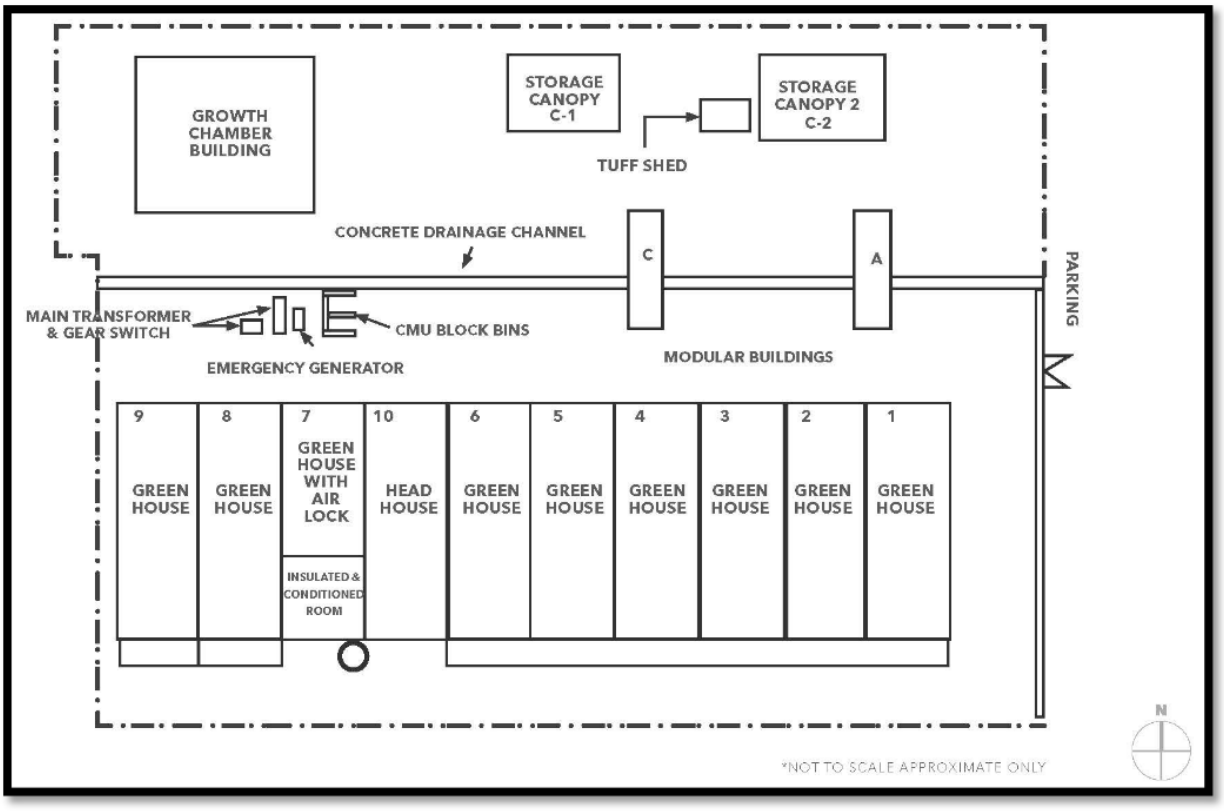
This Construction EA fulfills the USDA-ARS NEPA requirements by analyzing potential impacts to the human environment associated with the construction of a new facility. The previous Land Acquisition EA fulfilled the NEPA requirements for the land acquisition (USACE, 2021a). However, it only partially fulfilled the requirements for full development of the research facility. This Construction EA provides an analysis of potential effects associated with the construction of the research facility on the parcel and serves to fulfill the NEPA requirements for the Project.

1.3 Scope of Proposed Action

The Proposed Action is to construct additional and modernized facilities to support USDA-ARS collaborative research with UC Davis. The facility would consist of an approximately 66,000 SF Laboratory and Office Facility to support various USDA-ARS research unit operations and the Location Administration Office Support Staff in Davis, California. The Project would provide a building with various state-of-the-art laboratories, including supporting equipment, cold, and instrument rooms, science support areas with autoclave, plant and soils processing areas, and chemical storage. The building would hold offices, collaborative areas, such as conference rooms, lunchroom, training room, and logistical areas. To accomplish this goal, the FY 2020 Consolidated Appropriation Act included $76.4 million to design and build a facility to accommodate USDA-ARS staff, scientists, and location administrative support personnel currently in UC Davis facilities.

Figure 1-1: Project Location

Figure 1-2: Site Plan of Existing Facilities



2.0 DESCRIPTION OF ALTERNATIVES

The following sections describe the No Action Alternative and Action Alternative. These alternatives are evaluated in Chapter 3 of this EA.

2.1 No Action Alternative

Under the No Action Alternative, the Facility would not be constructed on the acquired property. Existing, outdated facilities would continue to be leased from UC Davis and utilized by USDA-ARS research units. USDA-ARS would be subject to potential lease conditions and termination should UC Davis move forward with plans to reacquire their laboratory and office space currently occupied by USDA-ARS research units co-located on campus. Staffing would need to be maintained at current levels, preventing future growth.

2.2 Action Alternative (Proposed Action)

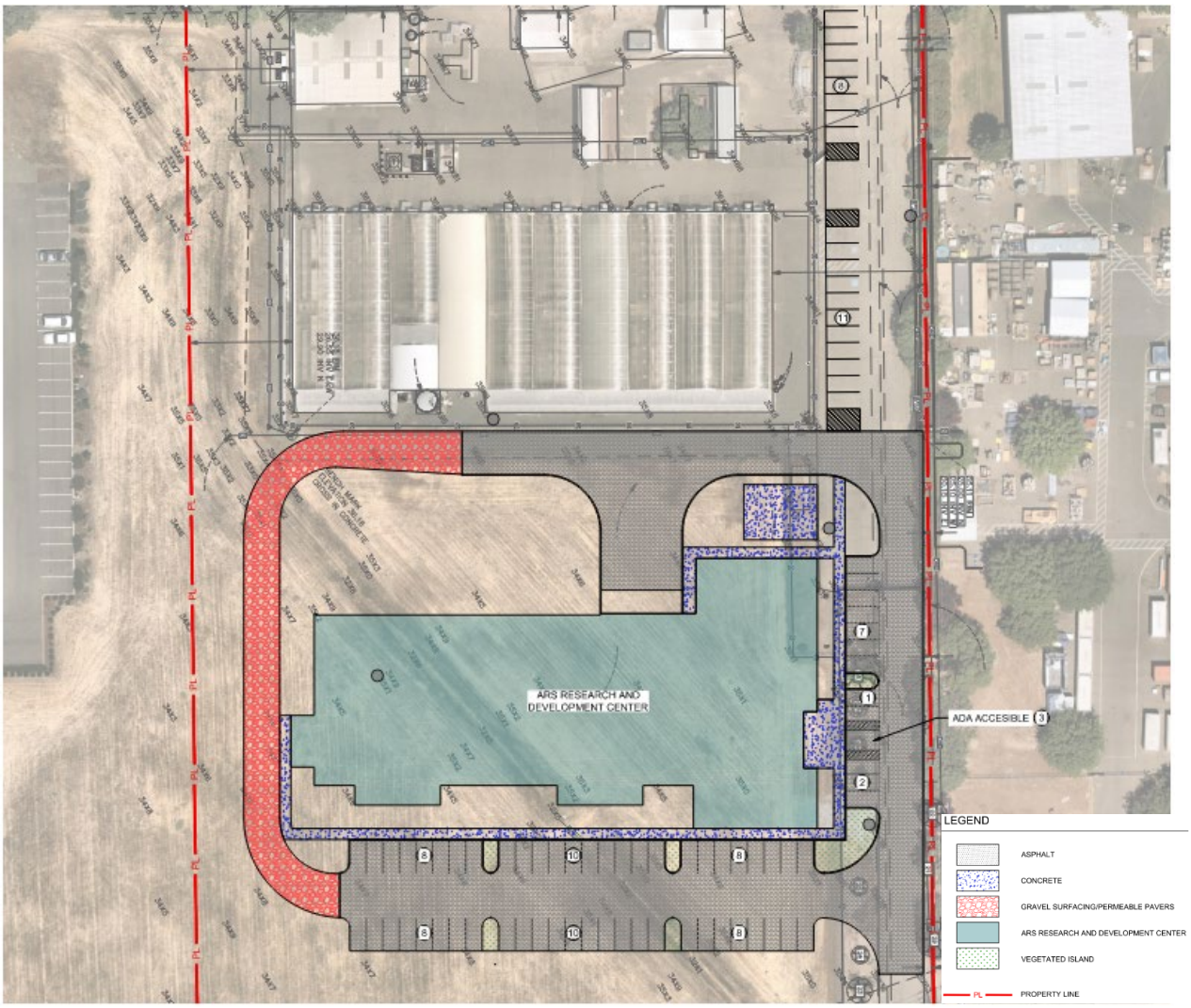
Only one Action Alternative is considered in this EA, which is referred to as the Proposed Action.

The Proposed Action is to expand the existing operation by constructing a new Facility that consists of an approximately 66,000 SF Laboratory and Office Facility to support various research unit operations and the Location Administration Office Support Staff. The new Facility configuration provides a two-story, linear footprint. The building interior would consist of private and open offices aligning the south façade, supporting lab spaces in the center, and open lab spaces facing the north façade. This allows full use of exterior walls and natural lighting. Scientist support, collaboration spaces, and building support are located at the east end along with the main entry. Primary features of the Proposed Action are as follows:

- Flexibility and agility are achieved by maximizing open office workstation space, limiting private offices and combining lab functions into shared larger and expansive lab spaces.
- Laboratory support spaces are centrally located with direct access from the laboratories and offices spaces.
- Office spaces and occupied laboratories are positioned on the exterior walls allowing direct natural light into the spaces.

The site of the Proposed Action is located at 3031 Second Street, Davis, CA 95618 with total land area of approximately 6.56 acres. The northern portion of the site includes existing greenhouse and supporting infrastructure. The existing facilities are planned to remain with the proposed facility and supporting infrastructure to be located south of the existing facilities in a mostly undeveloped portion of the site. See Figure 2-1 below for site layout.

Figure 2-1: Overall Site Plan



The parcel is currently zoned P-D#4-88 Light Industrial/Business Park Subarea. The yard requirements for this zone are a 25-foot front yard, 25-foot rear yard, and 20-foot side yard relative to the lot lines, per City of Davis code or ordinances (2021a).

The following features will be included in the Facility:

- **Access Drives**. Proposed access drives will be a minimum of 20-feet throughout the Facility to support emergency vehicle access in accordance with California Fire Code. Drive aisles in parking areas are to be 24-feet wide when supporting 2-way traffic and 90-degree parking stalls. Paved surfaces will be a combination of asphalt pavement and permeable pavers/aggregate surfacing.

- **Onsite parking.** Onsite parking will be provided for USDA employees and government-owned vehicles. Sixty-five (65) new parking spaces are anticipated. There are approximately nineteen (19) spaces adjacent to the existing greenhouses in the northeast portion of the site, which combines with the proposed Facility to provide eighty-four (84) total parking spaces. Parking spaces are to be 9-feet wide by 18-feet deep per City of Davis Municipal Code. Existing parking facilities and sidewalks are to remain with reconfiguration, as necessary.
- **Sidewalks and accessible ramps.** Sidewalks and accessible ramps will be incorporated to accommodate pedestrian movement from the parking area and adjacent facilities throughout the site. Proposed parking facilities, sidewalks, and building entrances will be designed in accordance with Architectural Barriers Act (ABA) and American with Disabilities Act (ADA) requirements.
- **Loading and unloading area**. A loading and unloading area will be provided near the Facility loading dock. Access to the loading/unloading area will be designed to accommodate a 40-foot box truck. Direct access from the loading/unloading area to the building loading dock will be provided to support forklift movements.
    - New asphalt pavement and Portland cement concrete for vehicular areas will be designed to meet HS-20 vehicle loading.
    - A dumpster pad will be included in the loading and unloading area. The dumpster location will be convenient to the Facility users as well as the trash trucks for pickup.
- **Onsite drainage.** Design will maintain positive drainage away from building.
    - The exterior finish grade around the Facility is set to be typically 6-inches below the facility finish floor, with exception to the finish floor elevations required at doorways and overhead door entrances into the facility. Door stoops or ramps will be provided for all personnel doors. All exterior pavements will be sloped to drain away from the building to the stormwater detention basins.
    - Proposed site improvements will maintain existing drainage paths to the extent possible. The Stormwater design at a minimum will meet Energy Independence and Security Act of 2007 (EISA) Section 438 and City of Davis stormwater quantity and quality requirements.
    - All storm drainage structures, and piping networks will be sized per City of Davis requirements. The minimum pipe size for the storm drainage piping will be 12-inches and 8-inches for roof drain collectors.

The USDA-ARS research units that are potentially included in this Project and would utilize the Facility are: CPGRU, NCGR, SAWSRU, and the Davis-based portion of the ISPHRU. It is anticipated

approximately 97 USDA staff members would report to the new Facility: 39 CPGRU, 14 NCGR, 29 SAWSRU, 12 ISPHRU, and 3 building and logical support staff.

Research units generally require office space, wet laboratory space, and field facilities such as equipment and vehicle storage, soil and plant processing areas, specialized plant growth areas, etc. Several units will retain existing field facilities currently owned by USDA or shared with UC Davis. New field facilities will generally not be provided within the new Facility unless they require immediate adjacency to wet laboratories.

The Facility will include offices, collaborative areas, such as conference rooms, lunchroom, and training room, various laboratories, including supporting equipment, cold and instrument rooms, science support areas with autoclave, plant and soils processing areas, chemical storage, and logistical areas. See conceptual Facility layouts in Figure 2-2 and Figure 2-3 below.

Construction of the Proposed Action is anticipated to be completed in 20 months, with site work beginning in early spring/March 2024 and building construction completing in March 2025. The preliminary construction schedule is included Table 2-1:

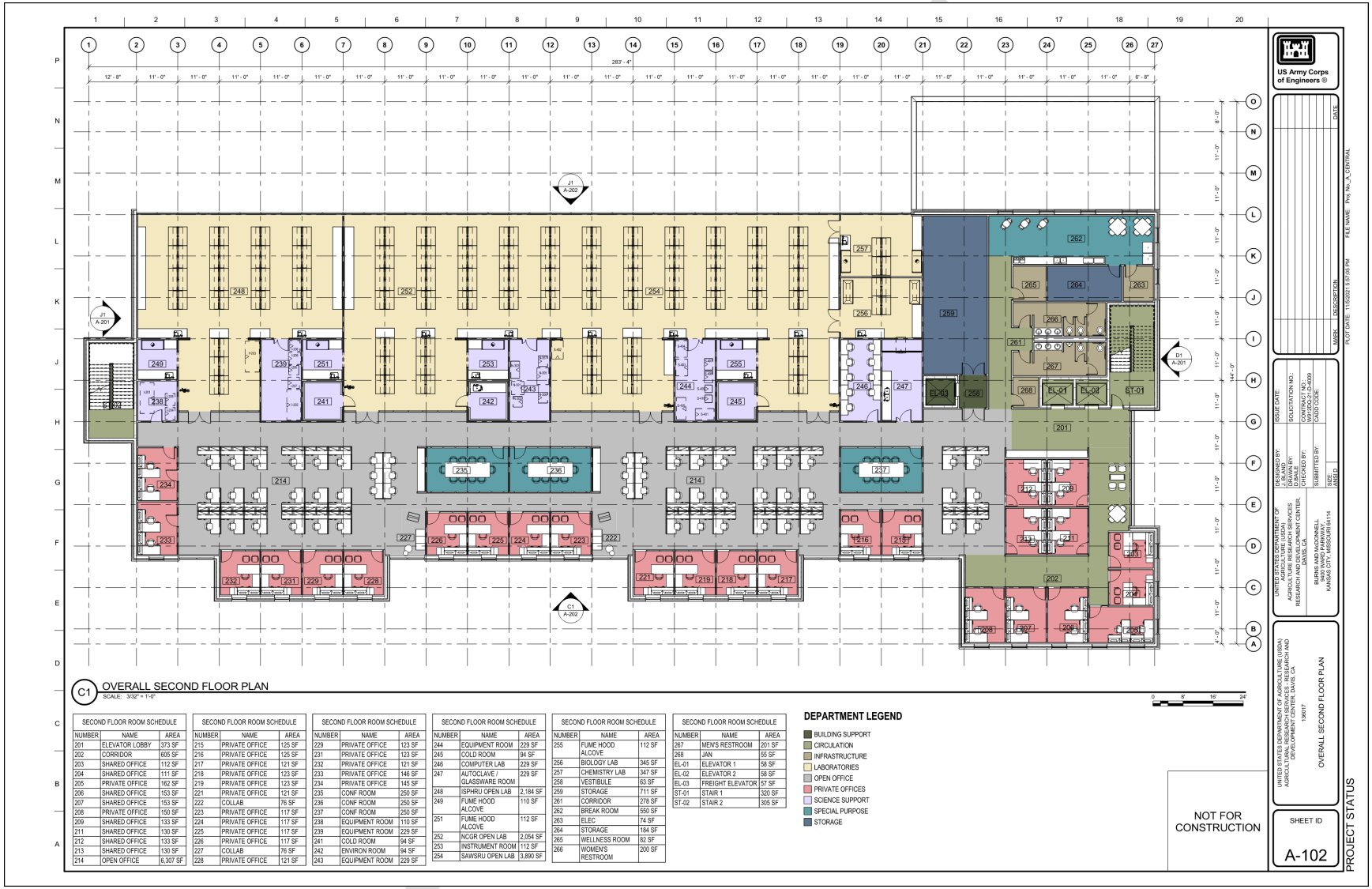
Table 2-1: Preliminary Construction Schedule

Construction Phase	Duration
Site Work	March 2024-April 2025
Foundations	May 2024-September 2024
Structural	July 2024-March 2025
Exterior Skin	December 2024-February 2025
First Floor	January 2025-November 2025
Second Floor	February 2025-November 2025

The anticipated construction equipment includes backhoes, one-ton pickup trucks, dump trucks, small trimmers, bulldozers, a concrete pumper truck, a small crane to place rebar cages, semi-trucks for delivery of supply materials, lifts, and a small bobcat grading vehicle. Construction related equipment and materials, such as vehicles and stockpiles, would be staged in a designated construction staging area located within the parcel.

Figure 2-2: Proposed Facility, Level 1

Figure 2-3: Proposed Facility, Level 2



SECOND FLOOR ROOM SCHEDULE		
NUMBER	NAME	AREA
201	ELEVATOR LOBBY	373 SF
202	CORRIDOR	605 SF
203	SHARED OFFICE	112 SF
204	SHARED OFFICE	111 SF
205	PRIVATE OFFICE	162 SF
206	SHARED OFFICE	153 SF
207	SHARED OFFICE	153 SF
208	PRIVATE OFFICE	150 SF
209	SHARED OFFICE	133 SF
211	SHARED OFFICE	130 SF
212	SHARED OFFICE	133 SF
213	SHARED OFFICE	130 SF
214	OPEN OFFICE	6,307 SF

SECOND FLOOR ROOM SCHEDULE		
NUMBER	NAME	AREA
215	PRIVATE OFFICE	125 SF
216	PRIVATE OFFICE	125 SF
217	PRIVATE OFFICE	121 SF
218	PRIVATE OFFICE	123 SF
219	PRIVATE OFFICE	123 SF
221	PRIVATE OFFICE	121 SF
222	COLLAB	76 SF
223	PRIVATE OFFICE	117 SF
224	PRIVATE OFFICE	117 SF
225	PRIVATE OFFICE	117 SF
226	PRIVATE OFFICE	117 SF
227	COLLAB	76 SF
228	PRIVATE OFFICE	121 SF

SECOND FLOOR ROOM SCHEDULE		
NUMBER	NAME	AREA
229	PRIVATE OFFICE	123 SF
231	PRIVATE OFFICE	123 SF
232	PRIVATE OFFICE	121 SF
233	PRIVATE OFFICE	146 SF
234	PRIVATE OFFICE	145 SF
235	CONF ROOM	250 SF
236	CONF ROOM	250 SF
237	CONF ROOM	250 SF
238	EQUIPMENT ROOM	110 SF
239	EQUIPMENT ROOM	229 SF
241	COLD ROOM	94 SF
242	ENVIRON ROOM	94 SF
243	EQUIPMENT ROOM	229 SF

SECOND FLOOR ROOM SCHEDULE		
NUMBER	NAME	AREA
244	EQUIPMENT ROOM	229 SF
245	COLD ROOM	94 SF
246	COMPUTER LAB	229 SF
247	AUTOCLAVE / GLASSWARE ROOM	229 SF
248	ISPHRU OPEN LAB	2,184 SF
249	FUME HOOD ALCOVE	110 SF
251	FUME HOOD ALCOVE	112 SF
252	NCGR OPEN LAB	2,054 SF
253	INSTRUMENT ROOM	112 SF
254	SAWSRU OPEN LAB	3,890 SF

SECOND FLOOR ROOM SCHEDULE		
NUMBER	NAME	AREA
255	FUME HOOD ALCOVE	112 SF
256	BIOLOGY LAB	345 SF
257	CHEMISTRY LAB	347 SF
258	VESTIBULE	63 SF
259	STORAGE	711 SF
261	CORRIDOR	278 SF
262	BREAK ROOM	550 SF
263	ELEC	74 SF
264	STORAGE	184 SF
265	WELLNESS ROOM	82 SF
266	WOMEN'S RESTROOM	200 SF

SECOND FLOOR ROOM SCHEDULE		
NUMBER	NAME	AREA
267	MEN'S RESTROOM	201 SF
268	JAN	55 SF
EL-01	ELEVATOR 1	58 SF
EL-02	ELEVATOR 2	58 SF
EL-03	FREIGHT ELEVATOR	57 SF
ST-01	STAIR 1	320 SF
ST-02	STAIR 2	305 SF

The description of the Proposed Action above is based on conceptual design and may be modified as the design process progresses. Modifications are not anticipated to be significant (e.g. are unlikely to modify the footprint of the Project onsite) or alter the evaluation performed in this Construction EA. If modifications are determined to be significant and alter the evaluation in this Construction EA, the document will be amended to reflect the Proposed Action.

The Proposed Action would address the Project purpose and need by providing USDA-ARS additional and modernized laboratory, office, administrative, and technical support space to better support research and development needs.

2.3 Alternatives Considered but Eliminated

A variety of alternatives were considered but ultimately did not fully meet the USDA-ARS needs. These alternatives included:

- Renovating and rehabilitating existing facilities
- U-shaped building footprint (Option 1)

The renovation and/or rehabilitation of existing facilities was considered but determined to have a high cost to benefit ratio. Existing labs no longer meet USDA-ARS research requirements and would need to be renovated for newly developed and highly specific scientific protocols and procedures. Additionally, some buildings cannot be expanded as they are in the center of the university and there is no additional surrounding space. For example, Robbins Hall, in the heart of campus on California and Shields Avenue, which contains the ISPHRU, is fully encompassed on all sides by existing facilities. Even if all the seven individual buildings and multiple off-campus worksites were renovated, the location of USDA-ARS facilities scattered around the UC Davis Campus would persist. This fragmented arrangement hinders the scientific process. Therefore, renovation/rehabilitation of existing facilities would not meet the Project purpose and need, and the alternative was not carried forward in this EA.

During conceptual design, an alternate floor plan was considered for the Facility, referred to as Option 1. Option 1 provided a two-story, U-shaped footprint. The layers of the building would include private and open offices on the north and south facades and work inward with centralized support lab spaces and open lab spaces facing a central courtyard. The double-wing approach would provide a shallower building depth but a less efficient configuration resulting in longer travel times throughout the building. The USDA research leaders disapproved of the configuration primarily due to the lack of natural light in individual offices. The floorplan did not meet the requirements of the users. For these reasons, the alternative was eliminated and not carried forward in this EA.

3.0 ENVIRONMENTAL CONDITIONS AND IMPACTS

3.1 NEPA Evaluation

The USDA-ARS Facilities Design Standards (Document ARS-242.1) provides guidance for assessing potential environmental impacts during the development of an EA (USDA-ARS, 2012). Section 1.3.3. of the USDA-ARS Facilities Design Standards document contains a list of 29 questions (A through CC) to first identify those resources potentially impacted by the Proposed Action and then to be considered in the EA. These questions are presented below with a corresponding response for the Project. Those resources that may be impacted by the Project are labeled as "Potentially" and will be described in further detail in Section 3.2. Resources that are not present within the parcel or Project footprint or not applicable will be labeled as such below. These resources will not be carried forward in Section 3.2.

This Draft EA and Finding of No Significant Impact (FONSI) will be circulated publicly for ten business days starting January 5, 2022 and ending January 18, 2022. The EA will be available electronically at https://www.spk.usace.army.mil/media/usace-project-public-notices/. Written comments can be directed at Keleigh.L.Duey@usace.army.mil, or mailed to Ms. Keleigh Duey, U.S. Army Corps of Engineers, Sacramento District, Planning Division 10th floor, 1325 J Street, Sacramento, California, 95814. Questions can be directed to (916) 557-5131. Any public comments received will included in Appendix D as a part of the official record. USACE is assisting the USDA-ARS with environmental compliance, design, and construction of the Facility.

Will proposed construction action:

A. Cause or contribute to soil erosion by wind or water?

- **Existing Conditions.** The parcel is comprised of annual grassland and ruderal vegetation, which is mowed regularly. The parcel does not contain any undisturbed natural areas. The topography is generally flat and stormwater currently is directed through the parcel's man-made drainage to a municipal storm sewer. The average slope of the parcel is approximately 2 percent from east to west. The surrounding land use is light commercial/industrial development.

  There are no active causes of soil erosion at the Site. The Site is currently vacant and any maintenance activities, such as driving or equipment operation, occur on paved or graveled areas. Mowing does occur on the Site, but does not contribute to soil erosion. The existing drainage ditch is gently sloped and vegetated, reducing soil erosion from water. There is no wind caused erosion on Site due to lack of bare ground and gently sloping topography.

- **Potentially.** Soils will be disturbed from general construction activities and subject to typical erosion factors. Soil disturbance would be limited to the construction footprint for the Facility and excavation and installation of utility service connections (water, electric, etc.). Best management practices (BMPs) associated with stormwater controls would typically reduce soil erosion and sedimentation prior to, during, and immediately following construction activities.

B. Affect soil surface stability?

- **Existing Conditions**. The parcel is comprised of annual grassland and ruderal vegetation, which is mowed regularly. There are no existing exposed soil piles in the parcel. Therefore, the parcel is considered to have a high level of soil stability.

- **Potentially.** Soils will be disturbed from general construction activities as noted previously and subject to typical surface instability. BMPs associated with stormwater controls would typically stabilize disturbed soil until sufficient vegetation re-growth occurs and permanent soil stabilization is achieved.

C. Degrade water quality in a sole source aquifer?

- **Existing Conditions**. There are no sole source aquifers in the general Project vicinity (U.S. Environmental Protection Agency [EPA], 2021b). The nearest sole source aquifer is approximately 140 miles southeast near Fresno, California.

- **Not Applicable.** As there are no sole source aquifers in the Project vicinity, the Proposed Action would not degrade water quality in a sole source aquifer.

D. Decrease aquifer yield or affect water rights?

- **Existing Conditions**. The Project area is within the Central Valley Aquifer System (USGS, 1995). The City of Davis uses groundwater for approximately 13 percent of its potable water supply. This water is pumped from aquifers that range from 200 feet to more than 1,700 feet below the ground surface (City of Davis, 2021b). There are no water rights on the parcel. The City of Davis has an easement on the east property line for a storm drain that runs from Second Street to Fifth Street (USACE, 2021a).

- **Not Applicable.** The Project will convert undeveloped land with permeable soils into impermeable surfaces on the parcel, such as the Facility and its parking lot. The Proposed Action

would not preclude precipitation from recharging typical groundwater conditions as stormwater onsite would be directed to stormwater detention basins where water would infiltrate soil. Overflow from the stormwater detention basins would be directed to municipal drains that currently receive stormwater from the parcel. The Facility design may also include features, such as permeable pavers and rain gardens, which would allow water to permeate the soil onsite. Additionally, undeveloped portions of the parcel will remain permeable and not prohibit precipitation from recharging typical groundwater conditions.

E. Affect aquatic life?

- **Existing Conditions**. There is a man-made drainage ditch that runs diagonally across the parcel (see Figure 1-1). Based on the wetland delineation conducted by Burns & McDonnell in September 2021 (Appendix B), an ephemeral drainage is located within the man-made ditch. It flows southeast through a culvert under a man-made berm before exiting the parcel into the municipal stormwater system. The ephemeral drainage only flows during, and for a short duration after precipitation events in a typical year and has a stream bed located above the water table year-round. The nearest known stream, Putah Creek, tributary of the Yolo Bypass and Sacramento River, is approximately 3,000 feet south of the parcel.

- **Not Applicable.** Based on the observed ephemeral drainage characteristics, it is unlikely to provide habitat for aquatic life. The USACE confirmed the ephemeral drainage onsite is a non-jurisdictional water defined under 33 CFR 328.3(b)(10) and 40 CFR 120.2(2)(x) on November 9, 2021 (Appendix B).

  The parcel is not hydrologically connected to Putah Creek; Second Street and Interstate-80, both running east-west, provide barriers. Based on this, it is not anticipated that the Proposed Action would impact Putah Creek. Therefore, the Proposed Action would not impact aquatic life.

F. Cause or contribute flow variation in a stream or spring?

- **Existing Conditions**. There are no streams or springs onsite. The water feature onsite was determined by the USACE to be an ephemeral drainage. The USACE also confirmed this man-made drainage is a non-jurisdictional water defined under 33 CFR 328.3(b)(10) and 40 CFR 120.2(2)(x) on November 9, 2021 (Appendix B). The nearest known stream, Putah Creek, is approximately 3,000 feet from the parcel.

- **Not Applicable.** The ephemeral drainage onsite will be partially filled for construction of the Facility and stormwater detention basins will be installed in various locations on the Site, which would modify its flow. The California Department of Fish and Wildlife (CDFW) (Region 2) confirmed via email that the ephemeral drainage would not be subject to Section 1602 et. Seq., indicating that based on the artificial construction of the channel, its lack of wetland/riparian habitat features, and its lack of connectivity with the surrounding streams, they do not believe a Notification of Lake or Streambed Alteration is necessary for the Project. After construction, stormwater onsite will be directed to the stormwater detention basins. However, these flow variations would not affect other waterways because the ephemeral drainage is not hydrologically connected to another known stream or spring. The flow of Putah Creek would not be impacted by the Proposed Action.

G. Degrade the aesthetic properties and/or potential uses of either ground or surface waters?

- **Existing Conditions**. There is a man-made drainage ditch onsite only flows during and for a short duration after precipitation events. The next nearest known surface waterbody, Putah Creek, is approximately 3,000 feet from the parcel. The depth to groundwater in the vicinity is approximately 15 feet.

- **Not Applicable.** The man-made drainage ditch onsite is not considered to have aesthetic properties or have potential uses given it intermittency. The flow of Putah Creek would not be impacted by the Proposed Action. Therefore, the Proposed Action would not degrade any aesthetic qualities of surface waters, nor would it impact the potential use of surface waters. The Proposed Action would not require a well or require excavations at a depth that would impact groundwater sources. The new Facility would be connected to public water provided by the City of Davis.

H. Affect chemical quality of ground or surface waters (pH, dissolved oxygen, nutrients, dissolved solids, pesticides, etc.)?

- **Existing Conditions**. See existing conditions under 3.1(G) above.

- **Potentially.** Surface waters onsite include an existing ephemeral drainage, which will be partially filled during construction, and future stormwater detention basins, which will be installed in various locations on the Site. The Proposed Action may temporarily impact the surface water chemistry onsite during active construction. Construction of the Proposed Action would require

construction equipment and materials which have the potential for spills and leaks, such as fuel from vehicles. The Proposed Action will include the construction of new impermeable surfaces, such as parking areas, where substances from vehicles could be introduced to runoff during rain events. These substances may affect the chemical quality of surface water at the parcel during operations. The next nearest known surface waterbody, Putah Creek, is approximately 3,000 feet from the parcel and flow would not be impacted by the Proposed Action. The Proposed Action would not require a well or require excavations at a depth that would impact groundwater sources and therefore, is unlikely to affect their chemical quality. It is anticipated that maximum excavation depth would be 10 feet and the depth to groundwater in the vicinity is approximately 15 feet.

I. Affect physical quality of ground or surface waters (suspended solids, turbidity, color, oil, temperature, etc.)?

- **Existing Conditions**. See existing conditions under 3.1(G) above.

- **Potentially.** Surface waters onsite include an existing ephemeral drainage, which will be partially filled during construction, and stormwater detention basins, which will be installed in various locations on the Site. The physical water qualities of the surface waters onsite may be affected by the Proposed Action through stormwater runoff from impervious surfaces during construction and operation of the Facility. The Proposed Action will include the construction of new impermeable surfaces, such as parking areas, where substances from vehicles could be introduced to runoff during rain events. These substances may affect the physical water quality of surface water onsite during operations. The next nearest known surface waterbody, Putah Creek, is approximately 3,000 feet from the parcel and flow would not be impacted by the Proposed Action. The Proposed Action would not require a well or require excavations at a depth that would impact groundwater sources and is unlikely to affect their physical water quality.

J. Cause odors or release odoriferous substances to air or water?

- **Existing Conditions**. The parcel is comprised of annual grassland and ruderal vegetation, which is mowed regularly. The surrounding land use is light commercial/industrial development. Odors in the area are primarily generated by emissions from vehicles on I-80 south of the parcel and the railroad that parallels I-80. Emissions odors could also occur from the emergency engine located at the existing facility, permitted under the University of California Agricultural & Natural Resources in the unlikely event it is operated.

- **Potentially.** Odors may be released during construction and operation of the Proposed Action. During construction, this may be due to activities such as equipment operation, welding and painting and during operation, due to infrequent standby generator use.

K. Release toxic substances to the air in quantities that could affect human health or safety, or environmental quality?

- **Existing Conditions**. Air toxics and hazard air pollutants are generated in the Project vicinity by vehicles and equipment on nearby roads and I-80.

- **Not Applicable.** Air toxics or hazard air pollutants would be generated during construction due to fossil fuel combustion in construction vehicles and equipment (EPA, 2018). The quantity released would not be substantial and would not affect human health or safety, or environmental quality. The Proposed Action would not emit toxic substances during operation or cause long-term affects to ambient air quality.

L. Release particulate matter to the air?

- **Existing Conditions**. The northeastern corner of the parcel contains existing facilities on 25,000 SF including nine greenhouses, headhouse, growth chamber, and support buildings (see Figure 1-2). These facilities do not currently release PM into the air. The Yolo-Solano Air Quality Management District (YSAQMD) noted during scoping that the emergency engine located at the existing facility is permitted under the University of California Agricultural & Natural Resources. Mowing of the site would periodically contribute minimal dust and emissions particulates to the site and surrounding area.

- **Potentially.** Dust and particulate matter may be generated during construction and from the operation of construction equipment. Particulate matter (PM) is a term for a mixture of solid particles and liquid droplets found in the air. PM may pose health risks. Mitigation measures will be implemented to minimize PM entering the air during construction.

M. Change local meteorological conditions or air movement patterns?

- **Existing Conditions**. The City of Davis has a “temperate Mediterranean” climate with light rain during mild winters and hot, dry summers. The Sacramento River Delta breeze helps cool temperatures at night during the summer (City of Davis, 2021c).

- **Not Applicable.** The Proposed Action is not of the magnitude or type of project that would be necessary to alter local meteorological conditions or air movement patterns.

N. Release substances for which there is a National Ambient Air Quality Standard (i.e., sulfur oxides, nitrogen oxides, carbon monoxide, lead, particulate matter, etc.)?

- **Existing Conditions**. Under the Clean Air Act (CAA), the Federal government established the NAAQS to protect public health, safety, and welfare from known or anticipated effects of eight pollutants: SO_2, particulate matter 10 microns in diameter or less (PM10), particulate matter 2.5 microns in diameter or less (PM2.5), CO, nitrogen dioxide (NO2), ozone, lead, and greenhouse gases (GHGs).

  The California Air Resources Board (CARB) is required to designate areas of the State as attainment, nonattainment, or unclassified for any State standard. An "attainment" designation for an area signifies that pollutant concentrations do not violate the standard for that pollutant in that area. A "nonattainment" designation indicates that a pollutant concentration violated the standard at least once. The county is in the Sacramento Federal Non-Attainment area for ozone and PM2.5. The City of Davis and Yolo County are in attainment areas for the other six pollutants, indicating that the region complies with Federal clean air standards for SO_2, PM10 (EPA, 2021).

  The Project is within the Sacramento Valley Air Basin (SVAB). The YSAQMD is responsible for implementing emissions standards and other requirements of Federal and State laws in the Project area. As required by the California Clean Air Act (CCAA), YSAQMD has published various air quality planning documents to address requirements to bring the SVAB into compliance with the Federal and State ambient air quality standards. The Air Quality Attainment Plans are incorporated into the State Implementation Plan, which is subsequently submitted to the EPA, the Federal agency that administrates the Federal Clean Air Act of 1970, as amended in 1990.

  The YSAQMD portion of the SVAB is currently in nonattainment for fine particulates (PM2.5) and ozone. Concentrations of all other pollutants meet State and Federal standards.

- **Potentially.** Substances regulated under the National Ambient Air Quality Standard (NAAQS) may be released during construction and operation of the Project. Carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen oxides (NO_x), volatile organic compounds (VOCs), and particulate matter (PM) may be emitted/generated by construction equipment onsite (gasoline/diesel engines), construction traffic along local roads, infrequent use of a standby generator onsite, and operation

of natural gas-powered domestic water heaters and heating boilers to serve the internal needs of the Facility.

O. Affect undisturbed natural areas or a wild and scenic river?

- **Existing Conditions**. There are no undisturbed natural areas or wild and scenic rivers near the parcel (National Wild and Scenic Rivers System, Nd). The nearest wild and scenic river is the Lower American River which is 12 miles from the parcel. The parcel does not contain any undisturbed natural areas. The surrounding land use is light commercial/industrial development. The parcel is comprised of annual grassland and ruderal vegetation, which is mowed regularly.

- **Not Applicable.** There would be no effect to undisturbed natural areas or wild and scenic rivers from the Proposed Action due to their absence on the parcel.

P. Affect game animals or fish or their taking?

- **Existing Conditions**. No water resources exist at the parcel that would support fish species. The ephemeral drainage only flows during and after precipitation events for a short time in a typical year and does not provide suitable fish habitat. Game animals are not known to dwell within or immediately adjacent to the parcel, especially with the adjacent I-80 corridor and surrounding land use (light commercial/industrial development). Also, hunting is not allowed and does not occur on the property.

- **Not Applicable.** The Proposed Action is not anticipated to affect game animals or fish due to their absence in the Project vicinity.

Q. Affect rare, threatened, or endangered species, or a critical habitat? (A consultation with U.S. Fish & Wildlife Service under Section 7 of the Endangered Species Act may be required).

- **Existing Conditions**. Table 3-1 below provides all the federally listed threatened and endangered species within Yolo County, California. A search of the parcel was performed using the CDFW RareFind tool, Yolo County Habitat County Habitat Conservancy listings, and the USFWS Environmental Conservation Online System (ECOS) tool. There are no rare, threatened, or endangered species, or critical habitat found on the parcel. A habitat assessment was performed by Burns & McDonnell in September 2021.

- **Not Applicable.** The parcel does not overlap with federally designated critical habitat. Based on the habitat assessment performed by Burns & McDonnell in September 2021, the Proposed Action is anticipated to have no effect on federally threatened and endangered species, their habitats, or proposed or designated critical habitat (Appendix C). Therefore, a consultation with U.S. Fish and Wildlife Service was not needed.

  A previous biological resources report found a small elderberry shrub complex consisting of two mature shrubs just outside the fence near the northwest corner of the property (ICF International [ICF], 2016). Elderberry shrubs are the obligate larval host plants of the valley elderberry longhorn beetle (VELB, *Desmocerus californicus dimorphus*), listed as threatened under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). During the September 2021 habitat assessment, the presence of two elderberry trees were confirmed adjacent to but outside of the parcel boundary, along the western fence line. No exit holes that would indicate presence of VELB were detected, and no elderberry trees/shrubs were identified within the parcel.

  The last recorded California Natural Diversity Database (CNDDB) occurrence of Burrowing Owl was in 2004 and was located directly outside the parcel, near the western parcel boundary. Burrowing Owl are protected under the Migratory Bird Treaty Act (MBTA) and included as Birds of Conservation Concern (BCC) by the USFWS (2008). Ground squirrel burrows can serve as suitable nesting and foraging habitat for burrowing owl. During the September 2021 habitat assessment, burrows were visually examined for signs of burrowing owl activity including whitewash, pellets, tracks, and feathers. No burrowing owls or signs of occupancy were detected in or adjacent to the parcel. This finding is consistent with previous biological surveys of the parcel, which found no burrowing owls or burrowing owl signs in or adjacent to the parcel. The 2019 survey also found no suitable nest trees for Swainson's hawk on the parcel, and few were available within 0.5 miles of the parcel (ICF, 2016 and 2019). Despite multiple negative surveys, nest surveys will be conducted prior to ground disturbance to ensure any potential burrows remain unoccupied.

  Bald and golden eagles are federally protected under the Bald and Golden Eagle Protection Act (BGEPA) but are unlikely to occur in or adjacent to the parcel. Bald and golden eagle foraging and nesting habitat was not documented during the 2021 habitat assessment.

Table 3-1: Federally Protected Species in Yolo County, CA

Species	Status	Typical Habitat	Potential Likelihood of Occurrence within Parcel Boundary
Tricolored Blackbird (*Agelaius tricolor*)	MBTA	Cropland/hedgerow, grassland, herbaceous/freshwater marshes of cattails, tule, bulrushes, and sedges	Unlikely to nest but may fly over the area
California Tiger Salamander (*Ambystoma californiense*)	Federal: Threatened	Grasslands and low foothills with pools or ponds necessary for breeding	None; no vernal pools or ponds are present
Golden Eagle (*Aquila chrysaetos*)	MBTA BGEPA	Open country, arctic to desert, including tundra, shrublands, grasslands, coniferous forests, farmland, and areas along rivers and streams	Unlikely to nest but may fly over the area or stop over if animal carcasses are present along roadways
Western Burrowing Owl (*Athene cunicularia hypugaea*)	MBTA BCC	Short vegetation and presence of fresh small mammal burrows/open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation	Possible; CNDDB occurrence near parcel (2004)
Conservancy Fairy Shrimp (*Branchinecta conservatio*)	Federal: Endangered	Large, clay-bottomed vernal pool playas with turbid water	None; no vernal pools or streams are present
Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)	Federal: Threatened	Herbaceous wetland, scrub-shrub wetland, temporary pool, bog/fen	None; no vernal pools or herbaceous wetlands present
Swainson's Hawk (*Buteo swainsoni*)	MBTA	Open pine-oak woodland and cultivated lands, desert, grassland/herbaceous, cropland/hedgerow, savanna, woodland	Unlikely to nest but may fly over the area
Western Snowy Plover (*Charadrius nivosus*)	Federal: Threatened MBTA	Sand/dune, playa/salt flat/dry mud or salt flats	Unlikely to nest but may fly over the area
Palmate-Bracted Bird's-Beak (*Chloropyron palmatum*)	Federal: Endangered	Seasonally-flooded, saline-alkali soils in lowland plains, primarily along the edges of channels and drainages	Unlikely; nearest USFWS documented occurrence is ~5 miles north, and site soils are not saline and only mildly to moderately alkaline

Species	Status	Typical Habitat	Potential Likelihood of Occurrence within Parcel Boundary
Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*)	Federal: Threatened MBTA	Dense stands of cottonwood and willow/riparian, forested wetland	Unlikely to nest but may fly over the area
Monarch Butterfly (*Danaus plexippus*)	Federal: Candidate for Listing	Open fields and meadows with milkweed, breeding only where milkweeds are found	Unlikely; no milkweed documented within parcel boundary but may occur in adjacent areas
Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)	Federal: Threatened	Riparian/shrubland/chaparral, woodland/hardwood	Unlikely; suitable habitat was identified adjacent to parcel boundary but is isolated from riparian corridor and outside area of disturbance for this Project
White Tailed Kite (*Elanus leucurus*)	MBTA	Cropland/hedgerow, savanna, grassland/herbaceous, woodland/hardwood/open woodland, marshes, partially cleared lands and fields	Possible; open grounds present but minimal tree cover for perching and nesting
Delta Green Ground Beetle (*Elaphrus viridis*)	Federal: Threatened	Bare, sparsely vegetated ground along the edges of vernal pools	None; no vernal pools are present
Bald Eagle (*Haliaeetus leucocephalus*)	MBTA BGEPA	Nest in forested areas adjacent to large bodies of water, away from heavily developed areas when possible	Unlikely to nest but may fly over the area
Delta Smelt (*Hypomesus transpacificus*)	Federal: Threatened	River mouth/tidal river, bay/sound	None; no water bodies or streams present
Burke's Goldfields (*Lasthenia burkei*)	Federal: Endangered	Moist spring meadows and vernal pools	None; no vernal pools or meadows are present
Vernal Pool Tadpole Shrimp (*Lepidurus packardi*)	Federal: Endangered	Herbaceous wetland, temporary pool, scrub-shrub wetland	None; no vernal pools or wetlands present
Colusa Grass (*Neostapfia colusana*)	Federal: Threatened	Vernal pools, shallow freshwater ponds	None; no vernal pools are present
California Red-Legged Frog (*Rana draytonii*)	Federal: Threatened	Pools of slow-moving streams, perennial or ephemeral ponds, and upland sheltering habitat	Unlikely; burrows, culverts, and rocks present

Species	Status	Typical Habitat	Potential Likelihood of Occurrence within Parcel Boundary
		such as rocks, small mammal burrows, logs, and man-made structures	but parcel is regularly maintained
Bank Swallow (*Riparia riparia*)	MBTA	Aerial, riparian/steep sand, dirt, or gravel banks, in burrows dug near the top of the bank	Unlikely to nest but may fly over the area
Keck's Checker-Mallow (*Sidalcea keckii*)	Federal: Endangered	Clay soils in foothill annual grasslands of central western Sierra Nevada Mountains, soils high in magnesium with heavy metals, burned areas	None; parcel is outside Sierra Nevada Mountain region
Northern Spotted Owl (*Strix occidentalis caurina*)	Federal: Threatened MBTA	Forests characterized by dense canopy closure of mature and old-growth trees, abundant logs, standing snags, and live trees with broken tops	Unlikely to nest but may fly over the area
California Freshwater Shrimp (*Syncaris pacifica*)	Federal: Endangered	Streams with water flowing year round, predominately low gradient flowing waters	None; no streams are present
Giant Garter Snake (*Thamnophis gigas*)	Federal: Threatened	Agricultural wetlands and other waterways such as irrigation and drainage canals, sloughs, ponds, and small lakes	None; no water bodies or streams present
Solano Grass (*Tuctoria mucronata*)	Federal: Endangered	Northern claypan vernal pools within annual grasslands	None; no vernal pools are present
Least Bell's Vireo (*Vireo bellii pusillus*)	Federal: Endangered MBTA	Dense brush, mesquite, willow-cottonwood forest, streamside thickets, and scrub oak, in arid regions but often near water	Unlikely to nest but may fly over the area

Source: Information for Planning and Consultation (USFWS, 2021).
Notes: Federal = Listed under ESA; BGEPA = Protected under Bald and Golden Eagle Act; MBTA = Protected under Migratory Bird Treaty Act ; BCC = Birds of Conservation Concern (USFWS, 2008).

R. Affect species balance, especially among predators?

- **Existing Conditions**. No water resources exist at the parcel that would support fish or animal species. The ephemeral drainage only flows during and after precipitation events for a short time in a typical year and does not provide suitable habitat. The developed nature of the surrounding area and limited habitat on the site does not support a diversity of species, including predators. Any predators using the site are expected to be transient.

- **Not Applicable.** The Project is not anticipated to impact species balance due to lack of suitable habitat and proximity to previously developed areas minimizing the presence of wildlife, including predators.

S. Involve special hazards, such as radioactivity or electromagnetic radiation?

- **Existing Conditions.** A Phase I Environmental Site Assessment (ESA) for the acquisition of the parcel was completed in May 2021 (USACE, 2021b). The Phase I ESA found that during the Department of Homeland Security (DHS) radioactive use license decommissioning and decontamination processes, shallow soils in greenhouses #7 and #8 were found to have Carbon 14 or Tritium isotope levels above State DHS release criteria. To remediate this finding, approximately 210 cubic feet of contaminated soil was excavated in 2006 to approximately three feet below ground surface and disposed at a licensed Low-Level radioactive waste (LLRW) disposal facility in Utah. After excavation, the property was released by State DHS for unrestricted use.

  A Phase II ESA was prepared in May 2019 in conformance with American Society for Testing and Materials (ASTM) Practice E1527, which revealed a few Historical Recognized Environmental Conditions (REC). Calgene historically used 5 millicuries of radioactive isotopes Carbon-14 and Tritium at the greenhouse facilities, primarily at Greenhouse #7 between 1984 and 1996. Radioactive materials were sprayed directly onto plants offsite at the 5th Street facility and transported to greenhouses. As part of the radiological decommissioning and decontamination process, 130 soil samples were taken in which five soil samples in greenhouses #7 and #8 were found to have levels above release criteria of 12 picocuries per gram. Following the excavation of approximately 210 cubic feet of contaminated soil and disposal of the soil at a licensed LLRW disposal facility, 13 confirmatory soil samples in greenhouse #8 and 21 confirmatory soil samples in greenhouse #7 were taken and indicated no radiation levels above background.

A former deep wastewater holding pond was located west of the greenhouses along the north side of the parcel that received reject wastewater from the reverse osmosis water filtration system and greenhouse French drain. This wastewater pond, which is located outside the limits of disturbance, was closed and filled after a soil salinity investigation in 1991 through 1992 under the oversight of the Central Valley Regional Water Quality Control Board (RWQCB). Although this work was performed, there is no documentation of the soil investigation or closure; however, there is no indication that any significant soil or groundwater contamination existed. The Phase I ESA concluded, if future land use changes to more sensitive residential use, it may be prudent to investigate the former pond area for trace residual pesticide impacts in shallow soils.

A variety of restricted and non-restricted pesticides were used on the parcel in the 1980s inside a vented pesticide spray booth in the Growth Chamber building. Organochlorine pesticides such as DDT were phased out in the 1970s prior to Monsanto operations, but trace residual pesticides are assumed to be in gravel and shallow soil open floor areas within the existing greenhouse footprints and significantly lower trace residuals in the open field areas. The Phase I ESA concluded, typically, general application of pesticides according to labeled instructions do not pose any significant risk. However, if land use changes from agricultural operations to more sensitive residential use, it would be prudent to assess the levels of trace residual pesticides in shallow soils (particularly within the greenhouse footprint) at that time to assess the need for any mitigation measures.

- **Not Applicable.** Due to the location of the former wastewater pond and the proposed land use, this discussion is not applicable to the Proposed Action.

  Trace residual pesticides are assumed to be in gravel and shallow soil open floor areas within the existing greenhouse footprints and significantly lower trace residuals in the open field areas. The Phase I ESA concluded, typically, general application of pesticides according to labeled instructions do not pose any significant risk. Due to the proposed land use, this discussion is not applicable to the Proposed Action.

  The Phase I and II ESAs did not identify any concerns for potential exposure to contamination during construction activities or for future industrial land uses. Therefore, the Proposed Action is not anticipated to involve special hazards, such as radioactivity or electromagnetic radiation.

T. Affect or to be located in a wetland, flood plain, or the coastal zone?

- **Existing Conditions**. The parcel is not located in a wetland, flood plain, or coastal zone. The USACE confirmed the ephemeral drainage onsite is a non-jurisdictional water defined under 33 CFR 328.3(b)(10) and 40 CFR 120.2(2)(x) on November 9, 2021. The FEMA Flood Insurance Rate Map (FIRM) for the Project vicinity (Map Number 06113C0612G) shows that the Facility will be located in Zone X (areas determined to be outside the 0.2 percent annual chance flood plain).

- **Not Applicable.** The Proposed Action is not located within a wetland, flood plain, or coastal zone. Therefore, it is not anticipated that the Proposed Action will affect these resources.

U. Affect a known or potential cultural, historical, or archaeological site, district, or area? (A consultation with the State Historical Preservation Officer is required).

- **Existing Conditions**. Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (Section 106), USDA carried out appropriate measures to identify any potential historic properties within the APE, in consultation with the State Historic Preservation Officer (SHPO) and Native American Tribes. USDA invited the following Native American tribes and communities identified by the California Native American Heritage Commission as having cultural resources interests in the APE to consult under Section 106: Colusa Indian Community Council Cachil Dehe Band of WinTun Indians, Cortina Indian Rancheria – Kletsel Dehe Band of Wintun Indians, Wilton Rancheria, and Yocha Dehe Wintun Nation. No potential historic properties were identified in the Area of Potential Effects (APE).

- **Not Applicable.** The USDA found that no historic properties will be affected by the Proposed Action. In a letter dated October 28, 2021, the SHPO expressed no objection to USDA's identification efforts and finding of effect. Native American Tribes have also not objected. USDA will continue to consult with the SHPO and Tribes pursuant to Section 106. In the event of an inadvertent discovery, USDA will comply with the requirements at 36 CFR § 800.13.

  The Yocha Dehe Wintun Nation also responded to the agency scoping performed for the Project. In a letter dated September 29, 2021, they recommended cultural sensitivity training for any Project personnel and requested detailed project information, including any plans for ground disturbance (Appendix A).

V. Affect local or regional systems related to:

1) Transportation?

Existing Conditions. The parcel is located on Second Street. It is bordered on the east by Cousteau Place, on the west by Pena Drive, and Spafford Street to the north. The facility will also be located directly north of I-80. There is a railroad south of the parcel which parallels Second Street. There are bus stops along Fifth Street, Pena Drive, and Second Street. No other major transportation facilities are located within a notable distance from the facility. I-80 is the busiest road near the parcel, with average vehicle counts over 60,000 per day. Traffic volume on other roads near the parcel are less than 10,000 vehicles per day (City of Davis, 2017). Second Street average daily traffic is approximately 9,000 cars per day (City of Davis, 2021d).

Potentially. The Proposed Action will increase traffic on local roads during construction and operations.

2) Water supply?

Existing Conditions. Water for the Facility will be provided by the City of Davis Water Division. Though the city's water supplies are currently stable, the surrounding areas have experienced a strong pattern of droughts in recent years.

Potentially. The Proposed Action would require a connection to the municipal water supply. The City of Davis is the service provider for the Project area. There is an existing water main on the north side of Second Street and an existing water line servicing the greenhouses and supporting infrastructure in the northeast corner of the parcel. It is anticipated that the existing water service line would be relocated and used to provide water to the Facility. A new 8-inch fire service line would also be required by the Project.

3) Power and heating?

Existing Conditions. PG&E provides the City of Davis with electricity. The proposed Facility will receive power and natural gas from PG&E. Natural gas will serve the domestic water heaters and heating boilers. The City of Davis contracts with Valley Clean Energy (VCE) to allow customers to increase the amount of renewable energy that is being used for their needs to levels above what is currently available from PG&E.

Potentially. The Proposed Action will require power and heating during construction and operations. During operation, the Proposed Action would require a connection to the local electrical grid. The Project would be fed from the existing PG&E distribution to a utility transformer. PG&E is the natural gas service provider for the Project area. There is an existing gas service connection along Second Street.

4) Solid waste management?

Existing Conditions. Solid waste is currently managed by City of Davis Public Works, Utilities and Operations. Garbage, recycling, and green waste collection is provided by Recology Davis under contract with the City of Davis.

Potentially. Solid waste will be generated during construction. The contractor would be responsible for abatement, removal, and disposal of all solid waste according to Federal, state, and local regulations. During operation of the Proposed Action, solid waste will be collected by the City of Davis waste agreement contractor.

5) Sewer or storm drainage?

Existing Conditions. Sewers and storm drainage is currently managed by City of Davis Public Works, Utilities and Operations. The City of Davis is the sanitary service provider in the Project area. There is an existing 8-inch gravity sewer line along the eastern side of the parcel. An ephemeral drainage is located within the man-made ditch on the parcel. It flows southeast through a culvert under a man-made berm before exiting the parcel through a municipal stormwater culvert.

Potentially. The Proposed Action will require connection to the municipal sewer system. The City of Davis is the sanitary service provider in the Project area. There is an existing 8-inch gravity sewer line along the eastern side of the parcel. Additionally, storm drainage will be affected by the Proposed Action, as the existing man-made drainage ditch will be regraded, and stormwater detention basins will be installed on the parcel.

W. Affect local land use through effects on:

1) Flood plains or wetlands?

Existing Conditions. The FEMA FIRM for the Project vicinity (Map Number 06113C0612G) shows that the Facility will be located in Zone X (areas determined to be outside the 0.2 percent annual chance flood plain). Based on the wetland delineation conducted by Burns & McDonnell in September 2021 (Appendix B), there are no wetlands on the parcel.

Not Applicable. The parcel does not contain any flood plains or wetlands.

2) Location land use?

Existing Conditions. The parcel is currently an undeveloped, grassed parcel, zoned Planned Development (PD) #4-88 (Mace Ranch) as a designated Light Industrial/Business Park subarea. The new proposed Facility would be constructed on the currently undeveloped area of the parcel.

Not Applicable. The Proposed Action would fit into the zoning category of the parcel and therefore, would not alter the parcel's intended land use. The Natural Resources Conservation Service (NRCS) confirmed via email on October 7, 2021, that lands identified as "urbanized area" (UA) on Census Bureau maps, such as the proposed Project site, are not subject to Provision of Farmland Protection Policy Act (FPPA; refer to the Part 523.10 of the FPPA Manual). Therefore, it is not necessary to complete an AD-1006 form for farmland conversion.

3) Aesthetics?

Existing Conditions. The proposed Facility would be located in a grass lot on UC Davis property. This area is surrounded by other university buildings as well as commercial businesses. Views are obstructed to the north, east, and west by these buildings and the view to the south includes I-80, Second Street, and a railroad.

Potentially. The Proposed Action would introduce a new two-story facility to the parcel which would alter the appearance of the parcel but would be consistent with the local viewshed.

4) Access to minerals?

Existing Conditions. Mineral mining does not occur on the parcel. No known deposits of recoverable minerals are located at the parcel.

Not Applicable. It is not anticipated that the Proposed Action would affect access to minerals on the parcel.

X. Affect socioeconomic aspects of an area including:

1) Population?

Existing Conditions. The City of Davis has an estimated population of 66,850 people as of 2020 (U.S. Census Bureau, 2020). The City's population has grown approximately 1.9 percent since 2010 (U.S. Census Bureau, 2021).

Not Applicable. The Proposed Action would not significantly affect the surrounding population. A majority of the Facility will be staffed by existing USDA-ARS researchers who already live and work in the Davis area. An increase of six to twenty new residents is minor when compared to the local population.

2) Housing supply or demand?

Existing Conditions. Over half of UC Davis faculty and staff lived in the City of Davis during the 2010-2011 academic year (City of Davis, 2017). There is only one faculty and staff housing development on campus (Aggie Village), which has a long wait list for new residents. Limited housing availability has been a recruitment challenge for UC Davis (City of Davis, 2017).

Not Applicable. The Proposed Action would not meaningfully affect housing supply or demand in the area. Construction of the Proposed Action would not meaningfully affect housing supply or demand in the area as no permanent populations would be brought to the area for Project construction. Existing USDA-ARS' researchers already live and work in the Davis area. Once facilities are constructed, the hiring of new research members would not cause a measurable impact on housing compared to the regular high demand associated with student turnover at UC Davis.

3) Employment?

Existing Conditions. An estimated 59,630 people are employed in the City of Davis, with a civilian unemployment rate of 5.8 percent (U.S. Census Bureau, 2019). The most common occupations are in management, business, science, and arts (63.1 percent). The most common industries for employment are educational services, and health care and social assistance (U.S. Census Bureau, 2019). UC Davis employed 24,278 people as of Fall 2015 (City of Davis, 2017). It is anticipated that UC Davis will increase on-campus employment from 12,181 (2015 estimate) to 14,500 by the 2027-2028 academic year (City of Davis, 2017).

Not Applicable. Project construction may provide short term construction employment to a small number of local persons (up to 80 construction employees at peak construction). During operation, it is anticipated that the USDA will employ approximately 97 staff members, including six to twenty new employees. Approximately 57.5 percent of the City of Davis population is in the civilian labor force (over the age of 16 years old) (U.S. Census Bureau, 2019), which equates to over 38,000 people. Considering the labor force of the City of Davis, is the increase of jobs during construction and operation of the Proposed Action are minor when compared to the available local work force.

4) Commercial activities?

Existing Conditions. Approximately 6.6 percent of land use in the City of Davis is classified as commercial (City of Davis, 2017). The Commercial Core area of the City is located approximately 1.8 miles west of the parcel. Several commercial facilities such as the Davis Furniture and Appliance Outlet, FMC Technologies, and JRP Historical Consulting are located around the site.

Not Applicable. The Proposed Action would not meaningfully affect commercial activities in the area. Some increases in sales of materials and supplies to construction workers and of locally acquired construction materials may occur but these would be small compared to the overall economic activity in the area and short term of construction.

5) Industrial activities?

Existing Conditions. Approximately 1.6 percent of land use in the City of Davis is classified as industrial. The City contains only 3.1 percent of Yolo County's industrial inventory as of

2016 and has limited available space for industrial activities (City of Davis, 2017). The nearest industrial parcel is approximately 0.4 mile west of the parcel on Fifth Street.

Not Applicable. The Proposed Action would not meaningfully affect industrial activities in the area.

6) Cultural patterns?

Existing Conditions. Cultural patterns are the similar behaviors that arise in a population due to shared beliefs, values, norms, and social practices. The Project vicinity includes extensive facilities associated with UC Davis as well as other commercial properties and residential areas, some of which may be associated with UC Davis.

Not Applicable. The Proposed Action would not affect cultural patterns as the Facility is compatible with adjacent land uses and would build on existing research activities in the area.

7) Environmental justice?

Existing Conditions. Using the EPA EJSCREEN Tool, the block group the Project is located within was evaluated for minority populations and low-income populations. The Project would be located within Block Group 061130106065. For this environmental justice analysis, the block group was considered an environmental justice minority area if either (1) the minority population exceeded 50 percent, or (2) the minority population was 10 percentage points greater than the benchmark or reference region. For this analysis, the benchmark geographic areas were the city, county, and state. Table 3-2 shows that the block group which contains the proposed Facility does not qualify as a minority or low-income area in comparison to the benchmark geographic areas.

Table 3-2: Percent Minority and Low-Income Populations near the Project

Geographic Area	Percent Minority	Percent Low-Income
Block Group 061130106065	18	14
City of Davis	34	23
Yolo County	53	36
California	62	33

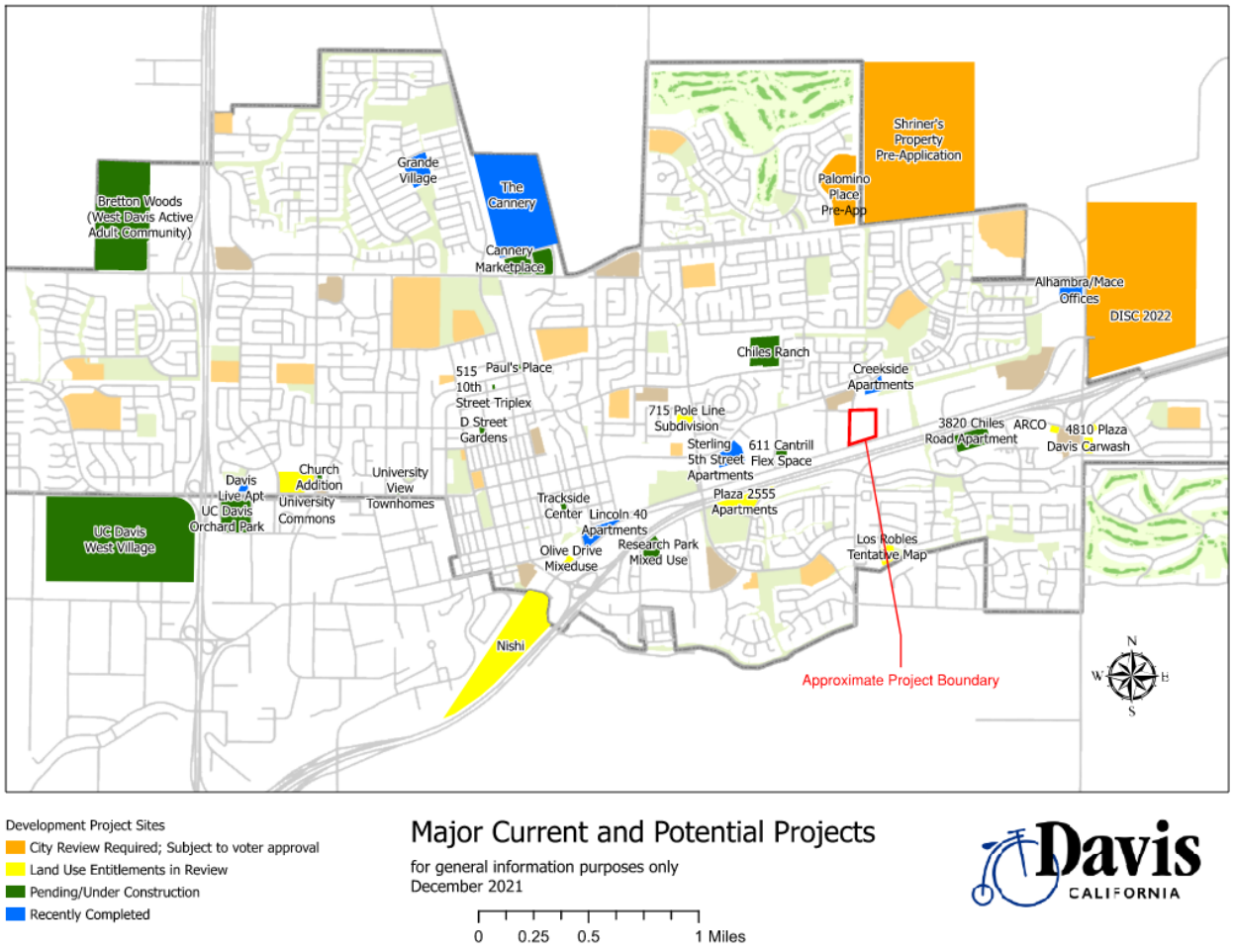
Source: U.S. EPA EJSCREEN Tool, Version 2020

Not Applicable. The Project is not located within an environmental justice area or community.

Y. Cause or contribute to unacceptable noise level?

Existing Conditions. Existing noise in the area is generated by vehicles on nearby roads (Second Street, Fifth Street, and I-80) as well as the railroad south of the proposed Facility. Mowing and other maintenance activities on the property may also contribute to noise levels at the parcel. No similar construction type activities were observed in the vicinity of the parcel during field reconnaissance in September 2021, and most of the surrounding parcels have already been developed. Figure 3-2 provides a map of development projects in the City of Davis.

Figure 3-1: City of Davis Development Projects Map



Source: City of Davis Community Development and Sustainability

Creekside Apartments was recently completed and is located northeast of the parcel. The nearest projects pending construction or under construction (based on December 2021 information) are:

- Chiles Ranch subdivision (2411 E. 8th Street) – an integrated housing development (approximately 107 homes)
- 611-614 Cantrill Flex Space – new light industrial building
- 3820 Chiles Road Apartments – 225 new apartment units

- **Potentially.** The ambient noise levels at the parcel are high due to its location adjacent to Interstate-80. Construction of the Proposed Action would result in increased noise compared to ambient levels. This noise would be temporary in nature and cease after construction is complete. Additionally, a standby generator will be installed onsite to power critical equipment in the Facility during a power outage. Use of this standby generator would generate noise, but its use would be rare and temporary. There are a few commercial businesses nearby as well as a daycare center that could experience elevated noise levels during construction and during operation due to the infrequent use of the standby generator. However, it is not anticipated that construction or operation of the Proposed Action would cause or contribute to an unacceptable noise level.

Z. Affect public health or safety?

- **Existing Conditions.** The nearest medical facility to the proposed Facility location is Davis Urgent Care, which is approximately 1.1 miles east of the proposed Facility location. The Davis Police Department is approximately 0.5 miles west and provides public safety services to the area. Fire protection is provided by the Davis Fire Department. UC Davis contains numerous research facilities anticipated to contain chemicals and materials similar to those anticipated for this Project. Proper storage, fire suppression and containment serve to provide for the safety and health of the public in the areas surrounding these facilities.

- **Not Applicable.** Construction of the Proposed Action would require the use of heavy machinery and construction equipment. The construction site would be restricted and monitored during construction to minimize the access and safety risk to the public. The 2021 Phase 1 ESA concluded that no further investigations are warranted, and remediation is not necessary for the compounds present, including arsenic, pesticides, or fertilizers, as they do not represent a risk to current or future receptors that would require special handling. Air toxics or hazard air pollutants would be generated during construction due to fossil fuel combustion in construction vehicles and equipment (EPA, 2018). The quantity released would not be substantial and would not affect

human health or safety. During operations, various solvents and other hazardous chemicals would be stored and utilized within the Facility. The primary chemicals to be used are acids in small amounts. Large quantities of flammable materials are not anticipated. Designated hazardous material storage rooms and spill containment and clean-up equipment would be provided on each floor of the Facility designed in accordance with Federal, state, and local regulations. Laboratories will be limited to day quantities of hazardous materials (less than ½ gal) for open use at any given time. It is not anticipated that operation of the Proposed Action would considerably affect public health or safety.

AA. Cause public reaction or controversy?

- **Existing Conditions.** This Draft EA and Draft FONSI will be circulated publicly for ten business days starting January 5, 2022 and ending January 18, 2022. Any public comments received will included in Appendix D as a part of the official record. USACE is assisting the USDA-ARS with environmental compliance, design, and construction of the Facility.

- **Not Applicable.** No public opposition or controversy is anticipated. If public concerns exist, they will be brought forward and addressed during the public review. Although no significant concerns are expected.

BB. Cause Climate Change?

- **Existing Conditions.** Current evidence suggests the earth is warming on a global scale. Earth's average temperature has risen by 1.5 °F over the past century and is projected to rise another 0.5 to 8.6 °F over the next one hundred years. Rising global temperatures have been accompanied by changes in weather and climate. Many places have seen changes in rainfall, resulting in more droughts, floods/intense rain as well as heat waves. Oceans are warming and becoming more acidic (EPA, 2019). Ice caps and glaciers are melting, causing sea levels to rise. Other effects include, but are not limited to, the spread of diseases out of their normal range, habitat loss, negative impacts to agriculture production, increased air pollution episodes, and impacts to the economy are expected to result from climate change (EPA, 2021).

- **Not Applicable.** The Proposed Action is not of the magnitude or type that would be necessary to change climate conditions. Construction of the Proposed Action will require the use of heavy machinery which will generate emissions. This will cease with the conclusion of construction. An standby generator will be installed onsite to power critical equipment in the Facility during a

power outage. Use of this standby generator would generate emissions, but its use would be rare and temporary. Also, during operations, natural gas will serve the domestic water heaters and heating boilers to serve the internal needs of the Facility. The Facility would be Leadership in Energy and Environmental Design (LEED) V4 Silver certifiable.

CC. Have impacts from energy usage or alternative energy?

- **Existing Conditions.** PG&E provides the City of Davis with electricity. The proposed Facility will receive power and natural gas from PG&E. Natural gas will serve the domestic water heaters and heating boilers. The City of Davis contracts with Valley Clean Energy (VCE) to allow customers to increase the amount of renewable energy that is being used for their needs to levels above what is currently available from PG&E.

- **Potentially.** The Proposed Action will increase energy usage. Construction of the Proposed Action would require electricity at the job site. Operations of the facility would increase energy usage as well.

3.2 NEPA Evaluation Applied to Alternatives

This section discusses those resources listed in Section 3.1 as potentially impacted by the Action Alternative in further detail.

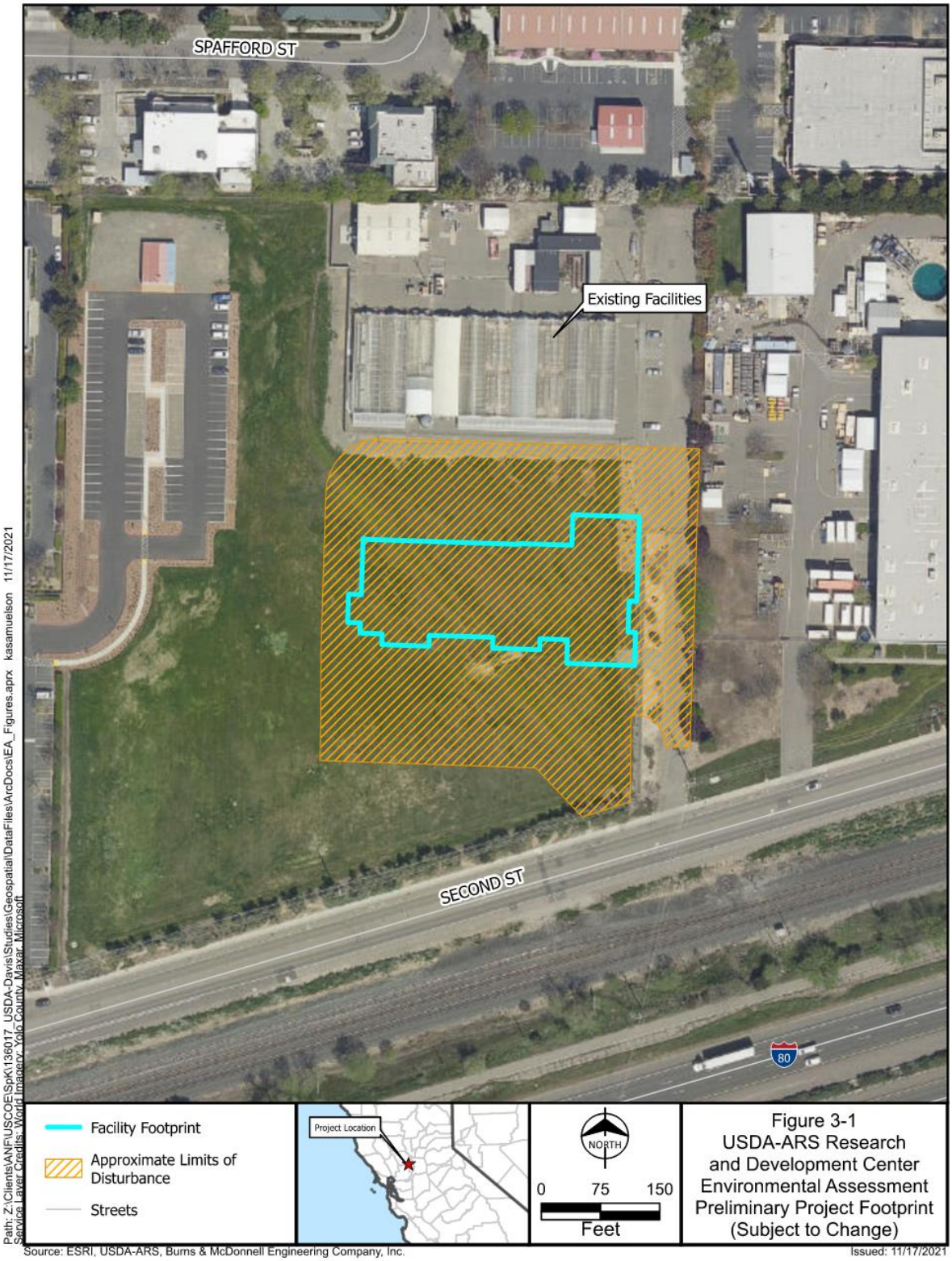
A. Cause or contribute to soil erosion by wind or water?

Alternatives

No Action Alternative: The No Action Alternative would not result in any soil disturbance, or subject soils to associated erosion. The property would not be developed by the USDA-ARS.

Action Alternative: Construction activities would disturb approximately 3.5 acres of the ground surface (Figure 3-1). The areas around the Facility and parking areas would be revegetated. Until the disturbed ground is re-stabilized and revegetated following Project construction, soils would be exposed to wind and water erosion.

Figure 3-2: Preliminary Project Footprint



Mitigation

A Project-specific Stormwater Pollution Prevention Plan (SWPPP) to describe the BMPs to be implemented during construction would be prepared for the Project as part of the submittals for the Construction General Permit (CGP) from the State Water Resources Control Board. The SWPPP would include appropriate BMPs to properly manage and minimize soil erosion by temporarily stabilizing exposed soil and controlling sedimentation. No discharge of pollutants from vehicle and equipment cleaning would be allowed into any storm drains or watercourses. Spill containment kits would be maintained onsite at all times during construction operations.

Disturbance will be limited to that necessary for the construction of the Facility. Once Project construction is completed, all disturbed ground surfaces that have not been converted to impervious surface (i.e. building, parking areas, sidewalks, pavement), would be revegetated to stabilize the parcel. Permanent erosion control measures such as bio-filtration strips and swales to receive storm water discharges from paved or impervious surfaces would be incorporated into the design and construction of the Project. The site drainage design at a minimum will meet Federal, State of California, and City of Davis stormwater quantity and quality requirements.

B. Affect soil surface stability?

Alternatives

No Action Alternative: The No Action Alternative would not result in any soil stability change.

Action Alternative: Construction activities would disturb the vegetated ground surface, exposing soils and therefore decreasing soil stability.

Mitigation

Refer to the mitigation described in Section 3.2, Response A.

H. Affect chemical quality of ground or surface waters (pH, dissolved oxygen, nutrients, dissolved solids, pesticides, etc.)?

Alternatives

No Action Alternative: The No Action Alternative would not affect the chemical quality of ground or surface waters.

Action Alternative: The Proposed Action may impact the man-made drainage ditch water chemistry. The drainage ditch only flows during and for a short duration after precipitation

events. Construction of the Proposed Action would require construction equipment and materials which have the potential for spills and leaks, such as fuel from vehicles. Additionally, the Proposed Action will include the construction of new impermeable surfaces, such as parking areas, where substances from vehicles could be introduced to runoff during rain events. These substances may affect the chemical quality of surface water at the parcel. Stormwater runoff would be directed to stormwater detention basins on the parcel which would overflow to municipal drains. The next nearest known surface waterbody, Putah Creek, is approximately 3,000 feet from the parcel and flow would not be impacted by the Proposed Action. The Proposed Action would not require a well or require excavations at a depth that would impact groundwater sources and therefore, is unlikely to affect their chemical quality.

Mitigation

A Project-specific SWPPP to describe the BMPs to be implemented during construction would be prepared for the Project. A spill response plan would be prepared for construction activities as part of the SWPPP. BMPs outlined in the SWPPP would prevent, to the extent practicable, minor spills or releases of hazardous materials to stormwater, the ground, or local drains that could contribute to degraded water quality. If a spill were to occur, it would be cleaned promptly by trained personnel, reported to the appropriate agencies, and disposed of in accordance with local, State, and Federal policies. The design for the Facility includes stormwater detention basins that would provide stormwater control during construction and operations.

Phase I and Phase II Environmental Site Assessments were performed from 2019-2021 and concluded there was no potential for exposure of contaminants during construction. The active construction site will have restricted access and regular monitoring to ensure compliance with the SWPPP and prevent accidental spills which could affect ground water quality. During operations, the Facility would participate in the Hazardous Materials Business Plan (HMBP) program, which includes spill response planning, to prevent or minimize harm to public health and the environment from a release or threatened release of a hazardous material.

I. Affect physical quality of ground or surface waters (suspended solids, turbidity, color, oil, temperature, etc.)?

Alternatives

No Action Alternative: The No Action Alternative would not affect the physical quality of ground or surface waters.

Action Alternative: The physical water qualities of the ephemeral drainage in the onsite man-made ditch may be impacted by the Proposed Action through stormwater runoff from impervious surfaces during construction and operation of the Facility. Runoff from impervious surfaces may increase the number of suspended solids in the stormwater and increase turbidity. However, given the frequency of which water flows within the drainage ditch, the Proposed Action is unlikely to significantly impact the physical water quality. Additionally, the Proposed Action will include the construction of new impermeable surfaces, such as parking areas, where substances from vehicles could be introduced to runoff during rain events. These substances may affect the physical water quality of surface water at the parcel. Stormwater runoff would be directed to stormwater detention basins on the parcel. The Proposed Action would not require a well or require excavations at a depth that would impact groundwater sources and is unlikely to affect their physical water quality.

Mitigation

A Project-specific SWPPP to describe the BMPs to be implemented during construction would be prepared for the Project. The SWPPP would include approved components to reduce erosion, suspended solids, turbidity, and downstream sedimentation that may degrade water quality and adversely impact aquatic life. Graded areas would be protected from erosion using a combination of silt fences, fiber rolls, etc. along toes of slopes or along edges of designated staging areas, and erosion control netting (such as jute or coir) on sloped areas. Refueling and equipment maintenance would occur at a minimum of 50 feet from any aquatic habitat, culvert, or drainage feature.

The design for the Facility includes stormwater detention basins that would provide stormwater control during construction and operations. The Facility design may also include features, such as permeable pavers and rain gardens, which would allow water to permeate the soil onsite. The site drainage design at a minimum will meet Federal requirements defined by the Energy Independence Security Act of 2007 (EISA) State law, and City of Davis stormwater quantity and quality requirements. EISA Section 438 requires the Project to maintain predevelopment hydrology and prevent net increase in stormwater runoff for the design storm event. The design storm event is the 95th percentile rainfall depth and is based on 24-hour rainfall depth. Post-construction rate, volume, duration, and temperature of runoff must not exceed pre-development rates.

J. Cause odors or release odoriferous substances to air or water?

Alternatives

No Action Alternative: The No Action Alternative would not generate any new odors as no construction would occur.

Action Alternative: During construction, the Proposed Action may generate odors. Odors may be generated by construction vehicle emission, equipment onsite, paints, solvents, or adhesives necessary for construction of the Project. These odors would be temporary in nature and intermittent. Also, odors generated during construction would likely not be noticeable outside the construction area, especially once the structure is enclosed. During operation, a standby generator will be installed onsite to power critical equipment in the Facility during a power outage. Use of this standby generator may generate odors, but its use would be rare and temporary. Due to this, it is not anticipated that odors would substantially impact the surrounding community.

Mitigation

Contractors will be required to turn off vehicles and equipment when not in use to reduce emissions odors from idling. Substances used during construction of the Project that may create odors, such as paints, solvents, adhesives, etc., will be used according to the manufacturer's guidelines.

L. Release particulate matter to the air?

Alternatives

No Action Alternative: The No Action Alternative would not generate PM as no construction or other activities would occur on the parcel.

Action Alternative: The Proposed Action may release fugitive dust, a form of PM, into the air during construction. The Proposed Action would require earth-disturbing activities at the parcel. Also, PM may be emitted/generated by construction equipment onsite (gasoline/diesel engines) and by construction traffic along local roads. During operation, a standby generator will be installed onsite to power critical equipment in the Facility during a power outage. Use of this standby generator may generate PM, but its use would be rare and temporary. The Facility would comply with conditions set forth in applicable permits. PM emissions from operations of the Project are not expected to have a negative impact on ambient air quality in the area surrounding the Project.

Mitigation

Contractors will be required to comply with YSAQMD mitigation measures for construction dust as outlined in the Handbook for Assessing and Mitigation Air Quality Impacts (2007). All driveways, sidewalks, and parking lots shall be paved as soon as possible during construction to prevent fugitive dust.

The following fugitive dust mitigation measure shall be implemented by contractors during construction:

- Water the construction site daily based on type of operation, soil, and wind exposure.
- Cover trucks hauling soil or other loose materials.
- Plant vegetative ground cover in disturbed areas as soon as possible.
- Cover inactive storage piles.
- Sweep streets if visible soil material is carried out from the construction site.
- Treat accesses to a distance of 100 feet from the paved road with a 6- to 12-inch layer of wood chips, gravel or mulch.
- Suspend excavation and grading activities if wind speeds exceed 25 mph.
- Display notices with information including contact information for any dust complaints in a conspicuous manner, such as on construction site fences.

The following mitigation shall be implemented by contractors regarding construction equipment exhaust mitigation and other emission sources:

- Construction vehicles and/or equipment will comply with CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation. Construction vehicles will use a CARB Tier 3 engine when feasible.
- Maintain vehicles in good working order and turn off vehicles and equipment when inactive. Limit idling of vehicles to no more than five minutes.
- Employ equipment and power tools that are powered by electric or natural gas engines.
- Use reformulated and emulsified fuels, if feasible.
- Use diesel oxidation catalysts and/or catalyzed diesel particulate traps on diesel equipment.
- Limit vehicle speeds to 15 miles per hour onsite.
- Recommend carpooling to the Project to reduce number of vehicles onsite.

N. Release substances for which there is a National Ambient Air Quality Standard (i.e., sulfur oxides, nitrogen oxides, carbon monoxide, lead, particulate matter, etc.)?

Alternatives

No Action Alternative: The No Action Alternative would not generate emissions of any NAAQS pollutants as no construction would occur.

Action Alternative: Substances regulated under the NAAQS may be released during construction of the Project. CO, SO_2, NO_x, VOCs, and PM may be emitted/generated during construction activities from gasoline/diesel engines onsite, and from construction traffic along local roads.

The Project is located in Yolo County, which is a moderate non-attainment area for $PM_{2.5}$ category and a serious non-attainment area for ozone (Sacramento Metro Area). The General Conformity threshold for $PM_{2.5}$ moderate nonattainment areas is 100 tons per year. The General Conformity threshold for severe ozone nonattainment areas is 25 tons per year (NOx and VOC, each). Emissions of NO_X, VOC, and $PM_{2.5}$ were estimated for the construction phase of the Project. The numbers and types of construction equipment discussed in Section 2.2 were used to estimate emissions. Timelines for each construction phase were based on the timelines discussed in Section 3.2. A conservative estimate of 8 hours of equipment usage per day was used. Conservative emission factors were used for construction equipment, such as Tier II for diesel engines. A conservative estimate of 80 workers per day (peak construction work force) was used. To calculate particulate emissions from earthmoving, a grading area of 3.5 acres was assumed at a depth of 1 foot. Detailed calculations and assumptions used are included in Appendix E. A summary of these construction emission estimates is shown in Table 3-3.

Table 3-3 Construction Emission Estimates

Pollutant	Estimated Emissions (tons per year)	General Conformity Threshold (tons per year)
NOx	18.79	25
VOC	7.48	25
$PM_{2.5}$	1.42	100

As shown in Table 3-3, construction emissions are not anticipated to exceed the General Conformity threshold for $PM_{2.5}$ or ozone. Construction emissions will be temporary in nature and will drop off rapidly from the construction site. A standby generator will be installed onsite to power critical equipment in the Facility during a power outage. Use of this standby generator

would generate emissions, but its use would be rare and temporary. The standby generator, natural gas-powered domestic water heaters, and heating boilers would meet or exceed YSAQMD standards (Rule 2.37) and will be permitted through the YSAQMD, if required. Due to the temporary nature of generation of emissions onsite, emissions from the Project are not expected to have a negative impact on ambient air quality in the area surrounding the Project. Any required mitigation fees will be awarded through the contract to YSAQMD. The Facility would comply with conditions set forth in applicable permits. Emissions from operations of the Project are not expected to have a negative impact on ambient air quality in the area surrounding the Project.

Mitigation

Refer to the mitigation described in Section 3.2, Response L.

V. Affect local or regional systems related to:

1) Transportation?

Alternatives

No Action Alternative: The No Action Alternative would not impact transportation facilities as no construction would occur.

Action Alternative: The Proposed Action will increase traffic on local roads during construction due to equipment being moved to the area, construction employees traveling to the construction site, and materials being delivered to the parcel. Anticipated construction equipment is as follows:

- Clearing and Grubbing (1 week): One (1) backhoe, three (3) pickup trucks, one (1) dump truck, and small trimmers (sheers).
- Grading (2 Weeks): 1 backhoe, 3 pickup trucks, 1 dump truck, and 1 bulldozer.
- Foundations (2 weeks): 1 backhoe, 3 pickup trucks, 1 dump truck, 1 concrete pumper truck, and 1 small crane to place rebar cages.
- Building Assembly (20 weeks): 2 backhoes, 3 pickup trucks, 1 dump truck, 1 small crane, 3 semi-trucks for delivery of supply materials, and 3 lifts.
- Landscaping and Clean Up (1 week): 1 backhoe, 3 pickup truck, and 1 small bobcat grading vehicle.

Construction traffic would most likely come from the east and will travel via Interstate 80 to the Mace Blvd exit, drive north on Mace, and then west on 2nd Street to reach the parcel. From the north, construction traffic would most likely take Highway 113 to W Covell, then drive on E Covell south to Pole Line Road, then east on 2nd Street to the parcel.

Once construction is complete, employees traveling to the Facility will increase traffic in the immediate area. Approximately 97 total staff will report to the Facility, however, a majority of the facility will be staffed by existing USDA-ARS researchers who already live and work in the Davis area. It is anticipated that six to twenty employees would be hired as part of the Project. Due to this number of employees traveling to the Facility, it is not anticipated that transportation would be meaningfully impacted during Project operation. The existing driveway on Second Street for the existing facilities would be used for the Project.

Mitigation

Construction activities will primarily be scheduled during daytime hours. Contractors will coordinate proper construction signage near the Project as necessary to make drivers aware of the potential for increased hazards associated with construction vehicles. Appropriate changes to signaling, signage, and parking will be instituted once the Facility begins operations.

2) Water Supply

Alternatives

No Action Alternative: The existing water supply would not be impacted under the No Action Alterative as no construction would occur.

Action Alternative: The Proposed Action will require access to municipal water systems managed by the City of Davis Water Division for construction and operation. It is anticipated that the existing water service line would be relocated and used to provide water to the Facility. A new 8-inch fire service line would also be required by the Project. It is anticipated that the City of Davis has the capacity to serve the Facility.

Mitigation

Contractors will coordinate with the City of Davis to minimize any impacts to local water

systems. USDA-ARS will obtain the proper permits to connect to existing municipal water infrastructure in the area.

The Facility is being designed to LEED V4 Silver standards to help minimize its carbon footprint. As such, it will have the following water-saving features incorporated into its design: low flow restroom lavatories (0.35 gpm), urinals (0.125 gpf), water closets (1.28 gpf), and showers (if included in the final design) (1.8 gpm).

3) Power and heating?

Alternatives

No Action Alternative: The No Action Alternative would not impact local or regional power and heating facilities. Current power and heating facilities would remain as is.

Action Alternative: The Proposed Action would increase USDA's power consumption from the existing grid. The Project will use multiple energy-saving technologies onsite, including high efficiency boilers, LED lighting, and unoccupied air change rate turn down. A high efficiency chiller, exhaust air heat recovery system, automated building controls, enhanced building envelope, and onsite photovoltaic and solar hot water heating will be evaluated for potential for use at the Facility. The Facility intends to enroll in the VCE program. Based on these features, it is anticipated that PG&E has the capacity to serve the Facility.

Mitigation

Contractors will coordinate with PG&E when working at the service entrance to minimize risk of damage and/or injury to construction workers. USDA-ARS will coordinate with PG&E and the City of Davis to obtain the proper permits required to connect to the existing electric infrastructure.

The Facility is being designed to LEED V4 Silver standards to increase energy efficiency, therefore minimizing the Facility's load on the system. Overall, the LEED framework provides for healthy, highly efficient, and cost saving green buildings. Buildings designed to LEED standards, have been found to consume 25 percent less energy on average (Fowler et al., 2011). The Facility will evaluate enrolling in VCE's program to utilize more renewable energy sources for its power needs. This will assist the USDA-ARS in meeting the requirements of the 2021 Executive Order 14057 Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability of net-zero emissions

building portfolio by 2045 and net-zero emissions from overall federal operations by 2050.

4) Solid waste management?

Alternatives

No Action Alternative: The No Action Alternative would not impact solid waste management as no additional solid wastes associated with construction would be generated.

Action Alternative: Solid waste will be generated during construction from packaging materials for equipment, scrap, as well as by construction workers. The contractor would be responsible for abatement, removal, and disposal of all solid waste according to Federal, state, and local regulations. During operation of the facility, solid waste will also be generated. It is anticipated that the City's contractor for solid waste collection will be able to accommodate the additional waste generated by the Project.

Mitigation

All solid waste, including recycling, will be disposed of properly according to Federal, state, and local regulations.

5) Sewer or storm drainage?

Alternatives

No Action Alternative: The No Action Alternative would not impact existing sewers or storm drains as no construction would occur.

Action Alternative: The Proposed Action will require connection to the municipal sewer system. Additionally, storm drainage will be affected by the Proposed Action, as stormwater would initially be directed to stormwater detention basins onsite and overflow from the basins would be directed to the municipal stormwater culvert. The existing man-made drainage will be regraded, and stormwater detention basins will be installed on the parcel. It is anticipated that the existing stormwater system has the capacity to receive stormwater from the parcel as the amount of stormwater directed at the municipal system must not exceed pre-development rates, see below.

Mitigation

Debris from the construction site will be properly disposed of so that they do not interfere

with runoff to storm drains. USDA-ARS will coordinate with the City of Davis to obtain the proper permits required to connect to the existing sewer infrastructure. Stormwater onsite would be directed to stormwater detention basins where water would infiltrate soil. The Facility design may also include features, such as also includes permeable pavers and rain gardens, which would allow water to permeate the soil onsite.

W. Affect local land use through effects on:

3) Aesthetics?

Alternatives

No Action Alternative: The No Action Alternative would not impact existing aesthetics of the area as no construction would occur.

Action Alternative: The Proposed Action would involve the introduction of a two story, approximately 66,000 SF Laboratory and Office Facility. During construction, aesthetics of the area would be affected by the presence of construction vehicles and equipment onsite. The Facility post-construction would be consistent with the aesthetics of the surrounding light commercial/industrial development.

Mitigation

USDA will direct its contractors to minimize disturbance to vegetation and soil during Project construction. During construction, work areas would be maintained in an orderly manner and trash and construction debris removed. Following construction activities, disturbed areas would be restored and revegetated. Native landscaping is planned for the areas surrounding the Facility and would complement the overall aesthetic of the Facility. The Facility is being designed for consistency with aesthetic qualities of the surrounding commercial/industrial areas.

Y. Cause or contribute to unacceptable noise level?

Alternatives

No Action Alternative: The No Action Alternative would not alter existing noise in the area as no construction would occur.

Action Alternative: The ambient noise levels at the parcel are high due to its location adjacent to Interstate-80. The Proposed Action would temporarily increase noise in the area during

construction due to construction vehicles, equipment, and construction activities. Table 3-3 provides typical construction equipment noise levels.

Table 3-4: Typical Construction Equipment Noise Levels[a,b]

Generic Construction Equipment	Average Noise at 50 feet (dBA)
Backhoes	80
Pickup truck	55
Dump truck	84
Small trimmers (sheers)	85
Bulldozers	85
Concrete pumper truck	82
Small crane	85
Semi-truck (deliveries)	84
Lift	85
Bobcat grading vehicle	85

(a) Values taken from the Federal Highway Administration Construction Noise Handbook
(b) Values taken from the Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, 2006

The increase in noise is anticipated to be minor, temporary, and intermittent in nature. During operation, a standby generator onsite may be used during power outages to power critical equipment in the Facility. Use of this standby generator would generate noise, but its use would be rare and temporary. There are a few commercial businesses nearby as well as a daycare center that could experience elevated noise levels during construction and the infrequent use of the standby generator. However, it is not anticipated that construction or operation of the Proposed Action would cause or contribute to an unacceptable noise level. It is expected that noise levels during operations will generally be similar to existing levels.

Mitigation

Construction activities will be scheduled between 7:00 am and 7:00 pm on Mondays through Fridays, and between the hours of 8:00 am and 8:00 pm on Saturdays and Sundays, per Section 24.02.040 of the Davis Municipal Code. The following mitigation measure shall be implemented by contractors during construction, if applicable:

- Maintain vehicles in good working order and turn off vehicles and equipment when not in use. Limit idling of vehicles to no more than 5.0 minutes at any location.
- Use properly functioning mufflers on appropriate machinery.

Mitigation

The Facility is being designed to LEED V4 Silver standards to help minimize its carbon footprint. As such, it will have the following energy-saving features incorporated into its design: high efficiency boilers, LED lighting, and unoccupied air change rate turn down. A high efficiency chiller, exhaust air heat recovery system, automated building controls, enhanced building envelope, and onsite photovoltaic and solar hot water heating will be evaluated for potential for use at the Facility. Additionally, the Facility intends to enroll in the VCE program, which will allow the Facility to increase the amount of renewable energy (wind and solar) that is being used for their needs to levels above what is currently available from PG&E.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The following sections discuss the recommended alternative for the Project as well as a summary of mitigation commitments.

4.1 Recommended Alternative

The Proposed Action, which is the construction of the Facility, addresses the purpose for the Project, which is to create additional laboratory, office, administrative, and technical support space to meet USDA-ARS research demands. The No Action Alternative does not address the Project purpose, however. As such, it is not the recommended alternative.

4.2 Summary of Mitigation Commitments

The following is a summary of mitigation commitments described in Section 3.2.

A. Cause or contribute to soil erosion by wind or water?

- A Project-specific Stormwater Pollution Prevention Plan (SWPPP) to describe the BMPs to be implemented during construction would be prepared for the Project as part of the submittals for the Construction General Permit (CGP) from the State Water Resources Control Board. The SWPPP would include appropriate BMPs to properly manage and minimize soil erosion by temporarily stabilizing exposed soils and controlling sedimentation. No discharge of pollutants from vehicle and equipment cleaning would be allowed into any storm drains or watercourses. Spill containment kits would be maintained onsite at all times during construction operations.

  Disturbance will be limited to that necessary for the construction of the Facility. Once Project construction is completed, all disturbed ground surfaces that have not been converted to impervious surface (i.e. building, parking areas, sidewalks, pavement), would be revegetated to stabilize the parcel. Permanent erosion control measures such as bio-filtration strips and swales to receive storm water discharges from paved or impervious surfaces would be incorporated into the design and construction of the Project. The site drainage design at a minimum will meet Federal, State of California, and City of Davis stormwater quantity and quality requirements.

B. Affect soil surface stability?

- Refer to the mitigation described in Section 4.2, Response A.

H. Affect chemical quality of ground or surface waters (pH, dissolved oxygen, nutrients, dissolved solids, pesticides, etc.)?

- A Project-specific SWPPP to describe the BMPs to be implemented during construction would be prepared for the Project. A spill response plan would be prepared for construction activities as part of the SWPPP. BMPs outlined in the SWPPP would prevent, to the extent practicable, minor spills or releases of hazardous materials to stormwater, the ground, or local drains that could contribute to degraded water quality. If a spill were to occur, it would be cleaned promptly by trained personnel, reported to the appropriate agencies, and disposed of in accordance with local, State, and Federal policies. The design for the Facility includes stormwater detention basins that would provide stormwater control during construction and operations.

  Phase I and Phase II Environmental Site Assessments were performed from 2019-2021 and concluded there was no potential for exposure of contaminants during construction. The active construction site will have restricted access and regular monitoring to ensure compliance with the SWPPP and prevent accidental spills which could affect ground water quality. During operations, the Facility would participate in the Hazardous Materials Business Plan (HMBP) program, which includes spill response planning, to prevent or minimize harm to public health and the environment from a release or threatened release of a hazardous material.

I. Affect physical quality of ground or surface waters (suspended solids, turbidity, color, oil temperature, etc.)?

- A Project-specific SWPPP to describe the BMPs to be implemented during construction would be prepared for the Project. The SWPPP would include approved components to reduce erosion, suspended solids, turbidity, and downstream sedimentation that may degrade water quality and adversely impact aquatic life. Graded areas would be protected from erosion using a combination of silt fences, fiber rolls, etc. along toes of slopes or along edges of designated staging areas, and erosion control netting (such as jute or coir) on sloped areas. Refueling and equipment maintenance would occur at a minimum of 50 feet from any aquatic habitat, culvert, or drainage feature.

  The design for the Facility includes stormwater detention basins that would provide stormwater control during construction and operations. The Facility design may also include features, such as permeable pavers and rain gardens, which would allow water to permeate the soil onsite. The site drainage design at a minimum will meet Federal requirements defined by the Energy

Independence Security Act of 2007 (EISA) State law, and City of Davis stormwater quantity and quality requirements. EISA Section 438 requires the Project to maintain predevelopment hydrology and prevent net increase in stormwater runoff for the design storm event. The design storm event is the 95th percentile rainfall depth and is based on 24-hour rainfall depth. Post-construction rate, volume, duration, and temperature of runoff must not exceed pre-development rates.

J. Cause odors or release odoriferous substances to air or water?

- Contractors will be required to turn off vehicles and equipment when not in use to reduce emissions odors from idling. Substances used during construction of the Project that may create odors, such as paints, solvents, adhesives, etc., will be used according to the manufacturer's guidelines.

L. Release particulate matter to the air?

- Contractors will be required to comply with YSAQMD mitigation measures for construction dust as outlined in the Handbook for Assessing and Mitigation Air Quality Impacts (2007). All driveways, sidewalks, and parking lots shall be paved as soon as possible during construction to prevent fugitive dust.

  The following fugitive dust mitigation measure shall be implemented by contractors during construction:

  - Water the construction site daily based on type of operation, soil, and wind exposure.
  - Cover trucks hauling soil or other loose materials.
  - Plant vegetative ground cover in disturbed areas as soon as possible.
  - Cover inactive storage piles.
  - Sweep streets if visible soil material is carried out from the construction site.
  - Treat accesses to a distance of 100 feet from the paved road with a 6- to 12-inch layer of wood chips, gravel or mulch.
  - Suspend excavation and grading activities if wind speeds exceed 25 mph.
  - Display notices with information including contact information for any dust complaints in a conspicuous manner, such as on construction site fences.

The following mitigation shall be implemented by contractors regarding construction equipment exhaust mitigation and other emission sources:

- Construction vehicles and/or equipment will comply with CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation. Construction vehicles will use a CARB Tier 3 engine when feasible.
- Maintain vehicles in good working order and turn off vehicles and equipment when inactive. Limit idling of vehicles to no more than five minutes.
- Employ equipment and power tools that are powered by electric or natural gas engines.
- Use reformulated and emulsified fuels, if feasible.
- Use diesel oxidation catalysts and/or catalyzed diesel particulate traps on diesel equipment.
- Limit vehicle speeds to 15 miles per hour onsite.
- Recommend carpooling to the Project to reduce number of vehicles onsite.

N. Release substances for which there is a National Ambient Air Quality Standard (i.e., sulfur oxides, nitrogen oxides, carbon monoxide, lead, particulate matter, etc.)?

- Refer to the mitigation described in Section 4.2, Response L.

V. Affect local or regional systems related to:

1) Transportation?

Construction activities will primarily be scheduled during daytime hours. Contractors will coordinate proper construction signage near the Project as necessary to make drivers aware of the potential for increased hazards associated with construction vehicles. Appropriate changes to signaling, signage, and parking will be instituted once the Facility begins operations.

2) Water supply?

Contractors will coordinate with the City of Davis to minimize any impacts to local water systems. USDA-ARS will obtain the proper permits to connect to existing municipal water infrastructure in the area.

The Facility is being designed to LEED V4 Silver standards to help minimize its carbon footprint. As such, it will have the following water-saving features incorporated into its

design: low flow restroom lavatories (0.35 gpm), urinals (0.125 gpf), water closets (1.28 gpf), and showers (if included in the final design) (1.8 gpm).

3) Power and heating?

   Contractors will coordinate with PG&E when working at the service entrance to minimize risk of damage and/or injury to construction workers. USDA-ARS will coordinate with PG&E and the City of Davis to obtain the proper permits required to connect to the existing electric infrastructure.

   The Facility is being designed to LEED V4 Silver standards to increase energy efficiency, therefore minimizing the Facility's load on the system. Overall, the LEED framework provides for healthy, highly efficient, and cost saving green buildings. Buildings designed to LEED standards, have been found to consume 25 percent less energy on average (Fowler et al., 2011). The Facility will evaluate enrolling in VCE's program to utilize more renewable energy sources for its power needs. This will assist the USDA-ARS in meeting the requirements of the 2021 Executive Order 14057 Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability of net-zero emissions building portfolio by 2045 and net-zero emissions from overall federal operations by 2050.

4) Solid waste management?

   All solid waste, including recycling, will be disposed of properly according to Federal, state, and local regulations.

5) Sewer or storm drainage?

   Debris from the construction site will be properly disposed of so that they do not interfere with runoff to storm drains. USDA-ARS will coordinate with the City of Davis to obtain the proper permits required to connect to the existing sewer infrastructure. Stormwater onsite would be directed to stormwater detention basins where water would infiltrate soil. The Facility design may also include features, such as also includes permeable pavers and rain gardens, which would allow water to permeate the soil onsite.

W. Affect local land use through effects on:

3) Aesthetics?

USDA will direct its contractors to minimize disturbance to vegetation and soil during Project construction. During construction, work areas would be maintained in an orderly manner and trash and construction debris removed. Following construction activities, disturbed areas would be restored and revegetated. Native landscaping is planned for the areas surrounding the Facility and would complement the overall aesthetic of the Facility. The Facility is being designed for consistency with aesthetic qualities of the surrounding commercial/industrial areas.

Y. Cause or contribute to unacceptable noise level?

- Construction activities will be scheduled between 7:00 am and 7:00 pm on Mondays through Fridays, and between the hours of 8:00 am and 8:00 pm on Saturdays and Sundays, per Section 24.02.040 of the Davis Municipal Code. The following mitigation measure shall be implemented by contractors during construction, if applicable:

  - Maintain vehicles in good working order and turn off vehicles and equipment when not in use. Limit idling of vehicles to no more than 5.0 minutes at any location.
  - Use properly functioning mufflers on appropriate machinery.
  - Provide written notice to residents and businesses within 1,000 feet of the construction zone, advising them of the estimated construction schedule. This written notice will be provided at least one week prior to the start of construction at that location.
  - Display notices with information including, but not limited to, contractor contact telephone number(s) and proposed construction dates and times in a conspicuous manner, such as on construction site fences.
  - A noise disturbance coordinator will be identified who would promptly respond to noise complaint calls and monitor noise and construction activity.
  - Per the Davis Municipal Code, no individual piece of equipment shall produce a noise level exceeding 83 dBA at a distance of 25 feet. If the device is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close to twenty feet from the equipment as possible.
  - Per the Davis Municipal Code, the noise level at any point outside of the property plane of the project shall not exceed 86 dBA.

- Note, the Davis Municipal Code shall not be applicable to impact tools and equipment; provided, that such impact tools and equipment shall have intake and exhaust mufflers recommended by manufacturers thereof and approved by the Director of Public Works as best accomplishing maximum noise attenuation, and that pavement breakers and jackhammers shall also be equipped with acoustically attenuating shields or shrouds recommended by the manufacturers thereof and approved by the Director of Public Works as best accomplishing maximum noise attenuation. In the absence of manufacturer's recommendations, the Director of Public Works may prescribe such means of accomplishing maximum noise attenuation as he or she may determine to be in the public interest.
- Employ equipment that is powered by electric or natural gas engines, as opposed to those powered by gasoline fuel or diesel, when feasible.

CC. Have impacts from energy usage or alternative energy?

- The Facility is being designed to LEED V4 Silver standards to help minimize its carbon footprint. As such, it will have the following energy-saving features incorporated into its design: high efficiency boilers, LED lighting, and unoccupied air change rate turn down. A high efficiency chiller, exhaust air heat recovery system, automated building controls, enhanced building envelope, and onsite photovoltaic and solar hot water heating will be evaluated for potential for use at the Facility. Additionally, the Facility intends to enroll in the VCE program, which will allow the Facility to increase the amount of renewable energy (wind and solar) that is being used for their needs to levels above what is currently available from PG&E.

5.0 LIST OF PREPARERS

The environmental assessment for the Project was prepared by Burns & McDonnell under the direction of USDA-ARS. The following is a list of preparers of this document.

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