Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project (WDR018)

FINAL~~DRAFT~~ INITIAL STUDY /
MITIGATED NEGATIVE DECLARATION

CITY OF
ELK GROVE
PROUD HERITAGE. BRIGHT FUTURE.

State Clearing House (SCH) No. 2022110059

July 2023

LAGUNA CREEK AND WHITEHOUSE CREEK MULTI-FUNCTIONAL CORRIDOR PROJECT (WDR018)

Prepared for:

City of Elk Grove
Public Works Department
8401 Laguna Palms Way
Elk Grove, California 95758

Prepared by:

Dokken Engineering
110 Blue Ravine Road, Suite 200
Folsom, California 95630

TABLE OF CONTENTS

List of Figures

List of Tables

Appendices

LIST OF ABBREIVATIONS

AB	*Assembly Bill*
APE	*Area of Potential Effects*
BMPs	*Best Management Practices*
BSA	*Biological Study Area*
CAA	*Clean Air Act*
CAAQS	*California Ambient Air Quality Standards*
CalEPA	*California Environmental Protection Agency*
CARB	*California Air Resources Board*
CCAA	*California Clean Air Act*
CCSD	*Consumnes Community Service District*
CCSDFD	*Consumnes Community Service District Fire Department*
CDFW	*California Department of Fish and Wildlife*
CESA	*California Endangered Species Act*
CEQA	*California Environmental Quality Act*
CFR	*Code of Federal Regulation*
City	*City of Elk Grove*
CNDDB	California Natural Diversity Database
CNPS	*California Native Plant Society*
CO	*Carbon Monoxide*
CO_2	*Carbon Dioxide*
CWA	*Clean Water Act*
dBA	*Decibel A-weighted*
EO	*Executive Order*
EPA	*Environmental Protection Agency*
ESA	*Environmentally Sensitive Area*
FESA	*Federal Endangered Species Act*
FIRM	*Flood Insurance Rate Map*
GGS	*Giant Garter Snake*
GHG	*greenhouse gases*
IS	*Initial Study*
Leq	*Equivalent Continuous Sound Level*
MBTA	*Migratory Bird Treaty Act*
MND	*Mitigated Negative Declaration*
NAAQS	*National Ambient Air Quality Standards*
NAHC	*Native American Heritage Commission*

NCIC	*North Central Information Center*
NEPA	*National Environmental Protection Act*
NMFS	*National Marine Fisheries Service*
NO_2	*Nitrogen Dioxide*
NO_X	*Nitrogen Oxides*
NOA	*Naturally Occurring Asbestos*
NOAA	*National Oceanic and Atmospheric Administration*
NPDES	*National Pollutant Discharge Elimination System*
NRCS	Natural Resource Conservation Service
O_3	*Ozone*
OHP	*Office of Historic Preservation*
PM	*Particulate Matter*
ppm	*Parts per Million*
PRC	*Public Resources Code*
Project	*Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project*
ROG	*Reactive organic compounds*
RWQCB	*Regional Water Quality Control Board*
SHPO	*State Historic Preservation Office*
SHTAC	*Swainson's Hawk Technical Advisory Committee*
SMAQMD	*Sacramento Metropolitan Air Quality Management District*
SO_2	*Sulfur Dioxide*
SPCCP	*Spill Prevention, Control, and Countermeasure Program*
SSC	Species of Special Concern (SSC).
SWPPP	*Storm Water Pollution Prevention Plan*
SWRCB	*State Water Resources Control Board*
TAC	Toxic Air Contaminant
TCM	transportation control measure
USACE	*United States Army Corps of Engineers*
USFWS	*United States Fish and Wildlife Service*
VMT	*Vehicle miles traveled*
VOC	*Volatile organic compounds*
WPT	*Western pond turtle*

1.0 INTRODUCTION

This **Final Initial Study** includes limited revisions that derived from public comments that were received during the Draft Initial Study's public circulation period, which began on November 4, 2022 and ended December 9, 2022. Revisions to the Draft Initial Study can be identified by ~~strikeout~~ text where language has been deleted, and by underline text where language has been added. This revised document constitutes the **Final Initial Study** for the Project.

1.1 Purpose and Background of the Initial Study

This document is an Initial Study (IS) with supporting environmental studies, which provides justification for a Mitigated Negative Declaration (MND) pursuant to the California Environmental Quality Act (CEQA) for the Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project (Project).

The purpose of this IS/MND is to evaluate the potential environmental impacts of the ~~proposed~~ Project. Mitigation measures have also been established that reduce or eliminate any identified significant and/or potentially significant impacts.

The IS/MND is a public document to be used by the City of Elk Grove (City), acting as the CEQA lead agency, to determine whether the ~~proposed~~ Project may have a significant effect on the environment pursuant to CEQA. If the lead agency finds substantial evidence that any aspect of the ~~proposed~~ Project, either individually or cumulatively, may have a significant effect on the environment that cannot be mitigated, regardless of whether the overall effect of the ~~proposed~~ Project is adverse or beneficial, the lead agency is required to prepare an Environmental Impact Report (EIR), use a previously prepared EIR and supplement that EIR, or prepare a subsequent EIR to analyze the Project at hand (Public Resources Code Sections 21080(d), 21082.2(d)).

If the agency finds no substantial evidence that the ~~proposed~~ Project or any of its aspects may cause a significant impact on the environment with mitigation, a MND shall be prepared with a written statement describing the reasons why the ~~proposed~~ Project, which is not exempt from CEQA, would not have a significant effect on the environment, and therefore, why it does not require the preparation of an EIR (State CEQA Guidelines Section 15371).

According to State CEQA Guidelines Section 15070, a Negative Declaration shall be prepared for a project subject to CEQA when either:

1) *The initial study shows there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or*

2) *The initial study identifies potentially significant effects, but:*

    a) *Revisions in the project plans or proposals made by, or agreed to by the applicant before the proposed MND and initial study are released for public review would avoid* *the effects or mitigate the effects to a point where clearly no significant effects would occur, and*

b) *There is no substantial evidence, in light of the whole record before the agency, that the proposed project as revised may have a significant effect on the environment.*

This IS/MND has been prepared in accordance with CEQA, Public Resources Code Section 21000 et seq., and the State CEQA Guidelines Title 14 California Code of Regulations (CCR) Section 15000 et seq.

The Draft IS was circulated for agency and public review during a public circulation period that began on November 4, 2022 and ended December 9, 2022. During that time, five comment letters/emails were received. Those letters, and the City's responses to them, are attached to this IS as **Appendix E**. The comments did not identify any new potentially significant environmental effects from implementation of the Project. Accordingly, additional environmental analysis is not required.

1.2 Lead Agency

The lead agency is the public agency with primary responsibility over a ~~proposed~~ project. Where two or more public agencies will be involved with a project, CEQA Guidelines Section 15051 provides criteria for identifying the lead agency. In accordance with CEQA Guidelines Section 15051(b)(1), "The lead agency will normally be the agency with general governmental powers." The City has initiated preliminary design of the ~~proposed~~ Project and it requires approval from the Elk Grove City Council. Therefore, based on the criteria described above, the lead agency for the ~~proposed~~ Project is the City.

1.3 Technical Studies

Technical studies prepared for the ~~proposed~~ Project and referenced in this IS/MND are listed below. The technical studies are available at the Elk Grove Planning Department at 8401 Laguna Palms Way, Elk Grove, CA 95758, Monday through Friday, 8:00 AM to 5:00 PM.

- Biological Resources Report, Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project, Dokken Engineering
- Cultural Resources Report, Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project, Dokken Engineering (Not for Public Disclosure due to Sensitive Information)
- Aquatic Resources Delineation Report, Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project, Dokken Engineering

.

2.0 PROJECT DESCRIPTION

2.1 Project Location

The ~~proposed~~ Project is located in the City of Elk Grove, Sacramento County, California (**Figure 1.** Project Vicinity). Specifically, the Project site extends from the existing Laguna Creek Trail, located south of the intersection of Beckington Drive and White Peacock Way, to a connection at East Stockton Boulevard approximately 750 feet south of the intersection of East Stockton Boulevard and Cantwell Drive (**Figure 2.** Project Location).

2.2 Project Purpose and Objectives

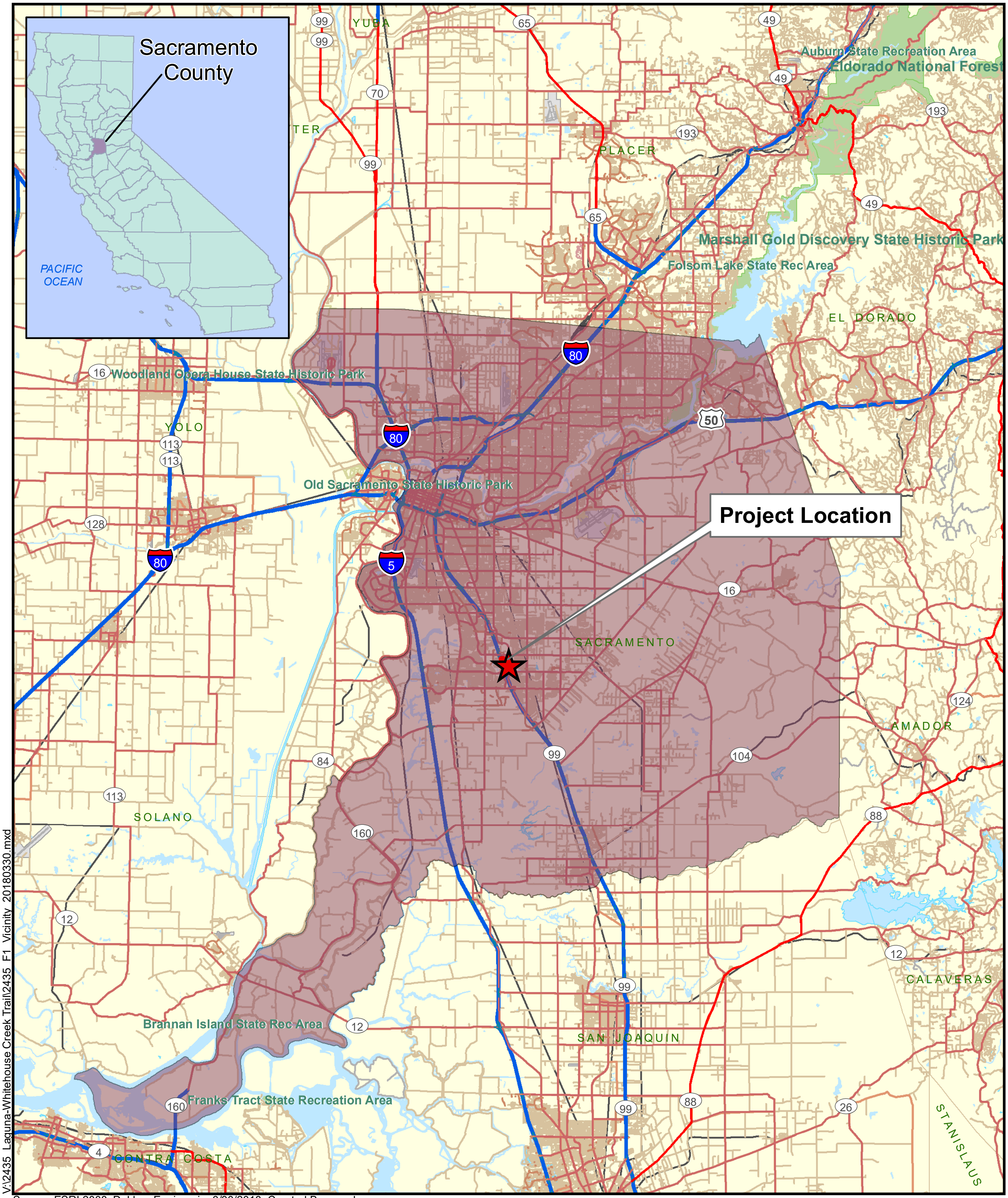
The purpose of the Project is to provide access along Laguna Creek and Whitehouse Creek to City maintenance crews. Regular maintenance and emergency debris removal within these creeks is currently prohibited by a lack of access. Additionally, the City of Elk Grove Bicycle, Pedestrian, and Trails Master Plan (2021) (BPTMP) identifies this segment of the Laguna Creek Trail as a future bicycle and trail project expenditure and shows the ~~proposed~~ Project on Figure 12 (Existing and Proposed Bicycle Network) of the BPTMP. The BPTMP identifies the need for an off-street multiuse trail system providing connections throughout the City and the Sacramento region. As part of the Project, this segment would complete a portion of the Laguna Creek Trail system in the City of Elk Grove from the west end of Camden Park to East Stockton Boulevard.

2.3 Project Description

The Project consists of constructing a multi-functional corridor between East Stockton Boulevard and Camden Park in the City of Elk Grove. The maintenance access road alignment begins at East Stockton Boulevard, approximately 750 feet south of the intersection of East Stockton Boulevard and Cantwell Drive. The alignment follows a west-east orientation before crossing Whitehouse Creek. After this crossing, the alignment turns south and parallels the eastern bank of Whitehouse Creek before turning southeast and crossing Laguna Creek at two locations before terminating at the existing Laguna Creek Trail system near Beckington Drive and White Peacock Way. During the final design and right-of-way phases of the Project, the alignment may traverse further south along Whitehouse Creek before turning southeast to cross Laguna Creek. This design option is included on **Figure 3**. Project Features.

The Project ~~would be constructed in two phases. Phase I would~~ includes construction of a ~~12- to 16~~10-foot-wide paved surface (no pavement striping) with 2~~-3~~ feet of unpaved shoulders (**Figure 4**. Typical Cross Sections). Pre-fabricated steel or concrete bridges would provide necessary access across Laguna and Whitehouse Creeks. The Project would be constructed in phases, dependent on funding, with the last phase of the Project ~~Phase II of the Project would consist of~~ converting the paved maintenance access road into a Class 1 multi-functional trail corridor connection between East Stockton Boulevard and Camden Park, with pavement striping and trail amenities, such as benches and trash containers. This last phase ~~Phase II~~ of the Project would complete a gap within the trail system in accordance with the City's Bicycle, Pedestrian, and Trails Master Plan.

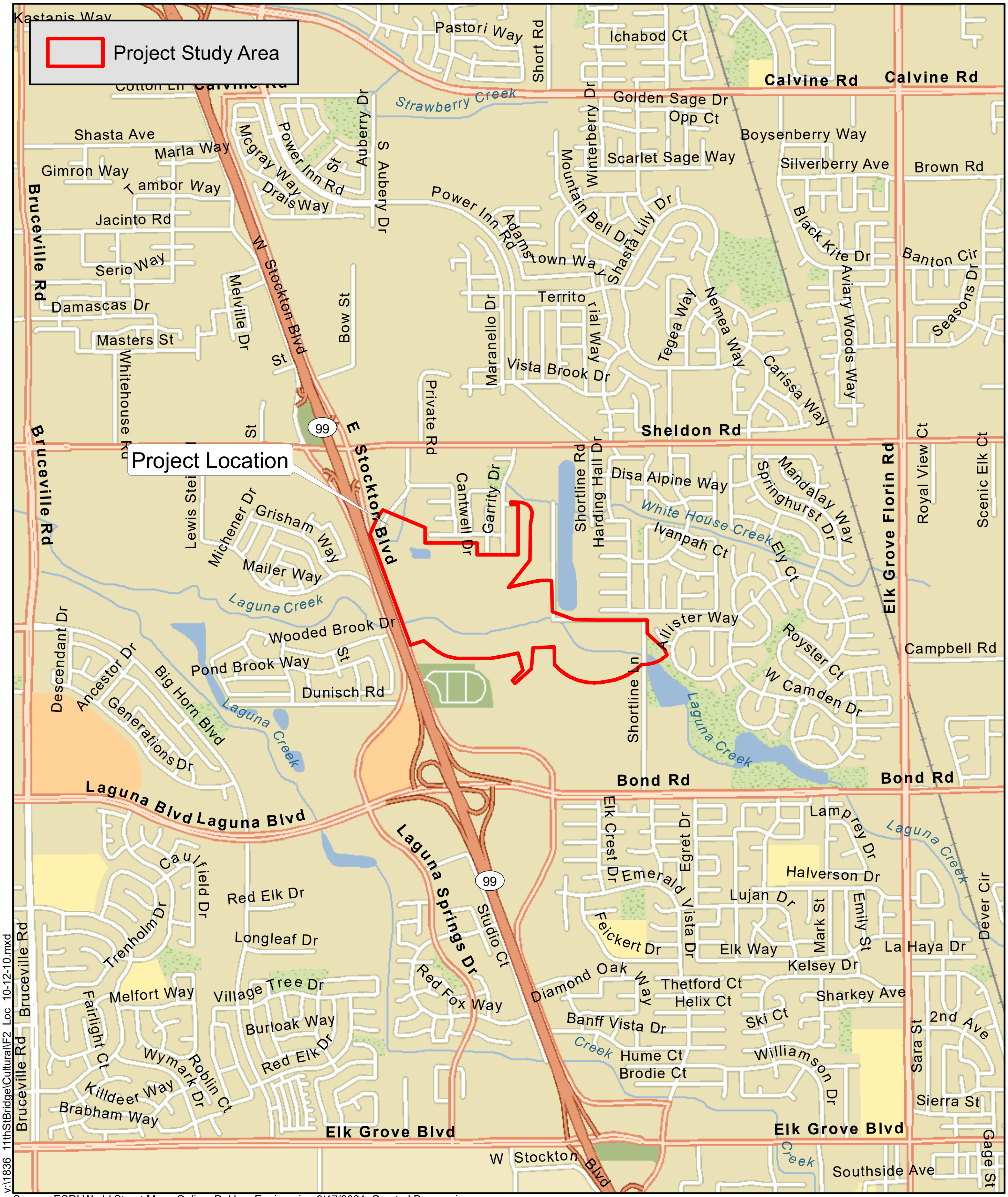
Additional ~~Phase I or II~~ Project features would include construction of floodway excavation areas~~retention basins~~ to offset the floodplain encroachments from the maintenance road/multi-functional trail and fencing to prevent pedestrian incursion beyond the multi-functional corridor. Right-of-way acquisitions and temporary construction easements are needed where the multi-functional corridor passes through privately-owned parcels and will be obtained during final design~~Phase I~~ of the Project.



Source: ESRI 2008; Dokken Engineering3/30/2018; Created By: amyd

FIGURE 1
Project Vicinity
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, Sacramento County, California

0 5 10 15
Miles



v:\1836 11thStBridge\Cultural\F2_Loc 10-12-10.mxd

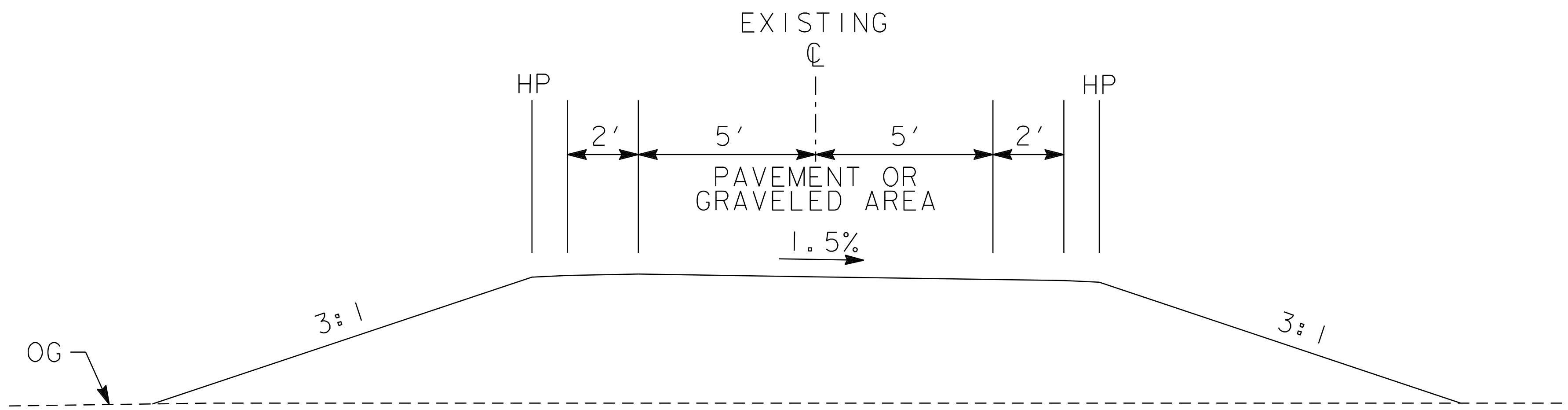
Source: ESRI World Street Maps Online; Dokken Engineering 9/17/2021; Created By: rramirez

0 0.25 0.5 0.75 1 Miles

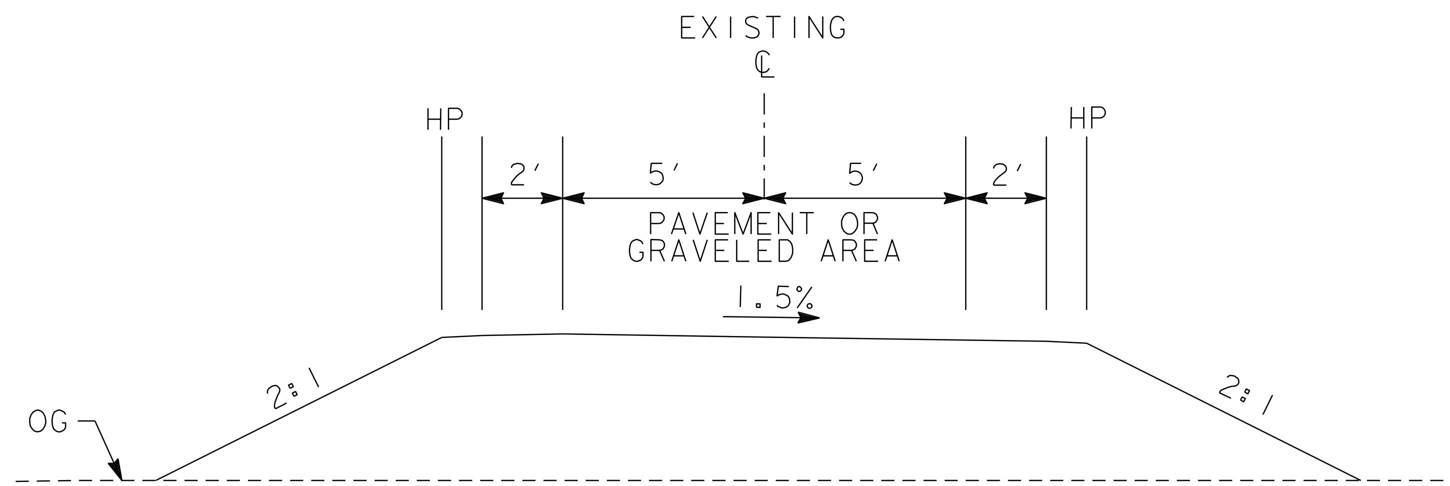
FIGURE 2
Project Location
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, Sacramento County, California

Source: ESRI World Street Maps Online; Dokken Engineering 7/10/2023; Created By: amyd

FIGURE 3
Project Features
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California



SLOPED TOWARD THE CREEK



ALONG WHITEHOUSE CREEK

DOKKEN ENGINEERING
110 BLUE RAVINE ROAD., SUITE 200. FOLSOM,CA. 916-858-0642

FIGURE 4: Typical Cross Sections

PROJECT:
LAGUNA CREEK AND WHITEHOUSE CREEK MULTI-FUNCTIONAL CORRIDOR PROJECT

This Project is partially funded through the City's Storm Drainage Master Plan and is subject to compliance with the California Environmental Quality Act (CEQA). The lead agency for CEQA compliance is the City. The Project is also subject to compliance with the National Environmental Policy Act (NEPA) due to anticipated federal permitting through the U.S. Army Corps of Engineers federal nexus during the Clean Water Act Section 404 permitting process for project impacts to waters of the U.S.

2.4 Required Project Approvals

In order for the Project to be implemented, a series of actions and approvals would be required from regulatory agencies. Anticipated Project approvals would include, but are not limited to the following:

Table 1. Require Project Approvals

Agency	Permit/Approval	Status
Elk Grove City Council	Adoption of MND and MMRP	Anticipated 2022
State Water Resources Control Board	Section 401 Certification	Anticipated 2023
California Department of Fish and Wildlife	1602 Streambed Alteration Agreement	Anticipated 2023
U.S. Fish and Wildlife Service	Section 7 Letter of Concurrence	Anticipated 2023
U.S. Army Corps of Engineers	Section 404 Nationwide Permit 14	Anticipated 2023
Regional Water Quality Control Board	National Pollutant Discharge Elimination System 402 General Permit for Storm Water Discharges Associated with Construction Activity	Will be Obtained Prior to Construction.

3.0 INITIAL STUDY CHECKLIST

A. BACKGROUND

1. Project Title:

Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project (WDR018)

2. Lead Agency Name and Address:

City of Elk Grove
8401 Laguna Palms Way
Elk Grove, CA 95758

3. Contact Person Phone Number:

Keith Jukes, P.E.
Project Manager
Senior Civil Engineer
8401 Laguna Palms Way
Elk Grove, CA 95758
(916) 478-2236

4. Project Location:

The Project site consists of the ~~proposed~~ Project area, which extends from the existing Laguna Creek Trail, located south of the intersection of Beckington Drive and White Peacock Way, to a connection at East Stockton Boulevard approximately 750 feet south of the intersection of East Stockton Boulevard and Cantwell Drive, in Elk Grove, Sacramento County.

5. Project Applicant's Name and Address:

City of Elk Grove
8401 Laguna Palms Way
Elk Grove, CA 95758

6. General Plan Designation:

Public Services (PS) and Resource Management and Conservation (RMC)

7. Zoning:

O (Open Space).

8. Description of Project:

The Project Applicant (City of Elk Grove) proposes to construct the Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project. The ~~proposed~~ Project will include the construction of a 1-mile long multi-functional corridor along the banks adjacent to segments of Laguna Creek and Whitehouse Creek.

The Project ~~would be constructed in two phases. Phase I would~~ include<u>s</u> construction of a ~~12- to 16~~<u>10</u>-foot-wide paved surface (no pavement striping) with

2 ~~-3~~ feet of unpaved shoulders. Pre-fabricated steel or concrete bridges would provide necessary access across Laguna and Whitehouse Creeks. The Project would be constructed in phases, dependent on funding, with the last phase of the Project ~~Phase II of the Project would consist of~~ converting the paved maintenance access road into a Class 1 multi-functional trail corridor connection between East Stockton Boulevard and Camden Park, with pavement striping and trail amenities, such as benches and trash containers. This last p~~P~~hase ~~II~~ of the Project would complete a gap within the trail system in accordance with the City's Bicycle, Pedestrian, and Trails Master Plan.

Additional ~~Phase I or II~~ Project features would include construction of floodway excavation areas ~~retention basins~~ to offset the floodplain encroachments from the maintenance road/multi-functional trail and fencing to prevent pedestrian incursion beyond the multi-functional corridor. Right-of-way acquisitions and temporary construction easements are needed where the multi-functional corridor passes through privately-owned parcels and will be obtained during ~~Phase I~~final design of the Project.

This Project is partially funded through the City's Storm Drainage Master Plan and is subject to compliance with the California Environmental Quality Act (CEQA). The lead agency for CEQA compliance is the City. The Project is also subject to compliance with the National Environmental Policy Act (NEPA) due to anticipated federal permitting through the U.S. Army Corps of Engineers federal nexus during the Clean Water Act Section 404 permitting process for project impacts to waters of the U.S.

9. Surrounding Land Uses and Setting:

The current land use and zoning designations within the Project site include Regional Commercial (RC), Resource Management and Conservation (RMC), Public Services (PS), Shopping Center (SC), Public Services (PS), and Open Space (O). The Project site is relatively flat with no major topographic features. There are no existing buildings or other improvements within the Project site. The site has been farmed in the past but has been fallow recently, so little native vegetation remains. The Project site contains Laguna Creek and Whitehouse Creek and associated wetland features.

The current land use and zoning designations adjacent to the Project site include Low Density Residential (RD-4 and RD-5), Agricultural Residential (AR-5), Rural Residential (RR), Shopping Center (SC), and Public Services (PS). The Public Services (PS) area is partially in use as the East Lawn Elk Grove Memorial Park and Mortuary. The area located between Whitehouse Creek and East Stockton Boulevard is zoned for Shopping Center (SC) with land use designation Regional Commercial (RC) and is in use by Creekside Christian Church.~~The area north of the Project site is zoned~~ The Agricultural Residential (AR-5), Rural Residential, and Low Density Residential (RD-4 and RD-5) ~~(Low Density Residential) and is~~ areas are currently developed with single-family residential uses. ~~The area south of the Project site is zoned Institutional and SC – (Shopping Center) and is in use as a cemetery and developed with retail uses.~~ The area east of the Project ~~site~~ is zoned as Open Space ~~RD-5~~ and is currently developed as Camden Park~~a park~~. State Route (SR) 99 and East Stockton Boulevard are located immediately west of the Project site.

~~The Project site is relatively flat with no major topographic features. There are no existing buildings or other improvements on the site. The site has been farmed in the past but has been fallow recently, so little native vegetation remains. The Project site contains Laguna Creek and Whitehouse Creek and associated wetland features.~~

B. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below could result in potentially significant impacts if mitigation measures are not implemented. As discussed on the following pages, where potentially significant impacts are identified, feasible mitigation was identified to reduce the impacts to a less than significant level. Therefore, potentially significant impacts that are mitigated to “Less Than Significant” are shown here.

☐	Aesthetics	☐	Agriculture and Forestry	☒	Air Quality
☒	Biological Resources	☒	Cultural Resources	☐	Energy
☒	Geology/Soils	☐	Greenhouse Gas Emissions	☒	Hazards and Hazardous Materials
☒	Hydrology/Water Quality	☐	Land Use/Planning	☐	Mineral Resources
☒	Noise	☐	Population/Housing	☐	Public Services
☐	Recreation	☐	Transportation	☒	Tribal Cultural Resources
☐	Utilities/Service Systems	☐	Wildfire	☒	Mandatory Findings of Significance

C. DETERMINATION

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Christina Castro, P.E. CIP Division Manager City of Elk Grove	11/2/2022 Date

D. EVALUATION OF ENVIRONMENTAL IMPACTS

Each of the responses in the following environmental checklist considers the whole action involved, including project-level, cumulative, on-site, off-site, indirect, construction, and operational impacts. A brief explanation is provided for all answers and supported by the information sources cited.

1. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone).

2. A "Less Than Significant Impact" applies when the ~~proposed~~ project would not result in a substantial and adverse change in the environment. This impact level does not require mitigation measures.

3. A "Less Than Significant Impact With Mitigation Incorporated" applies when the ~~proposed~~ project would not result in a substantial and adverse change in the environment after additional mitigation measures are applied.

4. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect is significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

I. AESTHETICS

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

REGULATORY SETTING

CEQA establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of aesthetic, natural, scenic and historic environmental qualities (CA Public Resources Code Section 21001[b])."

DISCUSSION OF IMPACTS

a) No Impact. No designated state scenic vistas or highways are within or near the Project site (Caltrans 2011); therefore, there would be no impact.

b) Less than Significant Impact. There are no designated scenic vistas or highways located within or adjacent the Project area (Caltrans 2011). Further, there are no historic buildings within or adjacent the Project area.

The Project area predominantly consists of grassland, with few trees. The one exception is the dense stand of eucalyptus trees bordering Shortline Lake, located just north of the Project area. While some trees will be removed from within the grassland, the Project has been designed to avoid any impacts to the dense eucalyptus stand. Due to the minimal removal of trees (less than 5) and vegetation (6 acres out of the 132-acre open grassland), the Project will have a less than significant impact.

c) Less than Significant Impact. The Project location and setting provides the context for determining the type of changes to the existing visual environment and potential degradation of the existing visual character or quality of the site. The Project site currently consists of annual grassland, with associated emergent vegetation within Laguna Creek, Whitehouse Creek, and adjacent wetland features. North, south, and west of the ~~proposed~~ Project site is highly developed with institutional uses, low-density residential, and commercial areas. The Project area is zoned as open space, public services, and a shopping center. East of the Project site lies Camden Park, which includes Camden Lake, landscaped areas, ornamental tree species, and segments of the Laguna Creek Bike Trail.

The ~~proposed~~ Project would construct a maintenance access road and bridges to provide maintenance access to Laguna Creek and Whitehouse Creek. As part of the last construction phase of the Project,~~a second phase~~ the maintenance access road would be converted into a Class 1 multi-use trail corridor, extending the existing Laguna Creek Trail from Camden Park to East Stockton Boulevard. The ~~proposed~~ Project would be consistent with the existing zoning and visual character of Laguna Creek Trail, Camden Spur Trail, surrounding residential and open space/park areas, and current development, as it is a continuation the Laguna Creek Trail. Therefore, impacts are considered less than significant.

d) **Less than Significant Impact.** The ~~proposed~~ Project would construct a maintenance access road and bridges to provide maintenance access to Laguna Creek and Whitehouse Creek. As part of the last construction phase of the Project, ~~a second phase~~ the maintenance access road would be converted into a Class 1 multi-use trail corridor, extending the existing Laguna Creek Trail from Camden Park to East Stockton Boulevard. No new sources of light or glare are anticipated to be incorporated into the ~~proposed~~ Project for the maintenance access road or the extension of Laguna Creek Trail. Construction of the ~~proposed~~ Project may require the use of construction lighting after daylight hours, which may create a new source of light or glare in the Project area. The nearest residential home to the ~~proposed~~ Project is approximately 50-feet from ~~proposed~~ construction activities. However, any new source of construction lighting would be temporary and limited to the time of construction. Therefore, impacts are considered less than significant.

II. AGRICULTURE AND FOREST RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

REGULATORY SETTING

Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) was established in 1982 in response to the critical need for assessing the location, quality, and quantity of agricultural lands and conversion of these lands over time. Important Farmland Maps are prepared by the FMMP pursuant to Section 65570 of the California Government Code. To create maps, FMMP combines current land use information with U.S. Department of Agriculture – Natural Resources Conversion Service (NRCS) soil survey data. According to the 2016 Important Farmland Series for Sacramento County, the majority of the Project site is identified as Grazing Land, whereas the eastern and western terminus of the Project site is listed as Urban and Built Up (CDC 2017).

California Land Conservation Act of 1965

The California Land Conservation Act of 1965 – commonly referred to as the Williamson Act – enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use (DOC 2019). The program is voluntary, locally administered and offers preferential property taxes on lands which have enforceable restrictions on their use via the contracts between individual landowners and local governments. According to the Sacramento County Williamson Act FY 2015/2016 Map, the land within the Project site is listed as either Non-Enrolled Land or Urban and Built-Up Land, both of which are considered Non-Williamson Act lands (DOC 2019).

DISCUSSION OF IMPACTS

a) **No Impact.** The Project site is designated by the Farmland Mapping and Monitoring Program (FMMP) as Urban and Built-Up Land, and Grazing Land (DOC 2016). Implementation of the ~~proposed~~ Project would not result in the conversion of any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use. Therefore, no impact to farmland resources would occur due to the ~~proposed~~ Project.

b) **No Impact.** According to the Elk Grove Assessor Parcel Viewer (City of Elk Grove 2019), the majority of the Project area is zoned for Public Services (PS) with some areas zoned as Shopping Center (SC), and Open Space (O). Additionally, according to the Sacramento County Williamson Act FY 2015/2016 Map, the land within the Project site is listed as either Non-Enrolled Land or Urban and Built-Up Land, both of which are considered Non-Williamson Act lands. The ~~proposed~~ Project would not conflict with the existing zoning for agricultural use or Williamson Act contract lands; therefore, no impact would occur.

c) **No Impact.** There is no forestland, timberland or timberland zoned for Timberland Production within the Project vicinity or Project area. The Project would not conflict with existing zoning for, or cause rezoning of, forestland, timberland, or timberland zoned Timberland Production; therefore, no impact would occur.

d) **No Impact.** There is no forestland or forest resources located within the Project vicinity or Project area. The Project would not result in the loss of forest land or conversion of forest land to non-forest use; therefore, no impact would occur.

e) **Less than Significant .** The ~~proposed~~ Project would construct a maintenance access road and bridges to provide maintenance access to Laguna Creek and Whitehouse Creek. As part of the last construction phase of the Project~~a second phase~~, the maintenance access road would be converted into a Class 1 multi-use trail corridor, extending the existing Laguna Creek Trail from Camden Park to East Stockton Boulevard. The ~~proposed~~ Project activities would remove approximately 64 acres of vegetation out of a roughly 132 acre area classified as grazing land. This is a minimal impact that would not result in the conversion of farmland to non-agricultural use, or conversion of forestland to non-forest use; therefore, the impact would be less than significant.

III. AIR QUALITY

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☒	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

REGULATORY SETTING

Federal and State

Clean Air Act

The United States Environmental Protection Agency (USEPA) is responsible for addressing national and interstate air pollution issues and setting policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance for air pollution programs, and sets National Ambient Air Quality Standards (NAAQS), also known as Federal standards. There are Federal standards for the following criteria air pollutants, which were identified from provisions of the Clean Air Act of 1970:

- Ozone;
- Particulate matter (PM10 and PM2.5);
- Nitrogen dioxide;
- Carbon monoxide (CO); and
- Lead Sulfur dioxide.

Federal standards were set to protect public health, including that of sensitive individuals; thus, the standards continue to change as more medical research is available regarding the health effects of the criteria pollutants. Primary Federal standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health (California Air Resources Board [CARB] 2017).

State Implementation Plan

A State Implementation Plan is a document prepared by each state describing existing air quality conditions and measures that would be followed to attain and maintain Federal standards. The State Implementation Plan for the State of California is administered by the CARB, which has overall responsibility for Statewide air quality maintenance and air pollution prevention. California's State Implementation Plan incorporates individual Federal attainment plans for regional air districts—air districts prepare their Federal attainment plans, which are sent to the CARB to be approved and incorporated into the California State Implementation Plan. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms.

Federal and State Ambient Air Quality Standards

California and the federal government have established standards for several different pollutants. For some pollutants, separate standards have been set for different measurement periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). The pollutants of greatest concern in the Project area are ozone, particulate matter-2.5 microns ($PM_{2.5}$) and particulate matter-10 microns (PM_{10}). Table 2 shows the state and federal attainment status within Sacramento County for a variety of pollutants.

The Federal Clean Air Act requires the EPA to designate areas as attainment, nonattainment, or unclassified for the NAAQS. These designations are similar to their state-level counterparts. Areas that were nonattainment but have recently achieved attainment are referred to as maintenance areas. Table 3 provides a summary of the NAAQS and California Ambient Air Quality Standards (CAAQS) attainment status in the vicinity of the Project.

Table 2. NAAQS and CAAQS Attainment Status for Shasta County

Criteria Pollutants	State Designation	Federal Designation
Ozone	Nonattainment	Nonattainment
PM10	Nonattainment	Attainment
PM2.5	Attainment	Nonattainment
Carbon Monoxide	Moderate Attainment	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	-
Lead	Attainment	Unclassified/Attainment
Hydrogen Sulfide	Unclassified	-
Visibility Reducing Particles	Unclassified	-

Source: California Air Resources Board, 2018
https://www.arb.ca.gov/desig/adm/adm.htm

Table 3. Ambient Air Quality Standards

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 μg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 μg/m^3)		0.070 ppm (137 μg/m^3)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 μg/m^3	Gravimetric or Beta Attenuation	150 μg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 μg/m^3		—		
Fine Particulate Matter (PM2.5)[9]	24 Hour	—	—	35 μg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 μg/m^3	Gravimetric or Beta Attenuation	12.0 μg/m^3	15 μg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 μg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 μg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 μg/m^3)		0.053 ppm (100 μg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 μg/m^3)	Ultraviolet Fluorescence	75 ppb (196 μg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 μg/m^3)	
	24 Hour	0.04 ppm (105 μg/m^3)		0.14 ppm (for certain areas)[11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[11]	—	
Lead[12,13]	30 Day Average	1.5 μg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 μg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 μg/m^3		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 μg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 μg/m^3)	Gas Chromatography			

See footnotes on next page …

For more information please call ARB-PIO at (916) 322-2990 | California Air Resources Board (5/4/16)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.
8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
11. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

For more information please call ARB-PIO at (916) 322-2990 **California Air Resources Board (5/4/16)**

Source: CARB 2019

Local

Sacramento Metropolitan Air Quality Management District
The Sacramento Metropolitan Air Quality Management District (SMAQMD) is the primary agency responsible for planning to meet Federal and State ambient air quality standards in Sacramento County and the larger Sacramento Ozone Nonattainment Area.

The SMAQMD operates monitoring stations in Sacramento County, develops rules, regulations, and CEQA thresholds for stationary sources and equipment, prepares emissions inventory and air quality management planning documents, and conducts source testing and inspections. Table 4 depicts the SMAQMD Thresholds of Significance for Projects subject to CEQA (SMAQMD 2009a).

The SMAQMD's air quality management plans include control measures and strategies to be implemented to attain State and Federal ambient air quality standards in Sacramento County. The SMAQMD then implements these control measures as regulations to control or reduce criteria pollutant emissions from stationary sources or equipment. Applicable SMAQMD attainment plans include:

- An 8-Hour Ozone Attainment and Reasonable Further Progress Plan; and
- Revised 8-Hour Ozone Attainment and Reasonable Further Progress Plan.

The 2009, 8-Hour Ozone Attainment and Reasonable Further Program Plan describes measures to be implemented by the air districts in the Sacramento Federal Nonattainment Area to achieve the 1997 ozone NAAQS. This plan includes the information and analyses to fulfill the Federal Clean Air Act (CAA) requirements for demonstrating reasonable further progress and attainment of the 1997, 8-hour ozone NAAQS for the Sacramento region. In addition, this plan establishes an updated emissions inventory projected for a 2019 attainment date, provides photochemical modeling results, proposes the implementation of reasonably available control measures, and sets new motor vehicle emission budgets for transportation conformity purposes for the reasonable further progress milestone years and the 2019 attainment year. The emission reduction strategy is based on reductions in both reactive organic gases (ROG) and nitrogen oxide (NOx) emissions.

Future control measures include State and Federal control strategies (e.g., smog check program improvements and cleaner heavy-duty trucks and off-road equipment), local mobile source incentive programs, Sacramento Area Council of Governments' transportation control measures, a measure to reduce biogenic volatile organic compounds (VOC) from Sacramento's urban forest, indirect source rules related to construction and operation of development Projects, and new and more stringent stationary source control rules (SMAQMD 2011).

In 2011, the air districts comprising the SFNA reviewed the 2009 Ozone Attainment Plan and concluded that certain stationary source control measures and transportation control measures would not be adopted or implemented within the time frames outlined in the plan. The air districts submitted a revision to CARB and USEPA. For the SMAQMD, the revision resulted in removal of two stationary source control measures (stationary internal combustion engines at major stationary sources and asphaltic concrete) and two indirect source review rule measures commitments, substitution of one transportation control measure (TCM) and rescheduling several stationary source measures and TCMs.

Table 4. SMAQMD Thresholds of Significance

	Construction Phase	Operational Phase
Mass Emission Thresholds		
Nitrogen Oxide (NOx) (Ozone precursor)	85 pounds/day	65 pounds/day
Reactive Organic Gases (ROG) (VOC) (Ozone precursor)	None.	65 pounds/day
Particulate Matter (PM10)	Zero (0). If all feasible best available control technology (BACT) and BMPs are applied, then 80 pounds/day and 14.6 tons/year.	Zero (0). If all feasible BACT and BMPs are applied, then 80 pounds/day and 14.6 tons/year.
Particulate Matter (PM2.5)	Zero (0). If all feasible BACT and BMPs are applied, then 82 pounds/day and 15 tons/year.	Zero (0). If all feasible BACT and BMPs are applied, then 82 pounds/day and 15 tons/year.
Concentration Thresholds (Based on the California Ambient Air Quality Standard, identical threshold for ~~both~~ all phases of development.		
Carbon Monoxide (CO)	20 ppm 1-hour standard (23 mg/m^3); 9 ppm 8-hour (10 mg/m^3)	
Nitrogen Dioxide (NO2)	0.18 ppm 1-hour standard (339 (339 µg/m^3); 0.03 ppm Annual Arithmetic Mean (57 µg/m^3)	
Sulphur Dioxide (SO2)	0.25 ppm 1-hour standard (665 µg/m^3); 0.04 ppm 24-hour standard (105 µg/m^3)	
Lead	1.5 µg/m^3 30-day average	
Visibility Reducing Particles	Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more due to particles when relative humidity is less than 70 percent	
Sulfates	25 µg/m^3 24-hour standard	
Hydrogen Sulfide (H2S)	0.03 ppm (42 µg/m^3) 1-hour standard	
Vinyl Chloride	0.01 ppm (26 µg/m^3) 24-hour standard	

PM10 Implementation/Maintenance Plan and Redesignation Request for Sacramento County

On October 28, 2010, the SMAQMD Governing Board approved the PM10 maintenance plan and request for redesignation for the 1997 PM10 NAAQS (SMAQMD 2010a). In 2002, the USEPA officially determined that Sacramento County had attained the PM10 NAAQS by the December 31, 2000, attainment deadline. This plan fulfills the requirements for the USEPA to redesignate Sacramento County from nonattainment to attainment of the PM10 NAAQS.

On December 7, 2010, following review of the maintenance plan and re-designation request, CARB submitted it to the USEPA for approval. The USEPA proposed re-designation of the area on July 24, 2013 and opened a public comment period for this action. Final USEPA approval of the re-designation is pending.

2009 Triennial Report and Plan Revision

This plan is intended to comply with the requirements of the California Clean Air Act (CCAA) as related to bringing the region into compliance with the CAAQS for ozone. The SMAQMD has prepared several triennial progress reports that build upon the 1994 Sacramento Area Regional

Ozone Attainment Plan. The 2009 Triennial Report and Plan Revision (SMAQMD 2010b) is the most recent report. The triennial progress report includes a current emission inventory and projected future inventories of ROG and NOx emissions in Sacramento County. The future inventories reflect population growth rates, travel, employment, industrial/commercial activities, and energy use, as well as controls imposed through local, State, and Federal emission reduction measures. The triennial report discusses rules that the SMAQMD has adopted during the previous three years, incentive programs that have been implemented, and other measures that would supplement those in the Ozone Attainment Plan to achieve the required five percent per year reduction required by the CCAA.

The SMAQMD also has several rules that relate to the ~~proposed~~ Project, which are summarized below.

Rule 201 – General Permit Requirements: Requires any Project that includes the use of certain equipment capable of releasing emissions to the atmosphere as part of Project operation to obtain a permit from the SMAQMD prior to operation of the equipment. The applicant, developer, or operator of a Project that includes an emergency generator, boiler, or heater should contact the SMAQMD to determine if a permit is required. Portable construction equipment with an internal combustion engine over 50 horsepower are required to have a SMAQMD permit or a CARB portable equipment registration.

Rule 401 – Ringelmann Chart: Prohibits individuals from discharging into the atmosphere from any single source of emissions whatsoever any air contaminant whose opacity exceeds certain specified limits.

Rule 402 – Nuisance: To protect the public health, Rule 402 prohibits any person from discharging such quantities of air contaminants that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public.

Rule 403 – Fugitive Dust: Requires a person to take every reasonable precaution not to cause or allow the emissions of fugitive dust from being airborne beyond the property line from which the emission originates, from construction, handling or storage activity, or any wrecking, excavation, grading, clearing of land or solid waste disposal operation.

Rule 453 – Cutback and Emulsified Asphalt Paving Materials: Asphalt paving operations that may be associated with implementation of a Project would be subject to Rule 453. This rule applies to the manufacture and use of cutback asphalt and emulsified asphalt for paving and maintenance operations.

Rule 902 – Asbestos: To protect the public health and the environment, Rule 902 sets specific procedures to follow regarding handling, transport, and disposal of asbestos containing materials.

The Guide to Air Quality Assessment in Sacramento County also provides methods to analyze air quality impacts from plans and Projects, including screening criteria, thresholds of significance, calculation methods, as well as mitigation measures that help assist lead agencies in complying with the CEQA. These guidelines require that basic construction emission control practices be implemented for emissions regardless of the significance determination.

Toxic Air Contaminants

A toxic air contaminant (TAC) is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. The California Almanac of Emissions and Air Quality (CARB 2013) presents the relevant concentration and cancer risk data for the ten TACs that pose the most substantial health risk in California based on available data. These TACs are as follows: acetaldehyde, benzene, 1.3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and DPM.

Some studies indicate that DPM poses the greatest health risk among the TACs listed above. A 10-year research program (CARB 1998) demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. In addition to increasing the risk of lung cancer, exposure to diesel exhaust can have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution as well, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems.

DPM differs from other TACs in that it is not a single substance but a complex mixture of hundreds of substances. Although DPM is emitted by diesel-fueled, internal combustion engines, the composition of the emissions varies, depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TACs, however, no ambient monitoring data are available for DPM because no routine measurement method currently exists. The CARB has made preliminary concentration estimates based on a DPM exposure method. This method uses the CARB emissions inventory's PM10 database, ambient PM10 monitoring data, and the results from several studies to estimate concentrations of DPM.

Odors

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., emotional reaction) to physiological (e.g., nausea).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors is subjective and varies considerably among the population. Some individuals have the ability to smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person may be perfectly acceptable to another.

The Sacramento Valley Basinwide Air Pollution Control Council

The Sacramento Valley Basinwide Air Pollution Control Council (Control Council) is authorized pursuant to California Health and Safety Code Section (HSC) section 40900 (SMAQMD 2016) to carry out the following activities relevant to the Proposed Project pursuant to State Law and the CCR (reference HSC Section 41865 and Section 41866; CCR Section 80100 et seq.):

- Assist Districts in the Sacramento Valley Air Basin in coordinating all air pollution control activities to ensure that the entire Sacramento Valley Air Basin is, or will be, in compliance with the requirements of State and Federal law.

City of Elk Grove General Plan (As Amended)
The Goals listed below are excerpted from the City of Elk Grove General Plan (as amended) – Natural Resources chapter (City of Elk Grove 2021). These goals are designed to guide improving air quality, and promote clean, sustainable transportation options. Each of the main goals have detailed policies stating the City's priorities and implementation strategies. For all policies related to air quality, the City's General Plan Update 2021 can be found here: http://www.elkgrovecity.org/city_hall/departments_divisions/planning/a_brighter_future/documents

Goal NR-4: Improved Air Quality
Improving air quality is a key challenge for the Sacramento Valley region and is one of the City's top policy priorities. Because vehicle emissions are the major source of air pollution in Elk Grove and the surrounding area, promoting clean, sustainable transportation options—including public transit, bicycling, and walking—as alternatives to motorized vehicles is an important strategy for reducing air pollution and improving air quality. Other strategies include measures to control dust and reduce construction emissions, and standards for locating sensitive land uses (such as hospitals, schools, day care facilities, and senior housing) away from sources of air pollution. Policies NR-4-1 through NR-4-13 are specific to air pollutant emissions requirements.

Goal NR-5: Reduced Greenhouse Gas Emissions That Align With Local, State, And Other Goals
In accordance with State law aimed at combatting climate change, the City will take steps to reduce local GHG emissions, as set forth in Elk Grove's adopted Climate Action Plan (CAP). This includes working to achieve GHG reduction targets related to transportation and energy usage in buildings, as well as coordinating with regional and State agencies to reduce GHG emissions from other stationary sources. Policies NR-5-1 through NR-5-4 are specific to greenhouse gas emissions.

Goal NR-6: Reduced Energy Demand and Increased Renewable Sources
The City seeks to promote sustainable energy in Elk Grove through an integrated approach that addresses both the demand and supply sides of the energy equation. This includes steps to reduce energy consumption through energy conservation and efficiency and to encourage the use of energy derived from renewable sources, particularly solar energy. Elk Grove will need to continue increasing available renewable energy options to meet rising State standards and consumer demands. Investing in renewable energy technologies, incentivizing private clean energy projects, and ensuring ease of installation and use of renewable energy infrastructure will help the City meet or exceed these goals. Policies NR-6-1 through NR-6-5 are specific to energy conservation, whereas NR-6-6 and NR-6-7 are specific to renewable energy sources.

DISCUSSION

a) No Impact. A project is considered to conflict with or obstruct implementation of regional air quality plans if it would be inconsistent with the emissions inventories contained in the regional air quality plans. Emission inventories are developed based on projected increases in population growth and vehicle miles traveled (VMT) within the region. ~~Phase I of the proposed~~ The Project would include construction of a maintenance access road from the existing Laguna Creek Trail. The Project would not result in an increase in population or VMT. During the final construction phase ~~Phase II~~ of the Project would consist of converting the maintenance access road into a Class 1 multi-use trail corridor connection between the Camden Park and East Stockton Boulevard, with striping and trail amenities incorporated as necessary. Implementation of the ~~proposed~~ Project would increase the connectivity of the City's off-street trail network and encourage the use of alternative modes of transportation, potentially reducing the use of personal motor vehicles. Long-term operation of the ~~proposed~~ Project is anticipated to result in overall beneficial air quality impacts and would not be anticipated to conflict with existing or future air quality planning efforts. Therefore, no impact would occur.

b) **Less Than Significant Impact with Mitigation.** Sacramento County is currently designated as in "attainment" for all State and federal ambient air quality standards, except ozone, PM10, and PM2.5. The current "non-attainment" status for ozone, PM10, and PM2.5 signifies that these pollutant concentrations have exceeded the established standard.

In order to evaluate ozone and other criteria air pollutant emissions and support attainment goals for those pollutants, the SMAQMD developed the Guide to Air Quality Assessment in Sacramento County which has established significance thresholds for emissions of PM2.5 and PM10, and ozone precursors – reactive organic gases (ROG) and nitrous oxides (NOx). The significance thresholds, expressed in pounds per day (lbs./day), listed in Table 5 below represent the SMAQMD's current established thresholds of significance for use in the evaluation of air quality impacts associated with proposed land development projects. Thus, if the ~~proposed~~ Project's emissions exceed the pollutant thresholds presented in Table 5, the Project would have the potential to result in significant effects to air quality, and affect the attainment of federal and State Ambient Air Quality Standards.

The ~~proposed~~ Project does involve the construction of a new maintenance access road but would not affect local motorized vehicle traffic operations or patterns. The Project does not include the operation of any major stationary sources of emissions. Implementation of the ~~proposed~~ Project would increase the connectivity of the City's off-street trail network and encourage the use of alternative modes of transportation, potentially reducing the use of personal motor vehicles. Long-term operation of the ~~proposed~~ Project is anticipated to result in overall beneficial air quality impacts.

Table 5. Maximum Daily Construction Emissions and Local Thresholds of Significance

Thresholds of Significance		
Emissions	**Road Construction Emissions Model Estimates**	**SMAQMD Construction Phase Mass Emissions Thresholds (pounds per day)**
NO_x	36.6 lbs/day	85 lbs/day
ROG (VOC)	2.9 lbs/day	NONE
PM_{10}	11.5 lbs/day (maximum)	**Zero (0)**. If all feasible BACT/BMPs are applied, then 80 pounds/day and 14.6 tons/year
$PM_{2.5}$	3.3 lbs/day (maximum)	**Zero (0)**. If all feasible BACT/BMPs are applied, then 80 pounds/day and 14.6 tons/year
Source: SMAQMD 2019		

Short-term increases in emissions would occur during construction. The construction period would be limited and temporary. According to SMAQMD CEQA Guidelines (SMAQMD 2019), construction-generated NOx and PM emissions shall be evaluated for significance under CEQA on a daily mass emission basis because they are pollutants of regional concern.

Short-term construction-related emissions resulting from the Project construction were estimated using the Road Construction Emissions Model, a spreadsheet-based model specifically designed to estimate emissions with construction of roadway facilities and other linear projects (**Appendix A**). Table 5 provides the results of the Road Construction Emissions Model estimates for the Project construction phase compared to SMAQMD thresholds of significance.

The Project would be well below emissions levels for NOx. The Project would generate minimal amounts of PM10 and PM2.5 based on the construction emissions model; therefore, SMAQMD Basic Construction Emission Control Practices as described in mitigation measure **AQ-1** shall be implemented where feasible. With the implementation of measure **AQ-1**, any potentially significant impacts would be reduced to a less than significant level; therefore, impacts to air quality standards are considered less than significant with mitigation incorporated.

AQ-1: Implement SMAQMD Basic Construction Emission Control Practices, where feasible:

- Water all exposed surfaces two times daily. Exposed surfaces include (but are not limited to) soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least 2 feet of freeboard space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways shall be covered.
- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speeds on unpaved roads to 15 miles per hour.
- All roadway, driveway, sidewalk, and parking lot paving should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.
- Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation [California Code of Regulations, Title 13, sections 2249 and 2449.1].

c) **Less Than Significant Impact.** SMAQMD defines sensitive receptors as facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants or may experience adverse effects from unhealthful concentrations of air pollutants. Hospitals, clinics, schools, convalescent facilities, and residential areas are examples of sensitive receptors. The nearest sensitive receptors in the vicinity of the Project site are residences located approximately 40 feet north of the Project site, located on Baisley Court.

Construction activities are anticipated to involve the operation of diesel-powered equipment. In 1998, the CARB identified diesel exhaust as a TAC. Cancer health risks associated with exposures to diesel exhaust typically are associated with chronic exposure, in which a 70-year exposure period often is assumed. Although elevated cancer rates can result from exposure periods of less than 70 years, acute exposure (i.e., exposure periods of 2 to 3 years) to diesel exhaust typically are not anticipated to result in an increased health risk because acute exposure typically does not result in exposure concentrations that would represent a health risk. Health impacts associated with exposure to diesel exhaust from Project construction are anticipated to be less than significant because construction activities are expected to occur well below the 70-year exposure period used in health risk assessments. Additionally, emissions would be short-term and intermittent in nature, and therefore would not generate TAC emissions at high enough exposure concentrations to represent a health hazard. Therefore, construction of the ~~proposed~~ Project is not anticipated to result in an elevated cancer risk to exposed persons.

Additionally, a review of information available through United States Geological Survey (USGS) indicated that the nearest ultramafic rock formation potentially associated with naturally occurring asbestos (NOA) is approximately 23 miles northeast of the Project area, along the eastern banks of Folsom Lake (USGS 2015). Therefore, overall exposure of sensitive receptors to substantial pollutant concentrations from the ~~proposed~~ Project would be less than significant and no mitigation is required.

d) **Less Than Significant Impact.** While offensive odors rarely cause physical harm, they can be unpleasant, leading to annoyance and distress among the public and can generate citizen complaints to local governments and air districts. Project-related odor emissions would be limited to times when equipment would be utilized for construction and emission from equipment may be evident in the immediate surrounding area. Construction activities would be short-term and would not result in the creation of long-term objectionable odor because they would be quickly dispersed after equipment utilization. Therefore, due to the short-term nature of the construction activities, combined with limited exposure to sensitive receptors, impacts associated with development of the Project are considered less than significant and no mitigation is required.

IV. BIOLOGICAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

This section describes the natural resources present within and immediately surrounding the Project site and includes a discussion of the special-status species and sensitive habitats potentially occurring in the Project area. Also included is an analysis of the impacts that could occur to biological resources due to implementation of the ~~proposed~~ Project and appropriate mitigation measures to reduce or avoid significant impacts. The analysis of biological resources presented in this section is based on a review of the current Project description, the Biological Resources Report (**Appendix B**), and Aquatic Resources Delineation Report (**Appendix C**) prepared for the Project, available literature, and surveys conducted by Dokken Engineering biologists in April and June 2018.

REGULATORY SETTING

This section describes the Federal, State, and local plans, policies, and laws that are relevant to biological resources within the BSAs. Applicable Federal permits and approvals that will be required before construction of the Project are provided in Chapter 5.

Federal Regulations

<u>Federal Endangered Species Act</u>
The Federal Endangered Species Act (FESA) of 1973 (16 U.S.C. section 1531 et seq.) provides for the conservation of endangered and threatened species listed pursuant to Section 4 of the Act (16 U.S.C. section 1533) and the ecosystems upon which they depend. These species and

resources have been identified by the U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS).

Clean Water Act

The Clean Water Act (CWA) was enacted as an amendment to the Federal Water Pollutant Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to waters of the U.S. CWA serves as the primary Federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. CWA empowers the USEPA to set national water quality standards and effluent limitations, and includes programs addressing both point-source and non-point-source pollution. Point-source pollution originates or enters surface waters at a single, discrete location, such as an outfall structure or an excavation or construction site. Non-point-source pollution originates over a broader area and includes urban contaminants in storm water runoff and sediment loading from upstream areas. CWA operates on the principle that all discharges into the nation's waters are unlawful unless they are specifically authorized by a permit; permit review is CWA's primary regulatory tool. This Project will require a CWA Section 402 National Pollutant Discharge Elimination System (NPDES) Permit regulated by the EPA.

The United States Army Corps of Engineers (USACE) regulates discharges of dredged or fill material into waters of the U. S. These waters include wetlands and non-wetland bodies of water that meet specific criteria, including a direct or indirect connection to interstate commerce. USACE regulatory jurisdiction pursuant to Section 404 of the CWA is founded on a connection, or nexus, between the water body in question and interstate commerce. This connection may be direct (through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce) or may be indirect (through a nexus identified in USACE regulations).

The Regional Water Quality Control Board (RWQCB) has jurisdiction under Section 401 of the CWA and regulates any activity which may result in a discharge to surface waters. Typically, the areas subject to jurisdiction of the RWQCB coincide with those of USACE (i.e., waters of the U.S. including any wetlands). The RWQCB also asserts authority over "waters of the State" under waste discharge requirements pursuant to the Porter-Cologne Water Quality Control Act.

Executive Order 13112: Prevention and Control of Invasive Species

Executive Order (EO) 13112 (signed February 3, 1999) directs all Federal agencies to prevent and control introductions of invasive species in a cost-effective and environmentally sound manner. As part of the proposed action, the USFWS and USACE would issue permits and therefore would be responsible for ensuring that the proposed action complies with Executive Order 13112 and does not contribute to the spread of invasive species.

Executive Order 13186: Migratory Bird Treaty Act

EO 13186 (signed January 10, 2001) directs each Federal agency taking actions that could adversely affect migratory bird populations to work with USFWS to develop a Memorandum of Understanding that will promote the conservation of migratory bird populations. Protocols developed under the Memorandum of Understanding will include the following agency responsibilities:

- Avoid and minimize, to the maximum extent practicable, adverse impacts on migratory bird resources when conducting agency actions;
- Restore and enhance habitat of migratory birds, as practicable; and
- Prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

The EO is designed to assist Federal agencies in their efforts to comply with the Migratory Bird Treaty Act (MBTA) (50 Code of Federal Regulations [CFR] 10 and 21) and does not constitute any legal authorization to take migratory birds. Take is defined under the MBTA as "the action of or attempt to pursue, hunt, shoot, capture, collect, or kill" (50 CFR 10.12) and includes intentional take (i.e., take that is the purpose of the activity in question) and unintentional take (i.e., take that results from, but is not the purpose of, the activity in question).

State Regulations

California Environmental Quality Act
California State law created to inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities and to work to reduce these negative environmental impacts. The City of Elk Grove is the CEQA lead agency for this Project.

California Endangered Species Act
The California Endangered Species Act (CESA) (California Fish and Game (CFG) Code Section 2050 et seq.) requires the CDFW to establish a list of endangered and threatened species (Section 2070) and to prohibit the incidental taking of any such listed species except as allowed by the Act (Sections 2080-2089). In addition, CESA prohibits take of candidate species (under consideration for listing).

CESA also requires the CDFW to comply with CEQA (Pub. Resources Code Section 21000 et seq.) when evaluating incidental take permit applications (CFG Code Section 2081(b) and California Code Regulations, Title 14, section 783.0 et seq.), and the potential impacts the project or activity for which the application was submitted may have on the environment. CDFW's CEQA obligations include consultation with other public agencies which have jurisdiction over the project or activity [California Code Regulations, Title 14, Section 783.5(d)(3)]. CDFW cannot issue an incidental take permit if issuance would jeopardize the continued existence of the species [CFG Code Section 2081(c); California Code Regulations, Title 14, Section 783.4(b)].

Section 1602: Streambed Alteration Agreement
Under CFG Code 1602, public agencies are required to notify CDFW before undertaking any project that will divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Preliminary notification and project review generally occurs during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resources. These modifications are formalized in a Streambed Alteration Agreement that becomes part of the plans, specifications, and bid documents for the project.

Section 3503 and 3503.5: Bird and Raptors
CFG Code Section 3503 prohibits the destruction of bird nests and Section 3503.5 prohibits the killing of raptor species and destruction of raptor nests. Trees and shrubs are present in and adjacent to the study area and could contain nesting sites.

Section 3513: Migratory Birds
CFG Code Section 3513 prohibits the take or possession of any migratory non-game bird as designated in the MBTA or any part of such migratory non-game bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

Porter Cologne Water Quality Control Act
California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the State. It predates the CWA and regulates discharges to waters of the State. Waters of the State include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined and this definition is broader than the CWA definition of "pollutant". Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a project area are contained in the applicable RWQCB Basin Plan. In California, Regional Boards designate beneficial uses for all water body segments in their jurisdictions, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants, which are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-source point controls (NPDES permits or Waste Discharge Requirements), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

Regional Water Quality Control Boards
The SWRCB adjudicates water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWQCBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

Local Regulations

City of Elk Grove General Plan (As Amended)
The policies below are excerpted from the City of Elk Grove General Plan (as amended) (City of Elk Grove 2021). These policies are designed to guide conservation of native and non-native habitats, plants, and animals within the City's jurisdiction.

- Policy LU-3-22: Identify a mitigation program for critical habitat for special status species known to occur within the Study Areas. A proposed project determined to have a significant impact to habitat for special status species shall implement all feasible mitigation measures established in the program, including but not limited to land dedication (which may be located either inside or outside the corresponding Study Area) or fee payment, or both.
- Policy PT-1-11: In land uses adjacent to natural open space areas, provide on-site landscaping as a transition to natural habitats to the extent feasible.
- Policy NR-1-2: Preserve and enhance natural areas that serve, or may potentially serve, as habitat for special-status species. Where preservation is not possible, require that appropriate mitigation be included in the project.

- Policy NR-1-3: Support the establishment of multipurpose open space areas to address a variety of needs, including but not limited to maintenance of agricultural uses, wildlife habitat, recreational open space, aesthetic benefits, and flood control. To the extent possible, lands protected in accordance with this policy should be in proximity to Elk Grove to facilitate use of these areas by Elk Grove residents, assist in mitigation of habitat loss within the City, and provide an open space resource close to the urbanized areas of Elk Grove.
- Policy NR-1-4: Avoid impacts to wetlands, vernal pools, marshland, and riparian (streamside) areas unless shown to be technically infeasible. Ensure that no net loss of wetland areas occurs, which may be accomplished by avoidance, revegetation, restoration on-site or through creation of riparian habitat corridors, or purchase of credits from a qualified mitigation bank.
- Policy NR-1-5: Recognize the value of naturally vegetated stream corridors, commensurate with flood control and public desire for open space, to assist in removal of pollutants, provide native and endangered species habitat and provide community amenities.
- Policy NR-1-6: Encourage the retention of natural stream corridors, and the creation of natural stream channels where improvements to drainage capacity are required.
- Policy NR-1-7: Consider the adoption of Habitat Conservation Plans to protect rare, threatened, or endangered species.
- Policy NR-1-9: Encourage development clustering where it would facilitate on-site protection of woodlands, grasslands, wetlands, stream corridors, scenic areas, or other appropriate features such as active agricultural uses and historic or cultural resources under the following conditions and requirements. Clustering shall not be allowed in the Rural Area.
- Policy NR-2-1: Preserve large native oak and other native tree species as well as large nonnative tree species that are an important part of the City's historic and aesthetic character. When reviewing native or non-native trees for preservation, consider the following criteria:
  health of tree, safety hazards posed by the tree, suitability for preservation in place, biological value, aesthetic value, shade benefits, water quality benefits, runoff reduction benefits, and air quality benefits (pollutant reduction).
- Policy NR-2-5: Ensure that trees that function as an important part of the City's or a neighborhood's aesthetic character or as natural habitat on public and private land are retained or replaced to the extent possible during the development of new structures, roadways (public and private, including roadway widening), parks, drainage channels, and other uses and structures.

City of Elk Grove Swainson's Hawk Program

In 2003, the City established and adopted Chapter 16.130 (Swainson's Hawk Impact Mitigation Fees) of the Elk Grove Municipal Code, which establishes mitigation policies tailored for projects in Elk Grove that have been determined through the CEQA process to result in a "potential significant impact" on Swainson's hawk foraging habitat (City of Elk Grove, 2018). Chapter 16.130 requires mitigation for the loss of Swainson's hawk habitat at a 1:1 ratio. Mitigation can be achieved through the payment of a fee, which is used to fund the City's Swainson's hawk habitat restoration program, but this option may only be used, at this time, if the City has available credits. Other options for achieving mitigation through the code include the direct transfer to the City of a Swainson's hawk habitat conservation easement along with an easement monitoring endowment or the purchase of credits at a CDFW-approved conservation bank. The code requires that a site must be surveyed to determine whether it is suitable Swainson's hawk foraging habitat.

AFFECTED ENVIRONMENT

Prior to field surveys, a Biological Study Area (BSA) was defined as the ~~proposed~~ Project impact area and a 250-foot buffer from the existing City floodway easement, where feasible, to accommodate the design and facilitate construction. The Project impact area is defined as all areas that will be temporarily or permanently impacted by the Project, including ~~proposed~~ right of way, construction easements, cut and fill limits, potential staging areas, and access roads. The BSA encompasses approximately 132 acres and includes approximately 4,000 linear feet of Laguna Creek from East Stockton Boulevard to Camden Lake. The BSA is approximately 4,300 feet (0.8 miles) from east to west and approximately 1,700 feet (0.33 miles) from north to south.

Online databases from USFWS, CDFW California Natural Diversity Database (CNDDB), California Native Plant Society (CNPS), and NMFS were queried for presence of potential threatened, endangered, rare or special status species within USGS 7.5-minute quadrangles. These searches identified 51 regional species of special concern with potential to occur in the vicinity of the Project area. After biological surveys were conducted, each species' specific habitat requirements were compared to actual site conditions and the potential for occurrence was then determined. Raw data returned from the database queries is provided in the Biological Resources Report in **Appendix B**.

General biological surveys and habitat assessments were conducted by Dokken Engineering biologists, Andrew Dellas and Scott Salembier on April 4, 2018. Jurisdictional delineations were conducted by Dokken Engineering biologists, Andrew Dellas and Courtney Owens on April 24, 25 and 26, 2018 to identify jurisdictional resources present within the BSA. Previous to the current 2018 survey efforts, ECORP Consulting Inc. had performed a wetland delineation for the East Lawn Cemetery Expansion (2006-2007). These delineation results have since expired; however, the mapping efforts from the ECORP delineation were used as reference for aquatic feature locations. Focused rare plant surveys were conducted by Dokken Engineering biologists, Andrew Dellas and Courtney Owens on April 24, 25 and 26, 2018, as well as Andrew Dellas and Scott Salembier on June 21, 2018, during the appropriate blooming season for species determined to have potential to occur within the BSA.

Dominant land cover and vegetative communities within the BSA consist of disturbed/urban, annual grassland, eucalyptus, freshwater pond, perennial creeks, vernal pools, vernal swales, seasonal wetlands, seasonal wetland swales, and emergent marsh (**Figure 5**). Waters and Vegetation Communities within the BSA).

Hydrological resources within the BSA include Laguna Creek, Whitehouse Creek, and associated wetland features: vernal pools, vernal swales, seasonal wetlands, seasonal wetland swales, and emergent marsh. Laguna Creek and Whitehouse Creek are part of the Morrison Creek watershed, and Laguna Creek subwatershed, within the Lower Sacramento River Hydrologic Unit (HUC 6) (Caltrans 2018). Whitehouse Creek flows from east to west and has been redirected around residential developments north of the BSA. Whitehouse Creek then joins with Laguna Creek within the BSA approximately 0.25 miles east of East Stockton Boulevard. Laguna Creek flows east to west travelling approximately 4000 linear feet through the BSA from Camden Lake to East Stockton Boulevard. All wetland and water features were assessed for Federal and State jurisdiction.

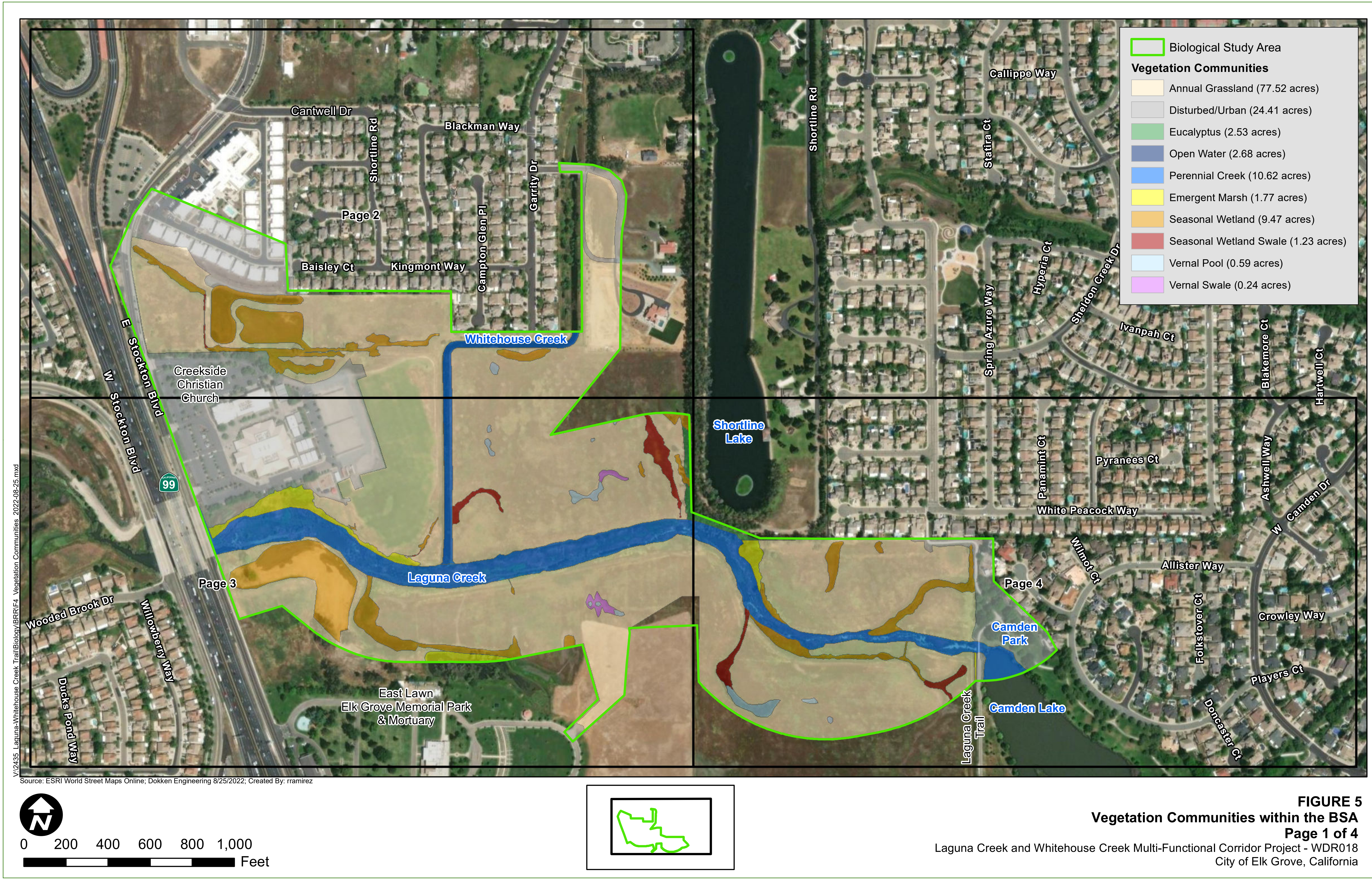


FIGURE 5
Vegetation Communities within the BSA
Page 1 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

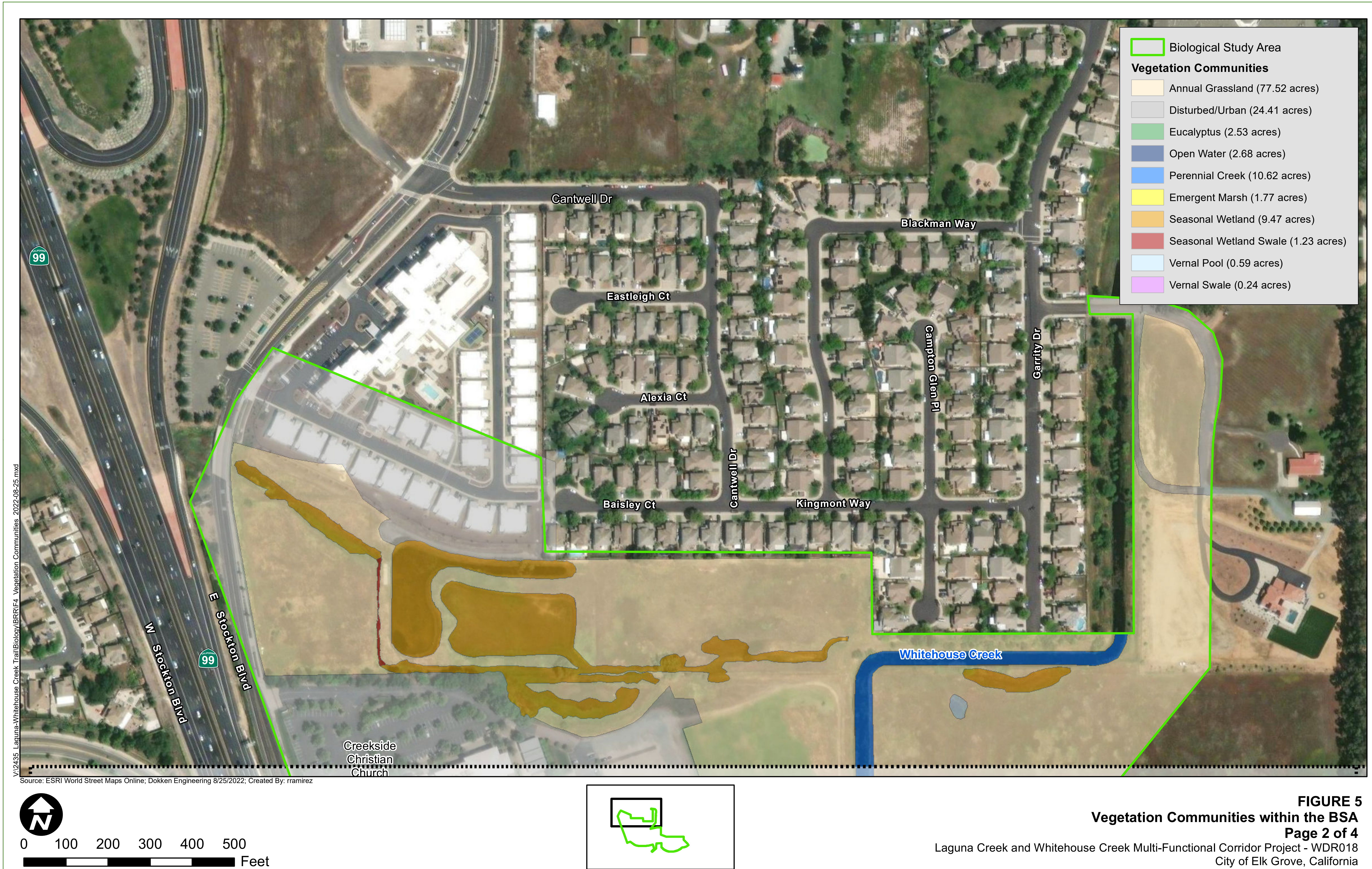


FIGURE 5
Vegetation Communities within the BSA
Page 2 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

Source: ESRI World Street Maps Online; Dokken Engineering 8/25/2022; Created By: rramirez

0 100 200 300 400 500 Feet

FIGURE 5
Vegetation Communities within the BSA
Page 3 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

Source: ESRI World Street Maps Online; Dokken Engineering 8/25/2022; Created By: rramirez

FIGURE 5
Vegetation Communities within the BSA
Page 4 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

a) **Less Than Significant Impact with Mitigation.** The following is a discussion on special status plant and animal species that were determined to have the potential of occurring within the Project area, potential impacts, and avoidance, minimization, and mitigation measures that when incorporated will reduce impacts to a less than significant impact.

The USFWS, CDFW CNDDB, CNPS, and NMFS database queries identified 51 species of special-status plant and wildlife species with potential to occur within the Project vicinity, 3 of which were identified as present within the Project area: Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), and western pond turtle (*Emys marmorata*). Two species, burrowing owl (*Athena cunicularia*) and Sanford's arrowhead (*Sagittaria sanfordii*) were determined to have a high potential to occur with the BSA; while song sparrow "Modesto population" (*Melospiza melodia*), tricolored blackbird (*Agelaius tricolor*), yellow-headed blackbird (*Xanthocephalus xanthocephalus*), vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardi*), Boggs Lake hedge-hyssop (*Gratiola heterosepala*), dwarf downingia (*Downingia pusilla*), legenere (*Legenere limosa*), wolly rose-mallow (*Hibiscus lasiocarpos var. occidentalis*), giant garter snake (*Thamnophis gigas*), and western spadefoot (*Spea hammondii*) were determine to have a low to moderate potential of occurring within the BSA (see Biological Resources Report in **Appendix B** for database results and species potential table).

Special-Status Plants

Preliminary literature research was conducted to determine the special status plant species with the potential to occur in the vicinity of the Project. A review of CNDDB, CNPS and online databases concluded that 23 special status plant species had the potential to occur within the BSA. Based on further research, aerial reconnaissance, and field surveys of habitat conditions within the BSA, it was determined that 5 special status plant species had a low to high potential to occur within the BSA: Boggs Lake hedge-hyssop (*Gratiola heterospeala*), dwarf downingia (*Downingia pusilla*), legenere (*Legenere limosa*), Sanford's arrowhead (*Sagittaria sanfordii*), and woolly rose-mallow (*Hibiscus lasiocarpos* var. *occidentalis*). Rare plant surveys were conducted April 24, 2018 through April 26, 2018 by Dokken biologists Andrew Dellas and Courtney Owens, and June 21, 2018 by Dokken Engineering biologists Andrew Dellas and Scott Salembier. Rare plant surveys included habitat assessments, and focused surveys for special status plant species. No special status plant species were identified during the survey efforts.

DISCUSSION OF SENSITIVE PLANT SPECIES

<u>Boggs Lake hedge-hyssop</u>
Boggs Lake hedge-hyssop (*Gratiola heterosepala*) is not a state or federal listed species but is a CNPS rare plant rank 1B.2. Boggs Lake hedge-hyssop is an annual herb inhabiting clay soils and shallow waters of marshes and swamps, lake margins, and vernal pools. The species flowers from April-August at elevations ranging from 33-7,792 feet.

<u>Dwarf downingia</u>
Dwarf downingia (*Downingia pusilla*) is not a state or federal listed species, but is a CNPS rare plant rank 2B.2. Dwarf downingia is an annual herb inhabiting vernal pools and mesic valley and foothill grassland communities. The species flowers from March-May at elevations ranging from 3-1,460 feet.

Legenere
Legenere (*Legenere limosa*) is not a state or federal listed species, but is a CNPS rare plant rank 1B.1. Legenere is an annual herb inhabiting wet areas, vernal pools, and ponds. The species flowers from May-June at elevations ranging from 0-2,887 feet.

Sanford's arrowhead
Sanford's arrowhead (*Sagittaria sanfordii*) is not a state or federal listed species, but is a CNPS rare plant rank 1B.2. Sanford's arrowhead is a perennial rhizomatous herb inhabiting freshwater marshes, swamps, ponds and ditches. The species flowers from May-October at elevations ranging from 0-2,132 feet.

Woolly rose-mallow
Wooly rose-mallow (*Hibiscus lasiocarpos var. occidentalis*) is not a state or federal listed species but is a CNPS rare plant rank 1B.2. Wooly rose-mallow is a perennial rhizomatous herb inhabiting freshwater wetlands, wet banks, and marsh communities, and is often found in-between riprap on levees. The species flowers from June-September at elevations ranging from 0-394 feet.

PROJECT IMPACTS TO SPECIAL STATUS PLANTS

Boggs Lake hedge-hyssop
The BSA does contain potentially suitable shallow water and vernal pool habitat. The nearest presumed extant occurrence is approximately 3 miles from the BSA. Due to the presence of potentially suitable habitat and the proximity to the extant occurrence the species has a low to moderate potential to occur within the BSA. No observations of the species were recorded during the focused rare plant surveys on April 24-April 26, 2018 and June 21, 2018. Pursuant to the recommendations in the Protocols for Surveying and Evaluating Impacts to Species Status Native Plant Populations and Natural Communities, a single season of negative surveys is not sufficient to determine absence of a species. A second round of rare plant surveys will be conducted during the bloom period prior to construction as described in measure **BIO-5**. With the inclusion of measure **BIO-5** below, no direct impacts to the species are anticipated.

Dwarf downingia
The BSA does contain potentially suitable vernal pool habitat. The nearest presumed extant occurrence is approximately 2 miles from the BSA. Due to the presence of potentially suitable habitat and the proximity to the extant occurrences the species has a low to moderate potential to occur within the BSA. No observations of the species were recorded during the focused rare plant surveys on April 24-April 26, 2018 and June 21, 2018. Pursuant to the recommendations in the Protocols for Surveying and Evaluating Impacts to Species Status Native Plant Populations and Natural Communities, a single season of negative surveys is not sufficient to determine absence of a species. A second round of rare plant surveys will be conducted during the bloom period prior to construction as described in measure **BIO-5**. With the inclusion of measure **BIO-5** below, no direct impacts to the species are anticipated.

Legenere
The BSA does contain potentially suitable wet areas and vernal pool habitat. The nearest presumed extant occurrence is approximately 1.5 miles from the BSA. Due to the presence of potentially suitable habitat and the proximity to the presumed extant occurrences the species has a low to moderate potential to occur within the BSA. No observations of the species were recorded during the focused rare plant surveys on April 24-April 26, 2018 and June 21, 2018. Pursuant to the recommendations in the Protocols for Surveying and Evaluating Impacts to Species Status Native Plant Populations and Natural Communities, a single season of negative surveys is not sufficient to determine absence of a species. A second round of rare plant surveys will be

conducted during the bloom period prior to construction as described in measure **BIO-5**. With the inclusion of measure **BIO-5** below, no direct impacts to the species are anticipated.

Sanford's arrowhead
The BSA does contain potentially suitable freshwater marsh and creek channels. The nearest presumed extant occurrence of the species is approximately 1 mile from the BSA. Due to the presence of potentially suitable habitat and the proximity to CNDDB presumed extant occurrences, the species is considered to have a high potential to occur within the BSA. No observations of the species were recorded during the focused rare plant surveys on April 24-April 26, 2018 and June 21, 2018. Pursuant to the recommendations in the Protocols for Surveying and Evaluating Impacts to Species Status Native Plant Populations and Natural Communities, a single season of negative surveys is not sufficient to determine absence of a species. A second round of rare plant surveys will be conducted during the bloom period prior to construction as described in measure **BIO-5**. With the inclusion of measure **BIO-5** below, no direct impacts to the species are anticipated.

Woolly rose-mallow
The BSA does contain potentially suitable freshwater wetlands and marsh communities. The nearest presumed extant occurrence is within approximately 5 miles of the BSA. Due to the presence of potentially suitable habitat and the distance to extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA. No observations of the species were recorded during the focused rare plant surveys on April 24-April 26, 2018, and June 21, 2018. Pursuant to the recommendations in the Protocols for Surveying and Evaluating Impacts to Species Status Native Plant Populations and Natural Communities, a single season of negative surveys is not sufficient to determine absence of a species. A second round of rare plant surveys will be conducted during the bloom period prior to construction as described in measure **BIO-5**. With the inclusion of measure **BIO-5**, no direct impacts to the species are anticipated.

BIO-5: A focused rare plant survey shall be conducted during the blooming season of each special status plant species with potential to occur within the Project area prior to the start of construction (Boggs Lake hedge-hyssop, dwarf downingia, legenere, Sanford's arrowhead, and wooly rose-mallow). If rare plants are discovered during these surveys, additional ESA fencing or relocation shall be implemented to avoid and minimize impact to the species. Consultation with CDFW may be required to determine appropriate buffer distances and/or relocation of species populations.

In addition, the following protective measures will be included in the Project plans to ensure that invasive species are not introduced or spread:

BIO-25: Prior to arrival at the Project site and prior to leaving the Project site, construction equipment that may contain invasive plants and/or seeds shall be cleaned to reduce the spreading of noxious weeds.

BIO-26: All hydro seed and plant mixes shall consist of a biologist approved seed mix.

Special-Status Wildlife

Preliminary literature research was conducted to determine the special status wildlife species with the potential to occur in the vicinity of the Project. A review of CNDDB, USFWS, and NOAA Fisheries online databases concluded that 28 special status wildlife species had the potential to occur within the Project vicinity. Analysis of specific habitat requirements and current and historical occurrences determined the BSA was potentially suitable for following species:

- Swainson's hawk (Buteo swainsoni),
- white-tailed kite (*Elanus leucurus*),
- burrowing owl (*Athena cunicularia*),
- song sparrow "Modesto population" (*Melospiza melodia*),
- tricolored blackbird (*Agelaius tricolor*),
- yellow-headed blackbird (*Xanthocephalus xanthocephalus*),
- vernal pool fairy shrimp (*Branchinecta lynchi*),
- vernal pool tadpole shrimp (*Lepidurus packardi*),
- giant garter snake (*Thamnophis gigas*),
- western pond turtle (Emys marmorata), and
- western spadefoot (*Spea hammondii*).

Field surveys conducted April 4, 2018 and April 24 – April 26, 2018 by Dokken Engineering biologist Andrew Dellas, Scott Salembier, and Courtney Owens, included habitat assessments, and focused surveys for special status wildlife species. Swainson's hawk, white-tailed kite, and western pond turtle were observed during the field surveys and are considered present within the BSA. No other special status species were observed during the field surveys but are still considered to have the potential of occurring within the BSA based on the presence of potentially suitable habitat and recently documented regional occurrences.

DISCUSSION OF SPECIAL STATUS WILDLIFE

<u>Swainson's Hawk</u>
Swainson's hawk is a state-listed threatened species. Swainson's hawk migrates annually from wintering areas in South America to breeding locations in northwestern Canada, the western U.S., and Mexico. In California, Swainson's hawks nest throughout the Sacramento Valley in large trees in riparian habitats and in isolated trees in or adjacent to agricultural fields. The breeding season extends from late March through late August, with peak activity from late May through July (England et al. 1997). In the Sacramento Valley, Swainson's hawks forage in large, open agricultural habitats, including alfalfa and hay fields (CDFW 1994). The breeding population in California has declined since 1900; this decline is attributed to the loss of riparian nesting habitats and the conversion of native grassland and woodland habitats to agriculture and urban development (CDFW 1994).

The BSA does have suitable foraging and nesting habitat for the species. The species was observed foraging within the BSA during the April 4, 2018 biological survey. Due to the presence of suitable foraging within the BSA and nesting habitat adjacent the BSA, and the observance of the species during the biological survey, the species is considered present within the BSA.

White-tailed Hawk
White-tailed kite is a fully protected species under CFG Code Section 3511. The species has a restricted distribution in the U.S., occurring only in California and western Oregon and along the Texas coast (American Ornithologists' Union 1983). The species is fairly common in California's Central Valley margins with scattered oaks and river bottomlands. White-tailed kites nest in riparian and oak woodlands and forage in nearby grasslands, pastures, agricultural fields, and wetlands. They use nearby treetops for perching and nesting sites. Voles and mice are common prey species.

There is suitable foraging habitat within the BSA and suitable nesting habitat adjacent the BSA for the species. The species was observed foraging within the BSA during the April 4, 2018 biological survey. Due to the presence of suitable foraging and nesting habitat, and the observance of the species during the biological survey, the species is considered present within the BSA.

Burrowing Owl
The burrowing owl is not a state or federally listed species, but is a CDFW Species of Special Concern. The burrowing owl inhabits arid, open areas with sparse vegetation cover such as deserts, abandoned agricultural areas, grasslands, and disturbed open habitats. The species requires friable soils for burrow construction and prefers areas on bare, well drained, level to sloping sites. Typically, the species occupies old small mammal burrows, but has been known to utilize pipes, culverts and nest boxes when preferred burrows are absent. Burrowing owls may use a site for breeding, wintering, foraging, and/or migration stopovers. Breeding season takes place from February 1 to August 31 and wintering takes place from September 1 to January 31 (CDFW 2012). The burrowing owl is a year-round species of California and occurs throughout the state up to 5,300 feet where appropriate habitat occurs (Zeiner 1988-1990, CNDDB 2018).

The BSA does contain potential suitable habitat for the species, and mammal burrows were observed during the April 4, 2018, biological surveys; however, no burrowing owl were observed within the BSA. The nearest recent occurrence is approximately 0.5 mile from the BSA. The species is considered to have a high potential of occurring within the BSA due to the presence of suitable habitat and close proximity to recent occurrences.

Emergent Wetland Nesting Songbirds

Song sparrow ("Modesto" population)
The song sparrow is not a state or federally listed species, but is a CDFW Species of Special Concern. The ecological requirements of the species are largely undescribed, but the species is known to have an affinity for emergent freshwater marshes dominated by tules and cattails (Grinnell and Miller 1944). Marshall (1948) described the primary habitat requirements of several subspecies of Song Sparrow in California as being moderately dense vegetation to supply cover for nest sites, a source of standing or running water, semi-open canopies to allow light, and exposed ground or leaf litter for foraging. Habitat loss, fragmentation, and degradation are the primary threats to the species. Nesting season for the species usually begins in April, and most nesters in California are nonmigratory, with other migrants coming from the north (Shuford and Gardali 2008).

Song sparrow "Modesto" population was not observed during the biological surveys; however, the BSA does contain potential suitable habitat for the species, including fresh emergent wetland areas within and adjacent to Laguna Creek. These habitats are moderately dense and are dominated by tules and cattails, which the species is known to inhabit for nesting and foraging. The nearest recent occurrence is approximately 5 miles from the BSA within the Stone Lakes

National Wildlife Refuge. Due to the presence of potentially suitable nesting and foraging habitat and the proximity to known extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

Tricolored blackbird
The tricolored blackbird is not a federally listed species but is listed as a CDFW Candidate Endangered Species. Projects are expected to consider candidate species as if they are listed (as endangered in this case). This species typically nests in freshwater marsh or other areas with dense, emergent vegetation such as dense cattails or tules, thickets of blackberry and willow. However, when preferred nesting is not available the species has been known to nest in grain (triticale), fiddleneck, thistles etc. (University of California Davis 2015, Meese 2008). Most tricolored blackbirds forage within 3 miles of their colony sites and require some source of water in proximity to their colony location. Preferred foraging habitats include crops such as rice, alfalfa, irrigated pastures, and ripening or cut grain fields, as well as annual grasslands, cattle feedlots, and dairies. The species may also forage in remnant native habitats, including wet and dry vernal pools and other seasonal wetlands, riparian scrub habitats, and open marsh borders (Shuford and Gardali 2008).

Tricolored blackbird was not observed during the biological surveys; however, the BSA does contain potentially suitable nesting and foraging habitat. There are 6 presumed extant occurrences of the species within 5 miles of the BSA. Due to the presence of suitable nesting and foraging habitat and the number of local extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

Yellow-headed blackbird
The yellow-headed blackbird is not a federal or state listed species but is a CDFW Species of Special Concern. Yellow-headed blackbird tend to nest and roost in dense emergent vegetation, feeding primarily on seeds and cultivated grains, while eating insects through the breeding season. Nesting occurs in dense wetlands of cattails and tules, and timed to coincide with maximum emergence of aquatic insects. Breeding season typically lasts from mid-April to late July. The species occurs throughout the Central Valley during breeding season and migrates south during the winter months.

Yellow-headed blackbird was not observed during the biological surveys; however, The BSA does contain potentially suitable nesting and foraging habitat; however, the BSA does contain potential suitable habitat for the species, including fresh emergent wetland areas within and adjacent to Laguna Creek. These habitats are moderately dense and are dominated by tules and cattails, which the species is known to inhabit for nesting and foraging. The nearest recent occurrence is approximately 6 miles from the BSA within the Stone Lakes National Wildlife Refuge. Due to the presence of potentially suitable nesting and foraging habitat and the proximity to known extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

<u>Vernal Pool Crustaceans</u>

Vernal Pool Fairy Shrimp
Vernal pool fairy shrimp (*Branchinecta lynchi*) is a federal-listed threatened species. This species occupies a variety of different vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, and alkaline grassland valley floor pools. In California, species inhabit portions of Tehama County, south through the Central Valley, and scattered locations in Riverside County and the Coast Ranges. The species is associated with smaller and shallower cool-water vernal pools approximately 6 inches deep which experience short periods of inundation. In the

southernmost extremes of the range, the species occurs in large, deep cool-water pools. Inhabited pools have low to moderate levels of alkalinity and total dissolved solids. The shrimp are temperature sensitive, requiring pools below 50 degrees Fahrenheit (F) to hatch and dying within pools reaching 75 degrees F. Young emerge during cold-weather winter storms.

Vernal Pool Tadpole Shrimp

Vernal pool tadpole shrimp (*Lepidurus packardi*) is a federal-listed endangered species. This species inhabits a variety of vernal pools or other seasonally ponded habitats and emerges soon after these habitats become inundated, typically after the first several storm events of the fall/winter season. The shrimp feeds on microscopic organisms and detritus, reaches maturity, and lays eggs for the next wet season. Vernal pool tadpole shrimp are found in the Central Valley from Shasta County to northern Tulare County, and in the central Coast Range from Solano County to Alameda County (USFWS 2005).

The BSA does contain potentially suitable vernal pool habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp. The nearest presumed extant occurrence of the species is approximately 4 miles from the BSA. A protocol level survey (ECORP 2007) was conducted and found no federally-listed crustaceans were found to occur in any of the pools within the BSA. However, two Biological Opinions issued from USFWS for projects which are directly adjacent the BSA (Laguna Creek Trail – Camden Spur North and South, 2015; and East Lawn Expansion Project, 2012), concurred that even though no federally-listed crustaceans were found, the projects may affect, but are not likely to adversely affect fairy shrimp or tadpole shrimp. Due to the presence of potentially suitable habitat and the distance to known extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA, and a Biological Assessment will be prepared for informal consultation of potential impacts during the Section 404 permitting process through USACE federal nexus.

<u>Western Pond Turtle</u>

The western pond turtle (WPT) is not a State or Federally listed species, but is a CDFW Species of Special Concern. WPTs are native to the west coast and are found from Baja California, Mexico north through Klickitat County, Washington. The WPT is a fully aquatic turtle, inhabiting ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. The species requires suitable basking sites such as logs, rocks and exposed banks and associated upland habitat consisting of sandy banks or grassy open fields for reproduction. The species is omnivorous, consuming aquatic wildlife and vegetation. The WPT is known to hibernate underwater beneath a muddy bottom in colder climates, and reproduce from March to August (Zeiner 1990). Nests are generally found in flat areas with low vegetation and dry, hard soil.

The BSA does contain suitable aquatic and upland habitat for the species. The species was observed during the April 24-26, 2018 jurisdictional delineation, at the confluence of Whitehouse Creek and Laguna Creek. Due to the presence of suitable habitat and the observation of the species during the jurisdictional delineation, the species is considered present within the BSA.

<u>Western Spadefoot</u>

The western spadefoot is not a state or federally listed species, but is a CDFW Species of Special Concern. In California, the species is distributed throughout the Central Valley; along the Coast Ranges in Monterey, San Luis Obispo, and Santa Barbara counties; and in Southern California south of the Transverse Mountains and west of the Peninsular Mountains. Western spadefoot inhabits woodlands and grasslands and is almost entirely terrestrial, only entering water to breed in vernal pools January through May after which the female deposits eggs on emergent vegetation before returning to land. Their diet consists of a variety of insects and earthworms. Western spadefoot estivate through the dry season underground and remain dormant until winter rains soften soils and refill vernal pools (CDFW 2018b).

The BSA does contain potentially suitable upland estivation, and aquatic vernal pool habitat for the species. The nearest presumed extant occurrence of the species is approximately 10 miles from the BSA. Due to the presence of potentially suitable habitat and the distance to local presumed extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

Giant Garter Snake
GGS is a federally listed threatened species. GGS is one of the largest garter snakes and is endemic to the wetlands within the Sacramento and San Joaquin valleys. GGS inhabits marshes, sloughs, ponds, small lakes, low gradient streams, and other waterways and agricultural wetlands, such as irrigation and drainage canals and rice fields, and the adjacent uplands (USFWS 2017). GGS feed on small aquatic animals such as fish, tadpoles, and frogs. Essential habitat components for GGS consist of: Wetlands with adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; emergent herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; upland habitat with grassy banks and openings in waterside vegetation for basking; and higher elevation uplands for escape cover (vegetation, burrows) and underground refugia (crevices and small mammal burrows) (Hanson 1980). The GGS breeding season extends through March and April, and females give birth to live young from late July through early September (Hansen and Hansen 1990). At birth, young disperse into dense cover and typically double in size by one year of age, while sexual maturity average three years in males and five years for females. According to studies of marked snakes in the Natomas Basin, snakes moved about 0.25-0.5 miles per day (Hansen and Brode 1993). GGS typically inhabit small mammal burrows for winter dormancy, escape and cover, and also as refuge from extreme heat during their active period. Burrows are typically close to wetland or water sources; however, GGS have been documented using burrows as far as 820 feet from the edge of marsh habitat.

The BSA does contain potentially suitable permanent aquatic habitat, emergent vegetation, and upland habitat for the species. The closest known occurrence of the species along Laguna Creek is approximately 1 mile west of the BSA (1987). However, this occurrence is characterized as possibly extirpated. The nearest presumed extant occurrence is approximately 4.3 miles west of the BSA, and is separated from the BSA by high density development. Additionally, a Biological Opinion issued from USFWS on a project located directly adjacent to the BSA (Laguna Creek Trail – Camden Spur North and South, 2015), concurred that due to heavy residential development the project is not likely to adversely affect the snake. Due to the presence of potentially suitable habitat and the distance to known extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA, and a Biological Assessment will be prepared for informal consultation of potential impacts to aquatic and upland habitats during the Section 404 permitting process through USACE federal nexus.

PROJECT IMPACTS TO SPECIAL STATUS WILDLIFE

Swainson's Hawk
The Project will permanently remove approximately 6.2 acres of Swainson's hawk valley grassland foraging habitat. However, no trees with current or historic nesting Swainson's hawk sites were observed during the surveys and the only large diameter trees within the BSA would not be impacted by the Project. Further, the Project's ~~proposed~~ pre-construction nesting surveys would ensure no Swainson's hawk nesting trees would be removed during construction; therefore, no impacts to nesting Swainson's hawk are anticipated.

Protocol level surveys will be conducted during the appropriate seasons prior to construction to determine presence/absence of the species. Swainson's hawk surveys will be consistent with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*, developed by the Swainson's Hawk Technical Advisory Committee (SHTAC 2000). For anticipated impacts to Swainson's hawk foraging habitat, the City will compensate for the loss of habitat pursuant Chapter 16.130 of the City Municipal Code.

With the incorporation of avoidance, minimization and mitigation measures **BIO-6** and **BIO-7**, direct impacts to Swainson's hawk are not anticipated and the Project will not result in take of Swainson's hawk. If nesting raptors or Swainson's hawks nesting within the Project area are observed during the protocol surveys, consultation with the appropriate wildlife agencies will occur, and the necessary buffers will be established. With the avoidance of take, the Project does not anticipate that a CDFW Section 2081 Incidental Take Permit (ITP) for Swainson's hawk will be necessary.

BIO-6: Should work occur within the Swainson's hawk nesting season (February 1st-August 31st), the Project biologist must conduct a pre-construction nesting survey consistent with survey methods recommended by the Swainson's Hawk Technical Advisory Committee within ¼ mile of the Project and two weeks prior to construction clearing and grubbing activities. Should a nesting Swainson's hawk pair be found within ¼ mile of the Project, the Project biologist will consult with the wildlife agencies for appropriate buffers. The contractor shall not work within the 1/2-mile nesting area until the appropriate buffer is established and is prohibited from conducting work that could disturb the birds (as determined by the Project biologist and in consultation with wildlife agencies) in the buffer area until the Project biologist determines the young have fledged.

BIO-7: Valley grasslands in the Project area are considered Swainson's hawk foraging habitat and are protected under Chapter 16.130 of the City Municipal Code, Swainson's Hawk Impact Mitigation Fees. The City shall mitigate for the permanent loss of Swainson's hawk foraging habitat at a 1:1 ratio. Mitigation can be accomplished through participation in the City of Elk Grove Swainson's Hawk Impact Mitigation Fees Ordinance, other method acceptable to the California Department of Fish and Wildlife, or other method acceptable to the Elk Grove City Council pursuant to section 16.130.110.

White-tailed Hawk

The Project will permanently remove approximately 6.2 acres of white-tailed kite valley grassland foraging habitat. However, no trees with current or historic nesting white-tailed kite nesting sites were observed during the surveys and the only potentially suitable nesting trees within the BSA would not be impacted by the Project. Further, the Project's ~~proposed~~ pre-construction nesting surveys (**BIO-8**) would ensure no white-tailed kite nesting trees would be removed during construction; therefore, no impacts to white-tailed kite are anticipated.

With the implementation of the nesting bird survey avoidance and minimization measure **BIO-8**, direct impacts to white-tailed kite are not anticipated. White-tailed kite and Swainson's hawk share foraging habitats and it is anticipated that mitigation for Swainson's hawk valley grassland foraging habitat, as stated in mitigation measure **BIO-7**, will mitigate for the loss of white-tailed kite habitat. Compensatory mitigation specific to this species is not required or proposed at this time.

BIO-8: Vegetation removal or earthwork shall be minimized during the nesting season (February 1st – August 31st). If vegetation removal is required during the nesting season (February 1st – August 31st), a pre-construction nesting bird survey must be conducted within 7 days prior to vegetation removal. Within 2 weeks of the nesting bird survey, all vegetation cleared by the biologist will be removed by the contractor.

A minimum 100-foot no-disturbance buffer shall be established around any active nest of migratory birds and a minimum 300-foot no-disturbance buffer shall be established around any nesting raptor species. The contractor must immediately stop work in the buffer area until the appropriate buffer is established and is prohibited from conducting work that could disturb the birds (as determined by the Project biologist and in consultation with wildlife agencies) in the buffer area until a qualified biologist determines the young have fledged. A reduced buffer can be established if determined appropriate by the Project biologist and approved by CDFW.

Burrowing Owl

The Project will permanently remove approximately 6.2 acres of burrowing owl valley grassland foraging and nesting habitat. However, no current or historic burrowing owl nesting sites were observed during the surveys. The BSA does contain mammal burrows which are also potentially suitable for burrowing owls.

With the implementation of species-specific avoidance and minimization measure **BIO-8** and **BIO-9**, direct impacts to burrowing owls are not anticipated. Burrowing owl and Swainson's hawk share foraging habitats and it is anticipated that mitigation for Swainson's hawk valley grassland foraging habitat, as stated in mitigation measure **BIO-7**, will mitigate for the loss of burrowing owl foraging and nesting habitat. If burrowing owls are observed during the preconstruction surveys, consultation and potential compensatory mitigation will be determined through consultation with CDFW. Compensatory mitigation specific to this species is not required or proposed at this time.

BIO-9: The Project biologist must conduct preconstruction surveys consistent with the 2012 CDFW Staff Report on Burrowing Owl Mitigation. If no burrowing owls are detected, no further action for burrowing owl will be required. If burrowing owls are observed during the preconstruction surveys, consultation with CDFW shall be required to determine appropriate no-work buffer distances, avoidance strategies and/or mitigation for impacted nest sites.

Emergent Wetland Nesting Songbirds

The ~~proposed~~ Project would construct a multi-functional access path and new bridges along the Project alignment. The Project is not anticipated to impact emergent marsh habitat. Additionally, the Project is anticipated to permanently impact approximately 1.84 acres and temporarily impact 1.71 acres of seasonal wetland habitat. These areas are potentially suitable foraging and nesting habitat for the song sparrow "Modesto" population, tricolored blackbird and yellow-headed blackbird. With the implementation of Project minimization and avoidance measures, use of Standard BMPs, ~~proposed~~ compensatory mitigation for impacts to jurisdictional waters, the Project will not result in take of listed or non-listed special status emergent wetland nesting songbirds. With the avoidance of take, the Project does not anticipate that a CDFW Section 2081 ITP for listed or non-listed emergent wetland nesting songbirds will be necessary.

Avoidance and minimization measures **BIO-1** through **BIO-4** would avoid and minimize for impacts to wetland foraging/nesting habitat, and **BIO-8** would avoid any direct impact to individuals or nests of the species. With the implementation of site-specific avoidance and minimization measure **BIO-1** through **BIO-4**, and **BIO-8**, direct impacts to emergent wetland nesting songbirds is not anticipated. Emergent wetland nesting songbirds and GGS share many habitats and it is anticipated that mitigation for jurisdictional waters and GGS habitat will mitigate for the loss of emergent wetland nesting songbird's habitat. Compensatory mitigation specific to these species is not required or proposed at this time.

BIO-1: Prior to the start of construction activities, the Project limits in proximity to jurisdictional waters shall be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking to ensure construction will not further encroach into waters. The Project biologist will periodically inspect the ESA to ensure sensitive locations remain undisturbed (same as **WQ-3**).

BIO-2: Contract specifications will include the following BMPs, where applicable, to reduce erosion during construction (same as **WQ-4**):

- Implementation of the Project shall require approval of a site-specific Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Program (WPCP) that would implement effective measures to protect water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques;
- Existing vegetation shall be protected in place where feasible to provide an effective form of erosion and sediment control. In locations where this is not feasible, the remaining BMPs listed below shall be implemented;
- Stabilizing materials shall be applied to the soil surface to prevent the movement of dust from exposed soil surfaces on construction sites as a result of wind, traffic, and grading activities;
- Roughening and/or terracing shall be implemented to create unevenness on bare soil through the construction of furrows running across a slope, creation of stair steps, or by utilization of construction equipment to track the soil surface. Surface roughening or terracing reduces erosion potential by decreasing runoff velocities, trapping sediment, and increasing infiltration of water into the soil, and aiding in the establishment of vegetative cover from seed.
- Soil exposure shall be minimized through the use of temporary BMPs, groundcover, and stabilization measures;
- The contractor shall conduct periodic maintenance of erosion- and sediment-control measures.

BIO-3: To conform to water quality requirements, the Project shall implement the following:

- Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants shall be a minimum of 100 feet from surface waters. Any necessary equipment washing shall occur where the water cannot flow into surface waters. The Project specifications shall require the contractor to operate under an approved spill prevention and clean-up plan;
- Construction equipment shall not be operated in flowing water;
- Construction work shall be conducted according to site-specific construction plans that minimize the potential for sediment input to waters of the U.S. and State;
- Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life shall be prevented from contaminating the soil or entering surface waters;
- Equipment used in and around surface waters shall be in good working order and free of dripping or leaking contaminants; and,
- Any surplus concrete rubble, asphalt, or other debris from construction shall be taken to an approved disposal site.

BIO-4: All temporarily disturbed areas shall be restored onsite to pre-Project conditions or better prior to Project completion. Where possible, vegetation shall be trimmed rather than fully removed with the guidance of the Project biologist.

Vernal Pool Crustaceans
The vernal pool fairy shrimp and vernal pool tadpole shrimp have been grouped together for the purpose of this impact analysis.

Unsuitable Habitats
Seasonal wetlands and seasonal wetland swales at the northwestern terminus of the BSA (SW-19, SW-15, SW-14, and SWS-5) are noted as detention basins, used as catchments of nuisance irrigation waters and stormwater retention areas for the housing and assisted living developments to the north, and Creekside Christian Church to the south. These areas are highly modified un-natural areas and deliver deleterious chemicals (pesticides, herbicides, and residues) in nuisance irrigation and stormwater runoff into these aquatic resources. Petroleum products, pesticides, herbicides, and other chemicals can be conveyed into the habitats by overland runoff during the rainy season, thereby adversely affecting water quality and altering the water chemistry (e.g., pH), which may make conditions unsuitable for vernal pool crustaceans (USFWS 2007a [Johnson 2005; C. Johnson 2007; Weston et al., 2005; Weston et al. 2006]). Additionally, years of contamination can also lead to highly toxic levels in sediments in addition to annual degradation of water quality (USFWS 2007b [Weston *et al.* 2004; Amweg *et al.* 2005]). Furthermore, as stormwater detention areas, these aquatic resources have un-suitable deep waters (approximately 1.5 to 3-feet deep) and inundation periods are longer, increasing temperatures unsuitable to hatching and persistence of the species (USFWS 2007). Therefore, these seasonal wetland features are considered unsuitable habitats for vernal pool crustaceans, and the species are presumed absent from these features.

In addition, SW-11, SW-12, SW-13, SWS-6, SW-8, SW-7, and SWS-4 have water regime fluctuations and flow patterns to and from Laguna Creek and Whitehouse Creek, and therefore, would not provide suitable inundation periods for either vernal pool crustacean species, as well as the potential for increased predation and increased temperatures from perennial creek waters. Therefore, these seasonal wetland features are also considered unsuitable habitats for vernal pool crustaceans, and the species are presumed absent from these features.

The ~~proposed~~ Project has been designed to avoid all permanent and temporary effects to suitable vernal pool crustacean habitat. However, changes to hydrology due to the increase in impervious surfaces may have indirect impacts to hydrology or biological quality in the suitable habitats. In order to minimize changes to hydrology within the Project area, the Project has been designed with water catchment ditches at the bottom of the berms of the multi-functional corridor. These catchment ditches would minimize and avoid changes of increased runoff reaching adjacent suitable habitats and reduce the potential for changes in hydrology or degradation of water quality.

Though hydrology and water quality of suitable habitats are not anticipated to change due to the ~~proposed~~ Project, grading and other soil disturbance in uplands adjacent to these habitats could result in increased sedimentation from dust movement and/or introduction of invasive plant species, thereby reducing the quality of the habitats. The Project is anticipated to have a total of approximately 0.72 acres of indirect effects to potentially suitable vernal pool invertebrate habitat due to grading and construction activities within 250-feet of suitable habitats

Avoidance and minimization measures **BIO-1** through **BIO-4** would avoid and minimize impacts to habitats. In addition to any measures pursuant the Project's permitting requirements, avoidance and minimization measures **BIO-10** and **BIO-11** shall be implemented as part of the Project to further avoid and minimize impacts to potentially suitable vernal pool habitat. Measure **BIO-12** provides options to mitigate impacts on vernal pool crustaceans, including performing protocol-level surveys for vernal pool crustaceans, or assuming presence of threatened and endangered species. If special-status vernal pool species are found or presence is assumed, compensation is proposed consistent with the USACE *Programmatic Formal Endangered Species Act Consultation on Issuance of 404 Permits for Projects With Relatively Small Effects on Listed Vernal Pool Crustaceans Within the Jurisdiction of the Sacramento Field Office*, dated February 28, 1996. USACE will consult with the USFWS under Section 7 of FESA shall be initiated through federal nexus during USACE Section 404 permitting processes and impacted suitable habitat shall be mitigated for using an acceptable USACE bank credits or in-lie fee.

BIO-10: Protective silt fencing shall be installed between the adjacent vernal pool habitat and the construction area limits to prevent accidental disturbance during construction and to protect water quality within the aquatic habitat during construction.

BIO-11: A Worker Environmental Awareness Program (WEAP) shall be implemented to educate construction workers about the presence of sensitive habitat and special status plant and wildlife species near the Project area and to instruct them on proper avoidance measures.

BIO-12: The ~~proposed~~ Project shall mitigate for potential impacts to vernal pool crustaceans by conducting USFWS protocol-level surveys, or assuming presence of the species in the Project area. Protocol-level surveys for the vernal pool fairy shrimp and vernal pool tadpole shrimp shall occur in suitable habitats occurring in the ~~proposed~~ Project area and within 250 feet of adjacent suitable habitat. If vernal pool fairy shrimp or vernal pool tadpole shrimp are not detected during the protocol-level surveys and if the USFWS concurs that neither species is present, no further mitigation is required. If either of the species is detected during protocol-level surveys or the presence of the species is assumed in lieu of conducting surveys, and ~~proposed~~ activities will result in direct or indirect impacts to potential habitat, the following measures shall be implemented:

1. Formal consultation with the USFWS shall be initiated under Section 7 of the Endangered Species Act. No direct or indirect impacts to suitable habitat for these species shall occur until Incidental Take authorization has been obtained from the USFWS.

2. For every acre of habitat directly or indirectly affected, at least two vernal pool preservation credits shall be dedicated in a USFWS-approved ecosystem preservation bank (2:1 ratio). With USFWS approval, appropriate payment into an in-lieu fee fund or on-site preservation may be used to satisfy this measure.

3. For every acre of habitat directly affected, at least one vernal pool creation credit will be dedicated in a USFWS-approved habitat mitigation bank (1:1 ratio). With USFWS approval, appropriate payment into an in-lieu fee fund, on-site creation, or off-site creation may be used to satisfy this measure.

Western Pond Turtle

The ~~proposed~~ Project would construct a multi-functional access path and new bridges along the Project alignment. The Project is anticipated to permanently impact approximately 0.05 acres of aquatic habitat and approximately 3.72 acres of upland habitat. Additionally, the Project is anticipated to have temporary impacts to approximately 1.72 acres of aquatic habitat, and approximately 1.43 acres of upland habitat. With the implementation of the species-specific avoidance and minimization measures **BIO-13** and **BIO-14** identified below, no direct impacts to WPT are anticipated.

BIO-13: To avoid impacts to western pond turtles, the Project biologist will conduct a pre-construction survey of the Laguna Creek, Whitehouse Creek, and adjacent banks and upland habitats within the Project area. Surveys shall be conducted no more than 24 hours prior to onset of construction. If a turtle is located within the construction area, a qualified biologist will capture the turtle and relocate it to an appropriate habitat a safe distance from the construction site.

BIO-14: If water pumps are used to dewater the Project Area, pump intakes shall be screened and equipped with an energy dissipater to protect aquatic species. The energy dissipater should be large enough to reduce approach velocity to 0.33 feet per second or less and be enclosed with ½ inch metal screen. The surface area of the energy dissipater shall be determined by dividing the maximum diverted flow, by the allowable approach velocity (example: 1.0 ft^3 per second/ 0.33 feet per second = 3.0 ft^2 surface area).

Western Spadefoot

The ~~proposed~~ Project would construct a multi-functional access path and new bridges along the Project alignment. The Project is not anticipated to permanently impact potentially suitable vernal pool habitat. However, the Project does anticipate approximately 1.84 acres of permanent impacts to potentially suitable wetland habitat, and 3.72 acres of upland habitat. Additionally, the Project is anticipated to have temporary impacts to approximately 1.71 acres of wetland habitat, and approximately 1.43 acres of upland habitat. Furthermore, the Project may contribute to permanent indirect impacts to approximately 0.72 acres of potentially suitable vernal pool and seasonal wetland habitat due to changes in hydrology and/or biophysical conditions of these potentially suitable habitats. With the implementation of the species-specific avoidance and minimization measures **BIO-15** and **BIO-16** identified below, no direct impacts to western spadefoot are anticipated.

BIO-15: If suitable habitat for western spadefoot toad is to be removed from October through April, a qualified biologist shall conduct a preconstruction survey for this species within 50 feet of suitable habitat that is proposed to be impacted. The survey shall be conducted a maximum of one week prior to removal of suitable breeding habitat.

If no spadefoot toads are detected during the survey, no further measures are required. If this species is observed on-site, the biologist shall move it to suitable habitat in a safe location outside of the construction zone.

If western spadefoot toads are detected during the preconstruction survey, a qualified biologist shall be on-site during initiation of construction activities within 50 feet of suitable habitats and shall provide WEAP training to all personnel working within 50 feet of suitable habitats.

In the event that a western spadefoot toad is observed within an active construction zone, the contractor shall temporarily halt construction activities until a biologist has moved the toad to a safe location, within similar habitat, outside of the construction zone.

BIO-16: To allow western spadefoot and other subterranean wildlife enough time to escape initial clearing and grubbing activities, equipment used during initial clearing and grubbing in annual grassland or wetland habitats shall be operated at speeds no greater than 3 miles per hour.

Giant Garter Snake

The ~~proposed~~ Project is anticipated to result in direct temporary and permanent impacts to GGS habitat. Anticipated temporary effects to GGS would be due to disturbance of approximately 1.43 acres of upland habitat, and 1.72 acres of aquatic habitat. Temporary effects to upland habitat would include vegetation clearing, regrading, staging, access, and other construction activities. These activities are likely to remove vegetative cover and potential basking sites necessary for thermoregulation within the grassland areas adjacent to Laguna Creek and Whitehouse Creek. However, these upland habitats would only be temporarily affected and would be revegetated with native species as part of Project restoration requirements. Temporary effects to aquatic habitat would include access of construction equipment with marsh areas adjacent Laguna Creek, and within Whitehouse Creek. During the summer, Laguna Creek and Whitehouse Creek have low flows, and will be dewatered as needed by methods determined appropriate by the contractor and permitting agencies. It is anticipated that the contractor would use cofferdams and flexible pipe culverts to direct water away from construction activities.

The ~~proposed~~ Project would result in permanent effects to GGS due to the loss of approximately, 3.72 acres of upland habitat, and 0.05 acres of aquatic habitat (**Table 6.** Project Effects to GGS Habitat; **Figure 6.** Project Effects to GGS Habitat). Direct permanent effects would occur due to the placement of fill and the construction of the access road and bridges. Permanent effects to upland habitat would include removal of the grassland dispersal and cover habitat for the new alignment access roadway and bridge abutments. Permanent effects to aquatic habitat would include the removal and filling of marsh and wetland habitat adjacent to Laguna Creek. Section 7 of the FESA consultation with USFWS for potential impacts to GGS will occur through federal nexus with the USACE during the CWA Section 404 permitting process. Compensatory mitigation measure **BIO-24** provides options for compensatory mitigation determined during the permitting process. Further, measures **BIO-17** through **BIO-23** will ensure no direct impact will occur to the species.

Table 6. Project Effects to GGS Habitat

Giant Garter Snake Habitat Type	Temporary Effects (ac)	Permanent Effects (ac)
Upland Habitat	1.43	3.72
Aquatic Habitat	1.72	0.05
Total Habitat	**3.15**	**3.77**

In summary, with implementation of the specified measures, the Project will have a less than significant impact with mitigation.

BIO-17: Construction activity within giant garter snake habitat should be conducted between May 1st and October 1st. This is the active period for giant garter snakes and direct mortality is lessened, because snakes are expected to actively move and avoid danger. Between October 2 and April 30 contact the U.S. Fish and Wildlife Service Sacramento Office to determine if additional measures are necessary to minimize and avoid take.

BIO-18: Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided giant garter snake habitat within or adjacent to the Project area as Environmentally Sensitive Areas. The area should be avoided by all construction personnel.

BIO-19: Tightly woven erosion control matting (mesh size less than 0.25 inch) or similar material shall be used for erosion control and other purposes at the Project site to ensure that snakes are not trapped or become entangled by the erosion control material. The edge of the material shall be buried in the ground to prevent snakes from crawling underneath the material. The use of plastic, monofilament, jute, or similar erosion control netting with mesh sizes larger than 0.25 inch that could entangle snakes will be prohibited.

BIO-20: Construction personnel must receive worker environmental awareness training. Awareness training shall be given by the Project biologist(s) who have experience in giant garter snake natural history. This training instructs workers to recognize giant garter snake and their habitat(s).

BIO-21: 24-hours prior to construction activities, the Project area should be surveyed for giant garter snakes. Survey of the Project area should be repeated if a lapse in construction activity of two weeks or greater has occurred. If a snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. Report any sightings and any incidental take to the U.S. Fish and Wildlife Service Sacramento Office immediately by telephone at (916) 414-6600.

BIO-22: Any dewatered habitat must remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling of the dewatered habitat.

BIO-23: After completion of construction activities, remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-Project conditions. Restoration work includes, as applicable, activities such as replanting species removed from banks or replanting emergent vegetation in the active channel.

BIO-24: The ~~proposed~~ Project shall mitigate for potential impacts to giant garter snake by one of the following compensatory mitigation strategies:

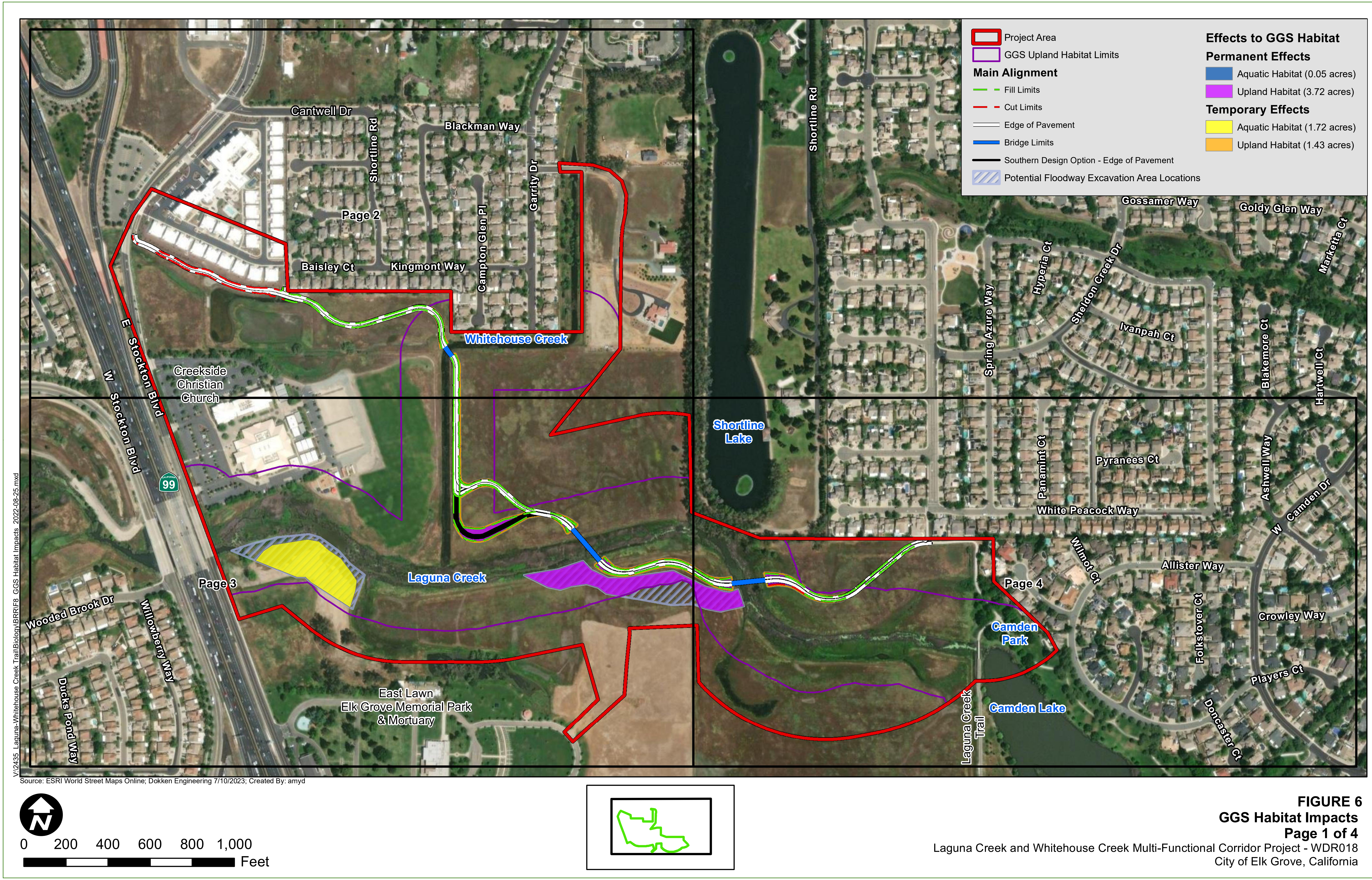
1. The City shall provide all necessary compensatory mitigation requirements pursuant Section 7 consultation with the USFWS through federal nexus with USACE during Clean Water Act Section 404 permitting process.

2. The City will compensate for the loss of giant garter snake habitat with purchase of required mitigation credits at a USFWS and CDFW approved mitigation bank to offset permanent and temporary impacts. Temporary impacts shall be compensated at 1:1 ratio, and permanent impacts to upland and aquatic GGS habitat shall be compensated at 3:1. Acreages may be adjusted during final design, which would change the total acres of mitigation, but the ratios must stay the same.

In addition, to prevent harm to local wildlife, the Project will implement the following measures:

BIO-27: The contractor shall not use herbicides to control invasive, exotic plants or apply rodenticides during construction.

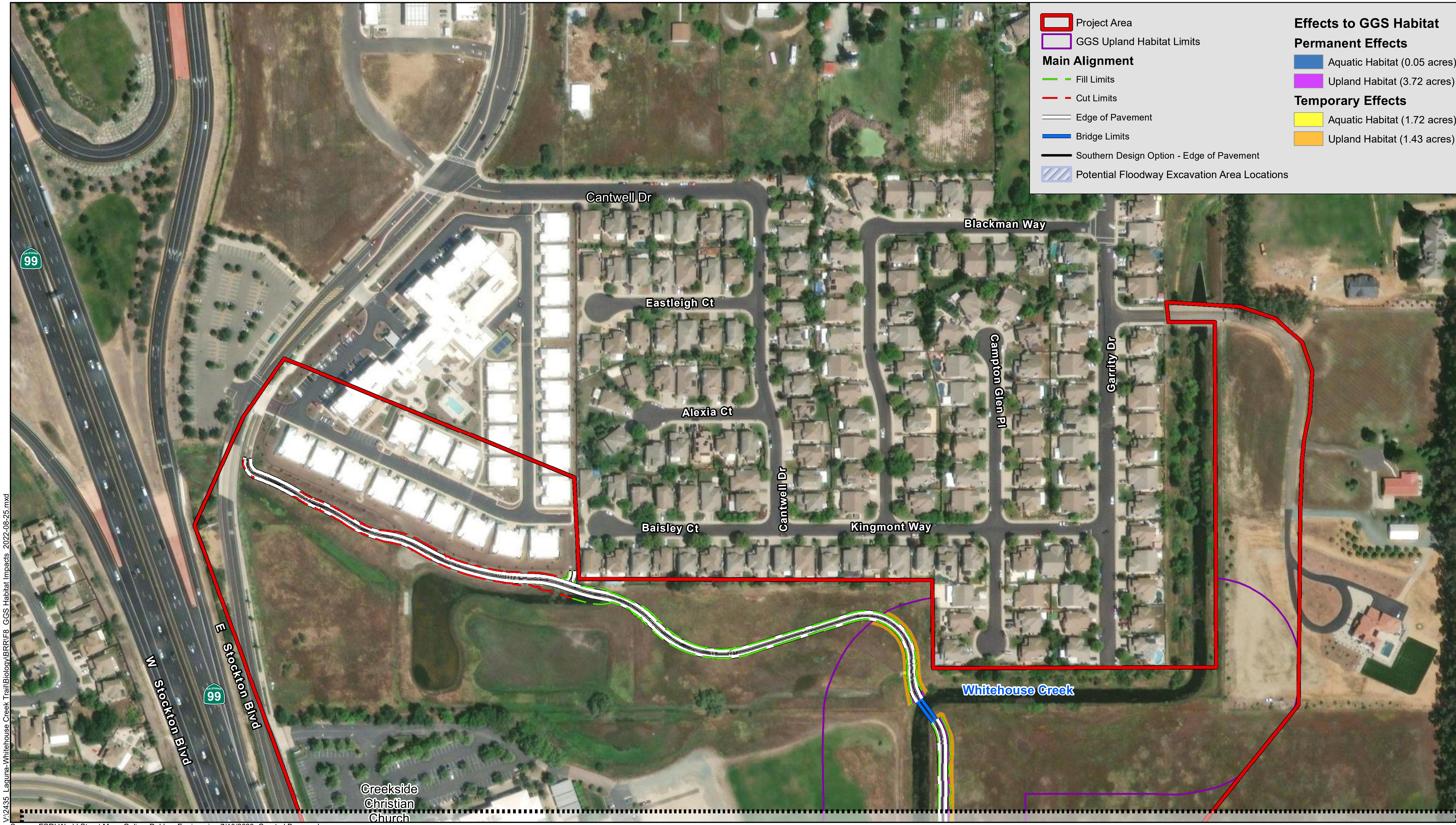
BIO-28: The contractor shall dispose of all food-related trash in closed containers, and must remove it from the Project area each day during construction. Construction personnel shall not feed or attract wildlife to the Project area.



V:\2435_Laguna-Whitehouse Creek Trail\Biology\BRRF8_GGS Habitat Impacts_2022-08-25.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 7/10/2023; Created By: amyd

FIGURE 6
GGS Habitat Impacts
Page 1 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California



Source: ESRI World Street Maps Online; Dokken Engineering 7/10/2023; Created By: amyd

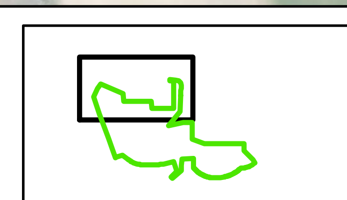
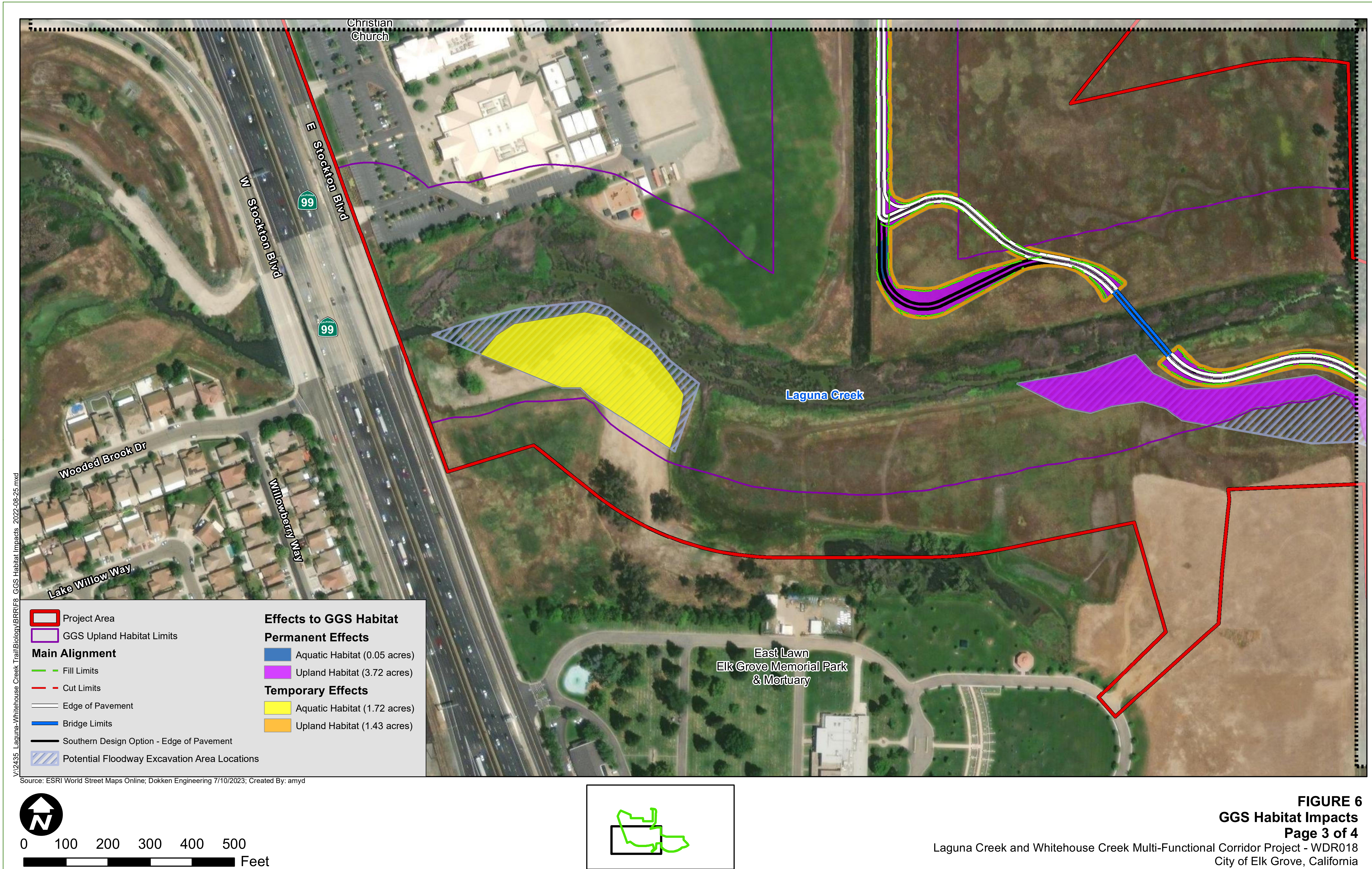
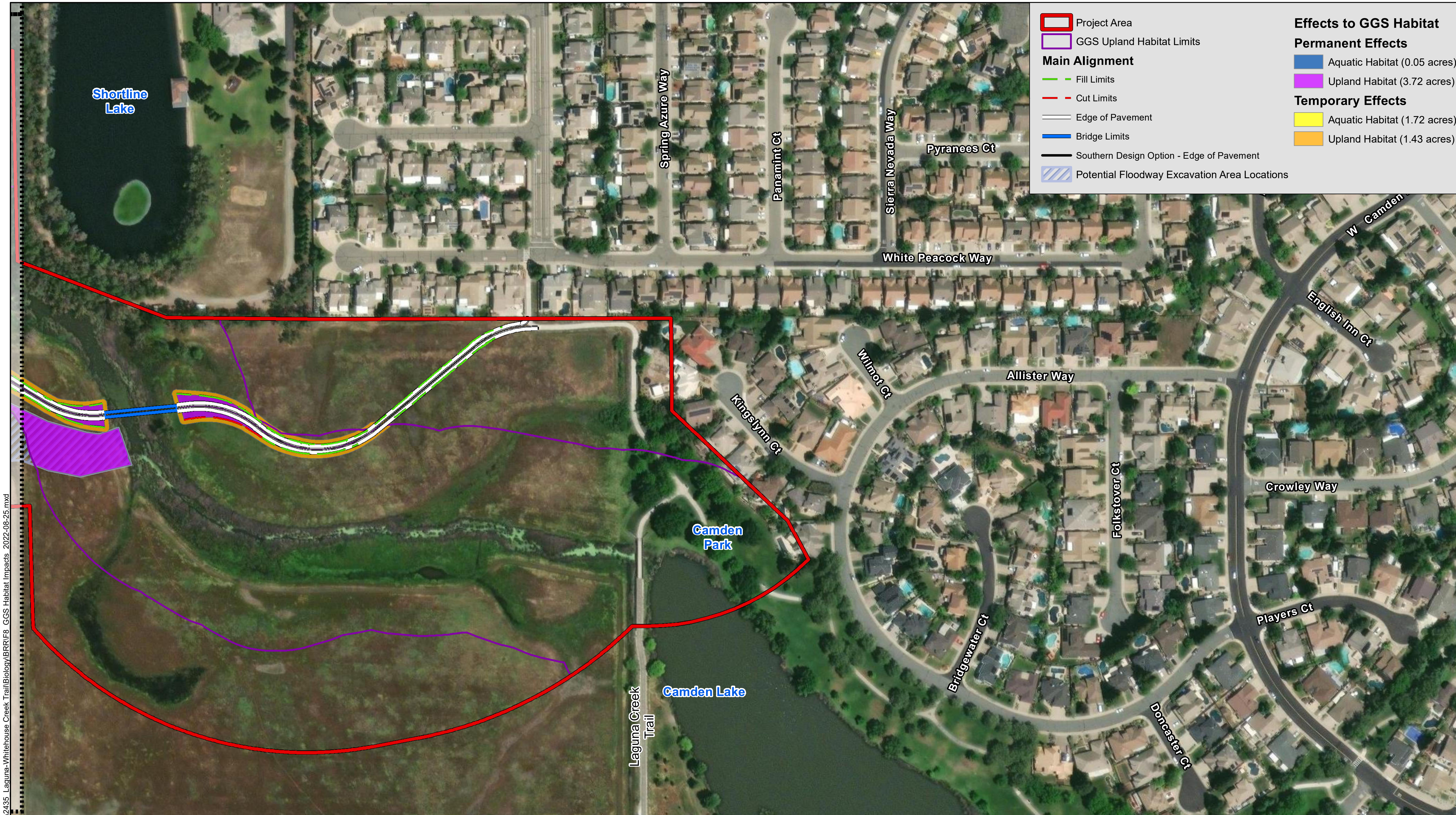


FIGURE 6
GGS Habitat Impacts
Page 2 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California



Source: ESRI World Street Maps Online; Dokken Engineering 7/10/2023; Created By: amyd

FIGURE 6
GGS Habitat Impacts
Page 3 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California



V:\2435_Laguna-Whitehouse Creek Trail\Biology\BRRIF8_GGS Habitat Impacts_2022-08-25.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 7/10/2023; Created By: amyd

0 100 200 300 400 500 Feet

FIGURE 6
GGS Habitat Impacts
Page 4 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

b) **Less Than Significant with Mitigation.** The ~~proposed~~ Project would include construction of a maintenance access road along Laguna Creek and Whitehouse Creek. The maintenance access road would consist of approximately 10 feet of pavement with unpaved shoulders ranging from 2 to 3 feet, and where determined feasible, single span pre-fab steel or concrete bridges to provide necessary access across Laguna and Whitehouse Creeks.

Field surveys and habitat assessments within the BSA determined no riparian habitat exists along the banks of Laguna and Whitehouse Creeks. However, Laguna and Whitehouse Creeks would be considered non-wetland sensitive natural habitats, as perennial creeks. A small permanent impact area would occur to Laguna Creek for fill material necessary for the Project alignment adjacent to East Stockton Boulevard at the southwestern terminus of the Project near the church parking lot. No permanent impacts are anticipated for Whitehouse Creek. Temporary impacts include areas in addition to permanent impacts that would be temporarily disturbed during construction to facilitate construction such as access routes, and potential dewatering activities. The Project is not anticipated to affect creek habitat. The Project will minimize impacts to sensitive natural creek habitats with the use of avoidance and minimization measures **BIO-1** through **BIO-4**; therefore, this impact is less than significant with mitigation incorporated.

BIO-1: Prior to the start of construction activities, the Project limits in proximity to jurisdictional waters shall be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking to ensure construction will not further encroach into waters. The Project biologist will periodically inspect the ESA to ensure sensitive locations remain undisturbed (same as **WQ-3**).

BIO-2: Contract specifications will include the following BMPs, where applicable, to reduce erosion during construction (same as **WQ-4**):

- Implementation of the Project shall require approval of a site-specific Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Program (WPCP) that would implement effective measures to protect water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques;
- Existing vegetation shall be protected in place where feasible to provide an effective form of erosion and sediment control. In locations where this is not feasible, the remaining BMPs listed below shall be implemented;
- Stabilizing materials shall be applied to the soil surface to prevent the movement of dust from exposed soil surfaces on construction sites as a result of wind, traffic, and grading activities;
- Roughening and/or terracing shall be implemented to create unevenness on bare soil through the construction of furrows running across a slope, creation of stair steps, or by utilization of construction equipment to track the soil surface. Surface roughening or terracing reduces erosion potential by decreasing runoff velocities, trapping sediment, and increasing infiltration of water into the soil, and aiding in the establishment of vegetative cover from seed.
- Soil exposure must be minimized through the use of temporary BMPs, groundcover, and stabilization measures;

- The contractor must conduct periodic maintenance of erosion- and sediment-control measures.

BIO-3: To conform to water quality requirements, the Project shall implement the following:

- Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants shall be a minimum of 100 feet from surface waters. Any necessary equipment washing shall occur where the water cannot flow into surface waters. The Project specifications shall require the contractor to operate under an approved spill prevention and clean-up plan;
- Construction equipment shall not be operated in flowing water;
- Construction work shall be conducted according to site-specific construction plans that minimize the potential for sediment input to waters of the U.S. and State;
- Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life shall be prevented from contaminating the soil or entering surface waters;
- Equipment used in and around surface waters shall be in good working order and free of dripping or leaking contaminants; and,
- Any surplus concrete rubble, asphalt, or other debris from construction shall be taken to an approved disposal site.

BIO-4: All temporarily disturbed areas shall be restored onsite to pre-Project conditions or better prior to Project completion. Where possible, vegetation shall be trimmed rather than fully removed with the guidance of the Project biologist.

c) **Less Than Significant with Mitigation.** Potential jurisdictional wetlands within the BSA were assessed and potential wetland features were evaluated for presence of the following wetland indicators: hydrophytic vegetation, hydric soils and wetland hydrology. Surveys of potential jurisdictional waters were confirmed using aerial imagery and field verification, and followed the guidelines provided in the *USACE Wetland Delineation Manual* (USACE 1987), *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008a), and *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b). Wetlands that exhibit all three wetland indicators are considered waters of the U.S. if they are hydraulically connected to another water of the U.S. Waters of the state can include wetlands that are not hydraulically connected to another water body if they provide habitat for wildlife or special status plant species. Previous to the current 2018 survey efforts, ECORP Consulting Inc. had performed a wetland delineation for the East Lawn Cemetery Expansion (2006-2007). These delineation results have since expired; however, the mapping efforts from the ECORP delineation were used as reference for aquatic feature locations.

Jurisdictional delineations were conducted by Dokken Engineering biologists, Andrew Dellas and Courtney Owens on April 24 – April 26, 2018 to identify jurisdictional resources present within the BSA. Observed OHWM and wetland features were mapped in the field with a Trimble GeoXT Geoexplorer 6000 Series handheld GPS unit.

DISCUSSION OF JURISDICTIONAL WETLANDS

Jurisdictional wetland features within the BSA include those wetland features associated with Laguna Creek and Whitehouse Creek which are considered potential jurisdictional waters of the U.S. and state. Delineated wetland features within the BSA include vernal pools, vernal swales, seasonal wetlands, seasonal wetland swales, and emergent marsh (**Figure 7**. Jurisdictional Waters within the BSA).

Seasonal Wetland

Seasonal wetlands are defined as ephemeral wetlands that pond during the rainy season and dry during the summer dry season. This habitat type is dominated by hydrophytic vegetation types of grasses, herbs, and forbs. The seasonal wetland habitat type occurs in the adjacent lands of the Stone Lakes NWR in the northwest quadrant of the Study Area. Seasonal wetlands can provide habitat for vernal pool associates, and habitat for a wide variety of wildlife including song birds, waterfowl, reptiles, and other wildlife species. A total of 20 seasonal wetland features were delineated within the BSA consisting of approximately 9.47 acres.

Seasonal Wetland Swale

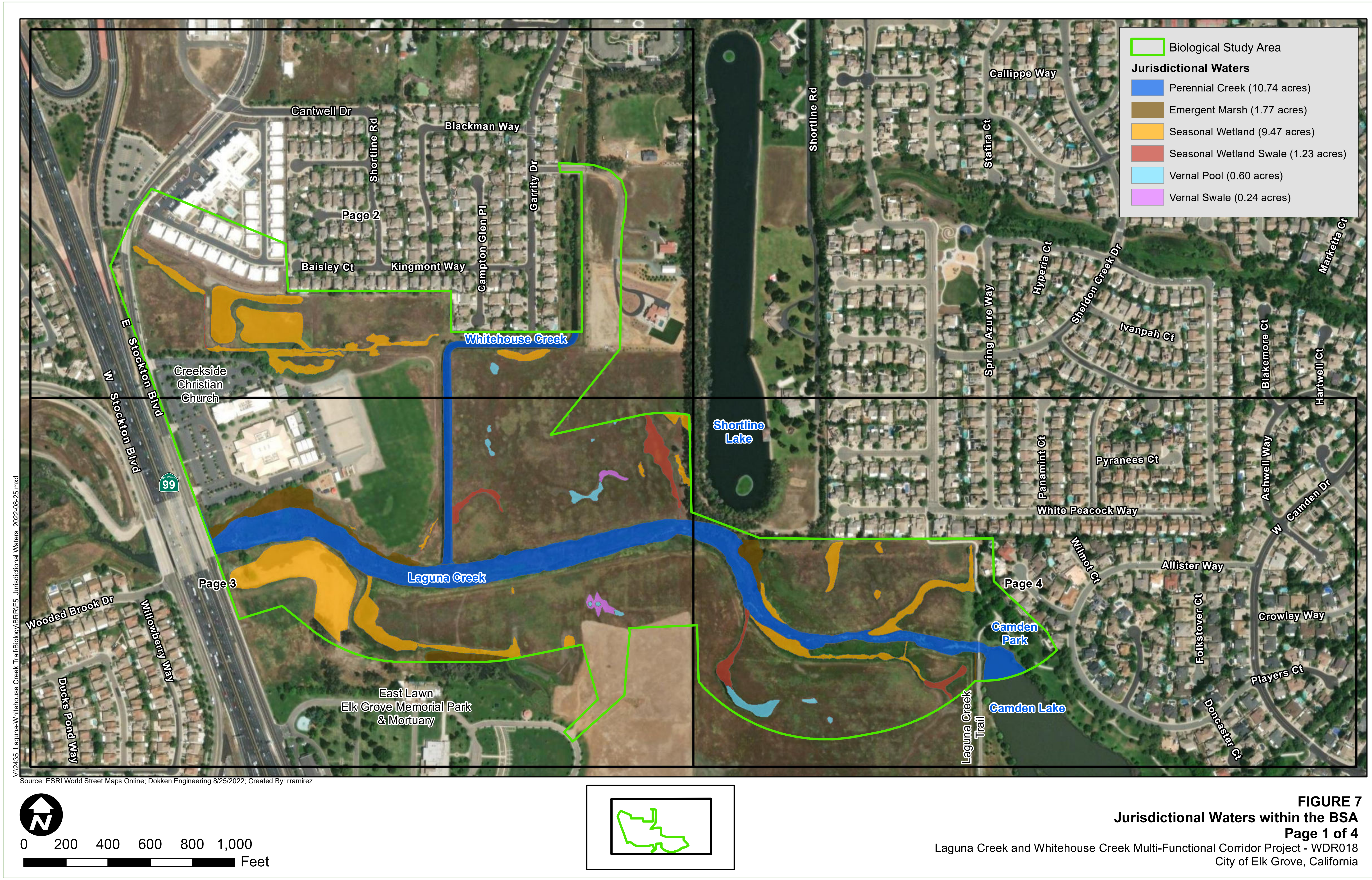
The seasonal swale land cover type is defined as low meandering channels that tend to be saturated long enough to support vegetative associations. Swale features often represent the headwaters of streams, connect seasonal wetlands, and/or drain small watersheds into defined creeks. Swales can be supported by minor groundwater seepage. Swales contain rabbitsfoot grass (*Polypogon monspeliensis*), fireweed (*Epilobium pygmaeum*), fiddle dock (*Rumex pulcher*), and prickleseed buttercup (*Ranunculus muricatus*). Seasonal swales that occur within and between vernal pool complexes are classified as vernal swales. A total of 6 seasonal wetland swale features were delineated within the BSA consisting of approximately 1.23 acres.

Vernal Pools

Vernal pools are characterized by seasonal inundation and their potential to support vernal pool species. A wide variety of herbaceous species are associated with this community type, including Italian ryegrass, Mediterranean barley, coyote thistle (*Eryngium* sp.), smooth goldfields (*Lasthenia glaberrima*), Fremont's goldfields (*Lasthenia fremontii*), vernal pool buttercup (*Ranunculus bonariensis var. trisepalus*), and woolly marbles (*Psilocarphus spp.).* Additional species that may be present include Sacramento mint (*Pogogyne zizyphoroides*), hyssop loosestrife (*Lythrum hyssopifolium*), toad rush (*Juncus bufonius*), popcorn flower (*Plagiobothrys spp.),* alkali weed, mayweed, and curly dock. Vernal pool communities have the potential to support special-status vernal pool invertebrates, such as fairy shrimp (*Branchinecta* spp.) and tadpole shrimp (*Lepidurus* spp.). The BSA includes vernal pool communities. A total of 12 vernal pools were delineated within the BSA consisting of approximately 0.60 acres.

Vernal Swale

Vernal pools are sometimes connected to each other by small drainages known as vernal swales, forming complexes of vernal pools. Vernal swales differ from vernal pools in that they function distinctly as shallow, seasonal conveyance channels. They typically connect vernal pools or convey shallow seasonal flows down gradual inclines often collecting water in a vernal pool or seasonal wetland. Vernal swales and pools typically share plant species and successive "rim bloom" plant assemblages and soil types (California Open Lands 2018). A total of 2 vernal swale areas were delineated within the BSA consisting of approximately 0.24 acres.



Source: ESRI World Street Maps Online; Dokken Engineering 8/25/2022; Created By: rramirez

FIGURE 7
Jurisdictional Waters within the BSA
Page 1 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

Source: ESRI World Street Maps Online; Dokken Engineering 8/25/2022; Created By: rramirez

0 100 200 300 400 500 Feet

FIGURE 7
Jurisdictional Waters within the BSA
Page 2 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

Source: ESRI World Street Maps Online; Dokken Engineering 8/25/2022; Created By: rramirez

0 100 200 300 400 500 Feet

FIGURE 7
Jurisdictional Waters within the BSA
Page 3 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

FIGURE 7
Jurisdictional Waters within the BSA
Page 4 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

<u>Emergent Marsh</u>
Freshwater emergent marsh wetlands are characterized by erect, rooted herbaceous hydrophytes such as common cattail. Emergent wetlands are flooded frequently enough so that the roots of the vegetation are in an anaerobic environment. On the upper margins of this habitat, saturated or periodically flooded soils support several moist soil plant species including Baltic rush (*Juncus balticus*), tall flatsedge (*Cyperus eragrostis*), smartweed (*Persicaria spp.),* and, on more alkali sites, saltgrass (*Distichlis spicata*). Lower, wetter portions of freshwater emergent wetlands in the Project area are composed of cattails, bulrush, and floating primrose. In the Project area, several freshwater emergent wetlands exist west of Franklin Boulevard. A total of 3 emergent marsh features were delineated within the BSA, consisting of approximately 1.77 acres.

PROJECT IMPACTS TO JURISDICTIONAL WETLANDS

Analysis of potential effects to federally protected wetlands as defined by Section 404 of the CWA, determined the ~~proposed~~ Project design would require permanent and temporary impacts to the wetlands within the BSA. The following section describes in detail the ~~proposed~~ Project's potential effects to these wetland resources. **Table 7** and **Figure 8** display the potential effects.

Table 7. Project Effects to Jurisdictional Wetlands

Jurisdictional Waters	Waters of the U.S., State and CDFW Waters		
	Permanent Impacts (Acres)	Temporary Impacts (Acres)	Indirect Affects (Vernal Pool Only)
Seasonal Wetlands	1.84	1.71	0.31
Seasonal Wetland Swales	0.05	<0.01	--
Vernal Pools	0	0	0.17
Vernal Swales	0	0	0.24
Emergent Marsh	0	0	--
Total	**1.89**	**1.72**	**0.72**

<u>Vernal Pools and Swales</u>
Direct Impacts
Due to the delicate hydrology of vernal pools, direct impacts to a portion of a vernal pool permanently modify the hydrology of the entire vernal pool and all direct impacts are treated as permanent impacts. However, the ~~proposed~~ Project has been designed to avoid all permanent impacts to vernal pool habitat. Therefore, no permanent or temporary direct impacts to vernal pool habitats are anticipated (see **Table 7** and **Figure 8**).

Indirect Impacts
Modifications to the micro-watershed (including vernal swales) surrounding vernal pools indirectly affects their long-term hydrology. Indirect impacts may result from changes in on-site hydrology to vernal pools due to the creation of impervious surfaces on impermeable surfaces. These may alter the amount of water entering vernal pools and potentially degrade vernal pool crustacean habitat. After reviewing vernal pools present within the BSA, it was determined that construction of the ~~proposed~~ Project could cause hydrological or biological modifications that could cause indirect effects of vernal pools in the area of construction of the ~~proposed~~ Project. In order to minimize changes to hydrology within the Project area, the Project has been designed with water catchment ditches at the bottom of the berms of the multi-functional corridor. These catchment

ditches would minimize and avoid changes of increased runoff reaching adjacent suitable habitats and reduce the potential for changes in hydrology or degradation of water quality. The ~~proposed~~ Project is anticipated to cause approximately 0.41 acres of indirect impacts to vernal pools and vernal swales.

Seasonal Wetland

The construction of the ~~proposed~~ Project would result in permanent and temporary impacts to seasonal wetlands as shown in **Table 7** and **Figure 8**. Approximately 1.84 acres of permanent impacts would occur to seasonal wetland habitat. Approximately 1.71 acres of temporary impacts would occur in addition to permanent impacts that would be temporarily disturbed to facilitate construction of the Project alignment.

Seasonal wetland habitat may be suitable for vernal pool invertebrates and potential indirect impacts to seasonal wetland habitat may be considered impacts to vernal pool invertebrate species. A discussion of indirect effects to waters is discussed above. The ~~proposed~~ Project is anticipated to cause approximately 0.31 acres of indirect impacts related to seasonal wetlands potential habitat for vernal pool invertebrates.

Seasonal Wetland Swale

The construction of the ~~proposed~~ Project would result in approximately 0.05 acres of permanent impacts to seasonal wetland swale habitat . However, a minor amount of temporary impacts, approximately <0.01 acres would have temporary effects, as shown in **Table 7** and **Figure 8**.

Emergent Marsh

The construction of the ~~proposed~~ Project would not result in permanent and temporary impacts to emergent marsh as shown in **Table 7** and **Figure 8**.

The Project has been designed to minimize temporary and permanent impacts to jurisdictional wetlands to the maximum extent practicable. Prior to construction, regulatory permits will be obtained from USACE, CDFW, and RWQCB. Compensatory mitigation for permanent and temporary impacts to waters of the U.S. and State will be determined through waters permitting in coordination through Section 401 of the CWA, Section 404 of the CWA, and Section 1602 of the CESA.

Consultation efforts with RWQCB, USACE, and CDFW will occur through this process and final mitigation ratios for impacts to waters of the U.S. and State will be determined. In addition to all measures specified in these permits, the avoidance and minimization measures **BIO-1** through **BIO-4** will be incorporated into the design to minimize construction impacts to jurisdictional wetlands within the BSA. With the implementation of avoidance, minimization and mitigation measures for jurisdictional wetlands within the BSA, impacts would be less than significant with mitigation incorporated.

BIO-1: Prior to the start of construction activities, the Project limits in proximity to jurisdictional waters shall be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking to ensure construction will not further encroach into waters. The Project biologist will periodically inspect the ESA to ensure sensitive locations remain undisturbed (same as **WQ-3**).

BIO-2: Contract specifications will include the following BMPs, where applicable, to reduce erosion during construction (same as **WQ-4**):

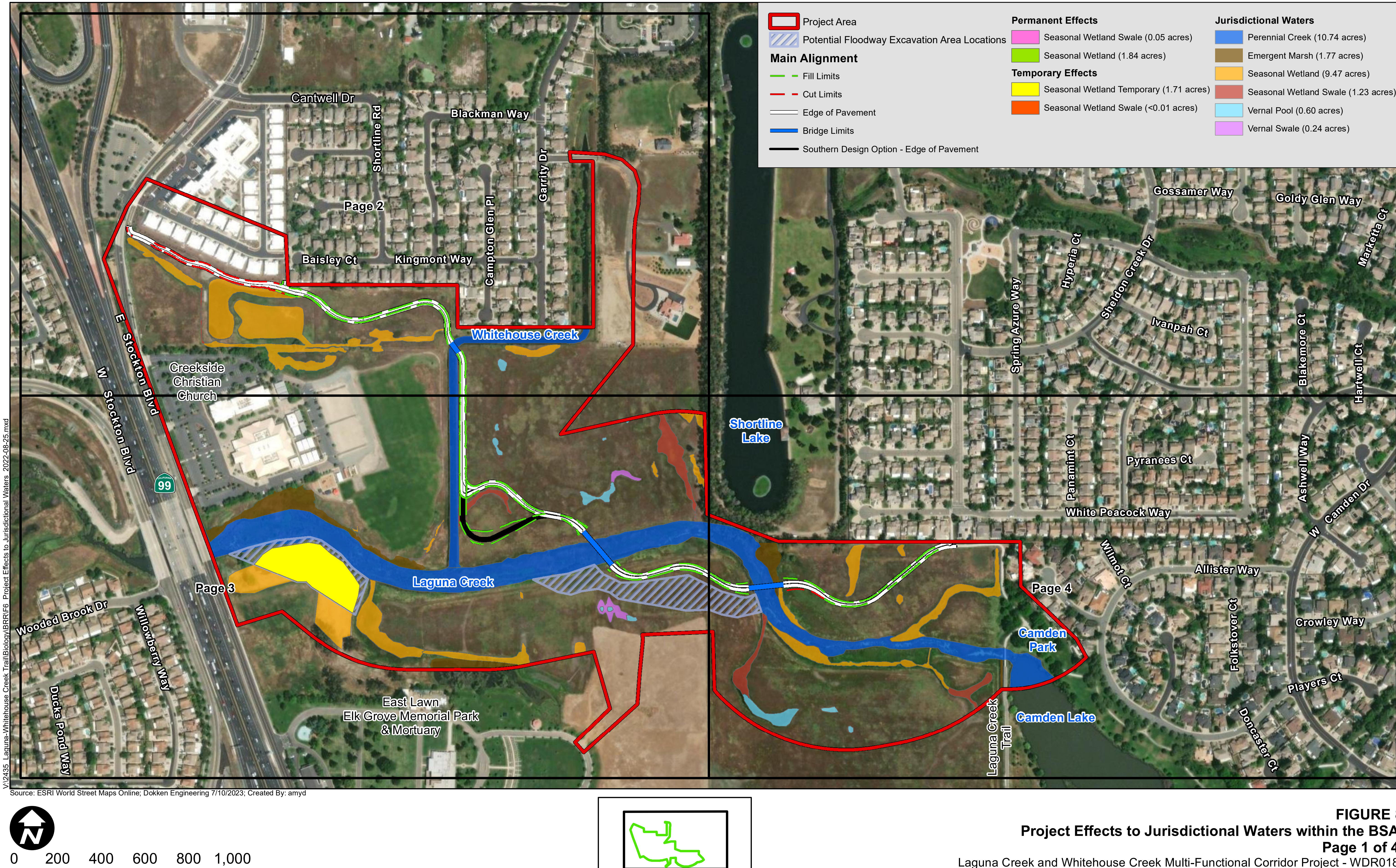
- Implementation of the Project shall require approval of a site-specific Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Program (WPCP) that would implement effective measures to protect water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques;

- Existing vegetation shall be protected in place where feasible to provide an effective form of erosion and sediment control. In locations where this is not feasible, the remaining BMPs listed below shall be implemented;
- Stabilizing materials shall be applied to the soil surface to prevent the movement of dust from exposed soil surfaces on construction sites as a result of wind, traffic, and grading activities;
- Roughening and/or terracing shall be implemented to create unevenness on bare soil through the construction of furrows running across a slope, creation of stair steps, or by utilization of construction equipment to track the soil surface. Surface roughening or terracing reduces erosion potential by decreasing runoff velocities, trapping sediment, and increasing infiltration of water into the soil, and aiding in the establishment of vegetative cover from seed.
- Soil exposure shall be minimized through the use of temporary BMPs, groundcover, and stabilization measures;
- The contractor shall conduct periodic maintenance of erosion- and sediment-control measures.

BIO-3: To conform to water quality requirements, the Project shall implement the following:

- Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants shall be a minimum of 100 feet from surface waters. Any necessary equipment washing shall occur where the water cannot flow into surface waters. The Project specifications will require the contractor to operate under an approved spill prevention and clean-up plan;
- Construction equipment shall not be operated in flowing water;
- Construction work shall be conducted according to site-specific construction plans that minimize the potential for sediment input to waters of the U.S. and State;
- Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life shall be prevented from contaminating the soil or entering surface waters;
- Equipment used in and around surface waters shall be in good working order and free of dripping or leaking contaminants; and,
- Any surplus concrete rubble, asphalt, or other debris from construction shall be taken to an approved disposal site.

BIO-4: All temporarily disturbed areas shall be restored onsite to pre-Project conditions or better prior to Project completion. Where possible, vegetation shall be trimmed rather than fully removed with the guidance of the Project biologist.



V:\2435_Laguna-Whitehouse Creek Trail\Biology\BRR\F6_Project Effects to Jurisdictional Waters_2022-08-25.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 7/10/2023; Created By: amyd

FIGURE 8
Project Effects to Jurisdictional Waters within the BSA
Page 1 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

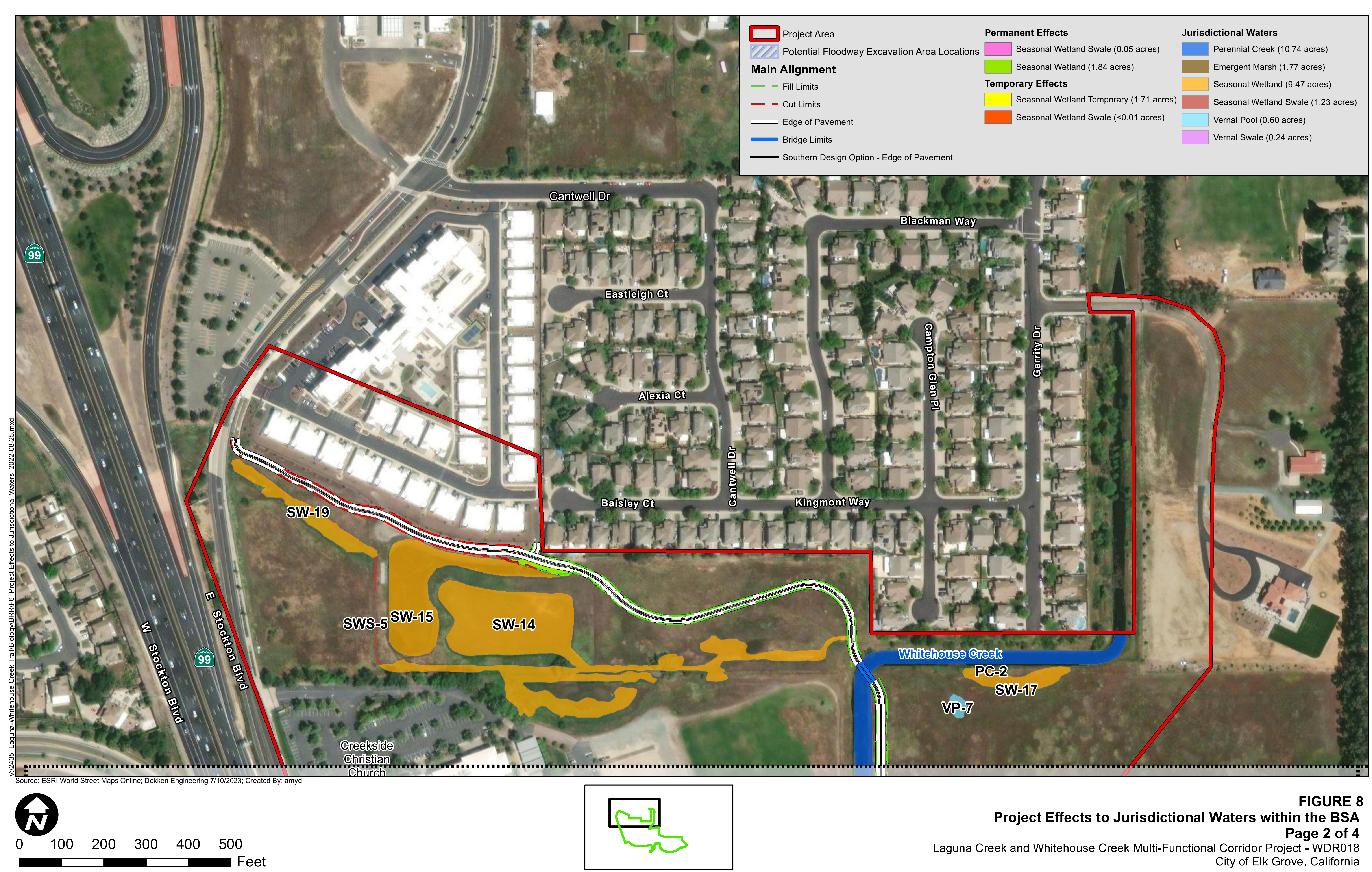
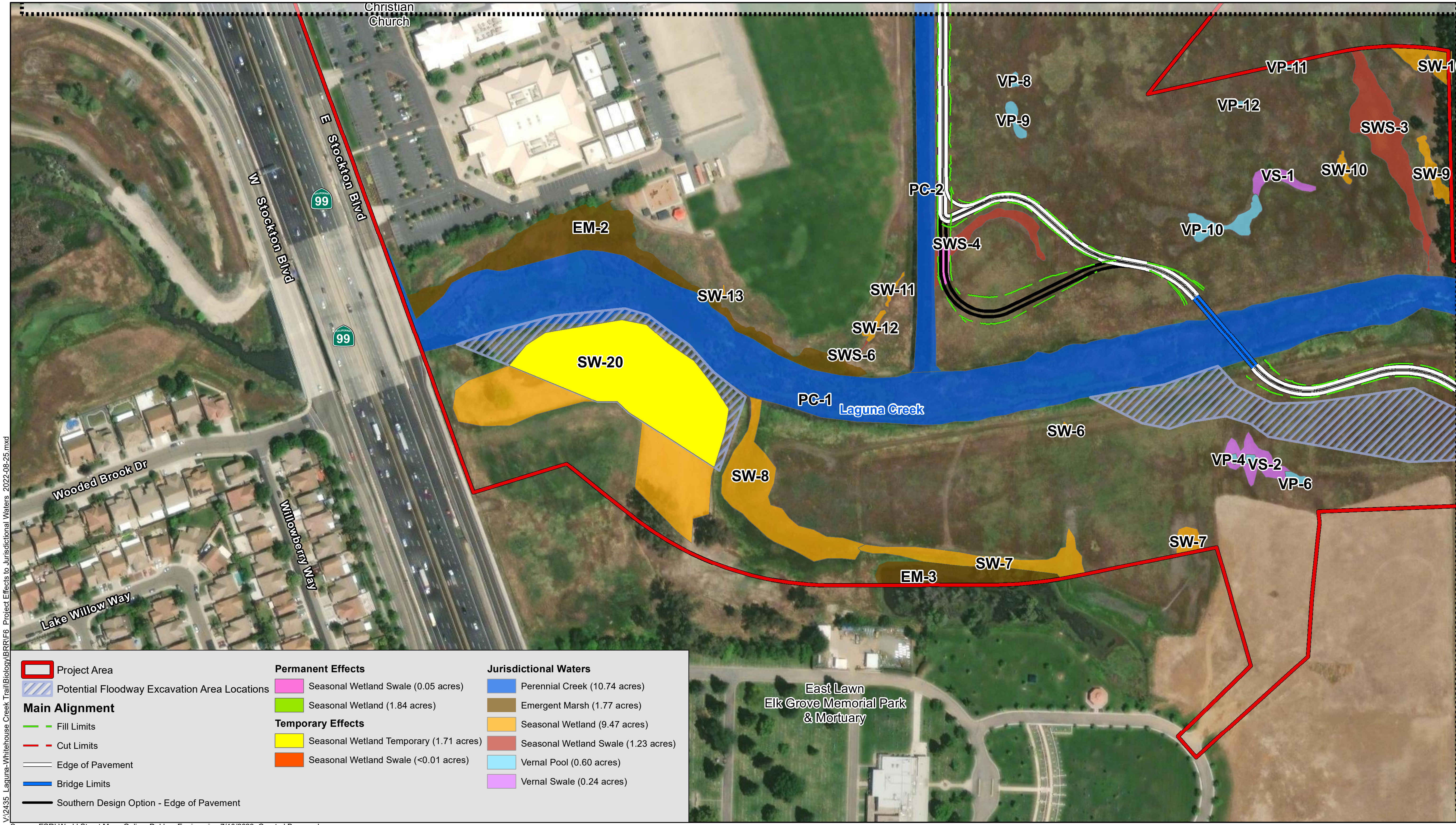


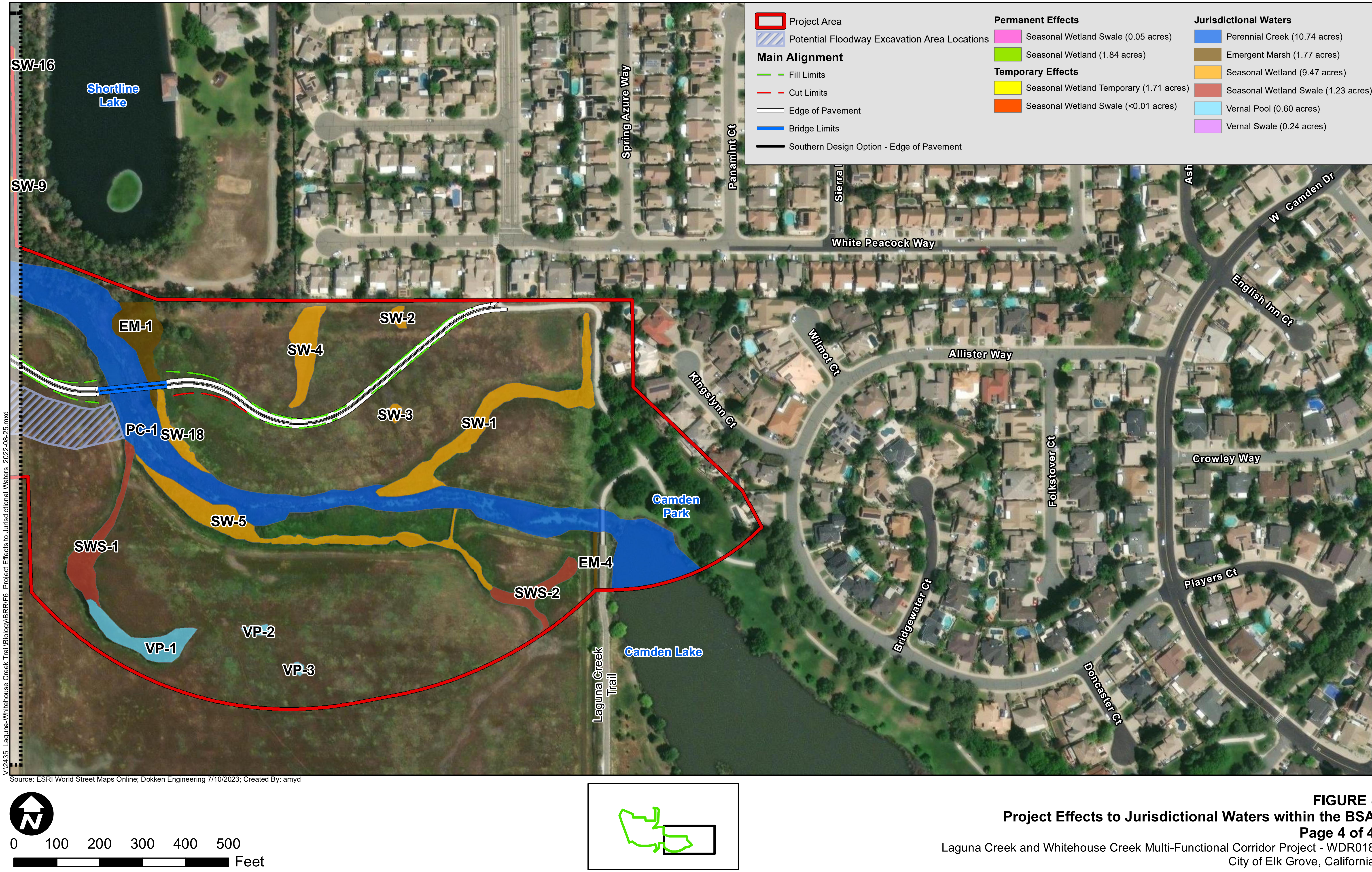
FIGURE 8
Project Effects to Jurisdictional Waters within the BSA
Page 2 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California



Source: ESRI World Street Maps Online; Dokken Engineering 7/10/2023; Created By: amyd

0 100 200 300 400 500 Feet

FIGURE 8
Project Effects to Jurisdictional Waters within the BSA
Page 3 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California



V:\2435_Laguna-Whitehouse Creek Trail\Biology\BRR\F6_Project Effects to Jurisdictional Waters_2022-08-25.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 7/10/2023; Created By: amyd

FIGURE 8
Project Effects to Jurisdictional Waters within the BSA
Page 4 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

d) **Less than Significant.** Laguna Creek and Whitehouse Creek corridors serves as an east-west movement corridor for aquatic and terrestrial wildlife through an otherwise developed portion of the City of Elk Grove and Sacramento County. Under existing conditions, Laguna Creek has been altered to the east and west of the Project area, and Whitehouse Creek has been modified from its original alignment. However, these waterways still provide access and movement along these linear features.

Both Laguna Creek and Whitehouse Creek provide a wildlife corridor for aquatic and terrestrial wildlife moving east-west through the BSA. Under the build alternative, the maintenance access road would not restrict or inhibit any aquatic or terrestrial wildlife from using this wildlife corridor; however, the ~~proposed~~ Project would have temporary and permanent impacts to Laguna and Whitehouse Creeks. As described above, impacts to Laguna and Whitehouse Creeks would be avoided and minimized to the greatest extent practicable.

The Project is not anticipated to have any effects to the habitat connectivity for birds, fish, or small and medium terrestrial wildlife. No significant loss of habitat connectivity is anticipated; therefore, this impact is less than significant.

e) **Less than Significant with Mitigation.** In 2003, the City established and adopted Chapter 16.130 (Swainson’s Hawk Impact Mitigation Fees) of the Elk Grove Municipal Code, which establishes mitigation policies tailored for projects in Elk Grove that have been determined through the CEQA process to result in a “potential significant impact” on Swainson’s hawk foraging habitat (City of Elk Grove, 2018). Chapter 16.130, often referred as the “Swainson’s Hawk Code,” serves as a conservation strategy that is achieved through the selection of appropriate replacement lands and through management of suitable habitat value on those lands in perpetuity.

The Project will permanently remove approximately 6.2 acres of Swainson’s hawk valley grassland foraging habitat. Mitigation measure **BIO-7** shall be implemented to compensate for permanent impacts to Swainson’s hawk foraging habitat pursuant the City’s “Swainson’s Hawk Code.” With the implementation of mitigation measure **BIO-7**, Project impacts regarding local policies or codes protecting biological resources would be less than significant with mitigation.

BIO-7: Valley grasslands in the Project area are considered Swainson’s hawk foraging habitat and are protected under Chapter 16.130 of the City Municipal Code, Swainson’s Hawk Impact Mitigation Fees. The City shall mitigate for the permanent loss of Swainson’s hawk foraging habitat at a 1:1 ratio. Mitigation can be accomplished through participation in the City of Elk Grove Swainson’s Hawk Impact Mitigation Fees Ordinance, other method acceptable to the California Department of Fish and Wildlife, or other method acceptable to the Elk Grove City Council pursuant to section 16.130.110.

f) **No Impact.** There are no adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plans within the Project area; therefore, the Project will have no impact or conflict with any habitat conservation plan.

V. CULTURAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

REGULATORY SETTING

CEQA provides statutory requirements for establishing the significance of historical resources in Public Resources Code (PRC) Section 21084.1. The CEQA Guidelines (Section 10564.5[c]) also require consideration of potential Project impacts to "unique" archaeological sites that do not qualify as historical resources. The statutory requirements for unique archaeological sites that do not qualify as historical resources are established in PRC Section 21083.2. These two PRC sections operate independently to ensure that significant potential effects on historical and archaeological resources are considered as part of a Project's environmental analysis. Historical resources, as defined in Section 15064.5 as defined in the CEQA regulations, include 1) cultural resources listed in or eligible for listing in the California Register of Historical Resources (California Register); 2) cultural resources included in a local register of historical resources; 3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in one of several historic themes important to California history and development.

Under CEQA, a Project may have a significant effect on the environment if the Project could result in a substantial adverse change in the significance of a historical resource, meaning the physical demolition, destruction, relocation, or alteration of the resource would be materially impaired. This would include any action that would demolish or adversely alter the physical characteristics of an historical resource that convey its historic significance and qualify it for inclusion in the California Register or in a local register or survey that meets the requirements of PRC Section 5020.1(l) and 5024.1(g). PRC Section 5024 also requires state agencies to identify and protect sate-owned resources that meet National Register of Historic Place (National Register) listing criteria. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer (SHPO) before altering, transferring, relocation, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register or are registered or eligible for registration as California Historical Landmarks.

CEQA and the CEQA Guidelines also recommend provisions be made for the accidental discovery of archaeological sites, historical resources, or Native American human remains during construction (PRC Section 21083.2(i) CCR Section 15064.5[d and f]).

AFFECTED ENVIRONMENT

APE

The Area of Potential Effects (APE) is located approximately 0.25 mile south of Sheldon Road and 0.46 mile north of Bond Road in the City of Elk Grove, Sacramento County, California. The western terminus of the Project is designated at the East Stockton Boulevard while the eastern terminus is designated at the is within Camden Park. More specifically, the Project is located within Sections 25 and 26 of Township 7 North, Range 5 East of the Mount Diablo Meridian as depicted on the Florin and Bruceville, California United States Geological Survey (USGS) 7.5-minute quadrangle maps (see **Figure 9**).

The Project includes all Project related ground disturbing activities necessary to create the multi-functional corridor, including construction access. The APE also includes additional areas for geotechnical study vehicle access. Ground-disturbing activities include cut and fill, grading, recontouring, vegetation removal, and construction access. The horizontal APE encompasses the open grassland and portions of Laguna and Whitehouse Creeks between East Stockton Boulevard and Camden Lake. As the trail will be elevated above existing ground surface elevations, the vertical APE is shallow, extending approximately one foot to account for grading and leveling; however, the vertical APE extends as much as 10 feet below existing grade for construction of the bridge abutments.

Records Search

In order to determine whether any previously recorded cultural resources were located within the APE, a records search (SAC-18-068) of the APE and a 1-mile buffer from its boundaries was obtained from the North Central Information Center (NCIC) at California State University, Sacramento, which is the repository for historic and archaeological records in Sacramento County. The NCIC identified five previous cultural resources investigations conducted that covered approximately 15 percent of the APE; none of which resulted in the discovery of cultural resources in the APE. The NCIC records search identified two previously recorded cultural resources within the APE, a historic-era complex and an irrigation complex.

The historic-era structure complex consists of two structures; however, based on a review of the California Department of Parks Recreation site form documenting this resource and field verification, the location of the resource was mis-recorded and is located outside the APE, along Sheldon Road. The irrigation complex consists of a concrete lined irrigation ditch. Similar to the historic-era complex, the location of the irrigation complex was also mis-recorded, as verified by a review of the California Department of Parks Recreation site form documenting this resource and field verification. Additionally, the irrigation complex was previously evaluated as not eligible for the National Register or California Register, and received SHPO concurrence on the evaluation. For these reasons, no previously recorded resources have been documented within the APE.

Source: ESRI World Street Maps Online; Dokken Engineering 7/10/2023; Created By: amyd

FIGURE 9
Archaeological Area of Potential Effects
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

Native American Consultation
As part of the identification efforts to determine whether the APE has Native American resources, the City contacted the Native American Heritage Commission (NAHC) in in March 2018 and requested a search of the NAHC Sacred Lands File (SLF). The NAHC responded in April 2018 that no resources were identified during the SLF search.

The City then sent Project notification consultation letters in April 2018 to the following Native American Tribal Governments, which have previously requested to be contacted regarding City projects:

- Ione Band of Miwok Indians
- United Auburn Indian Community of the Auburn Rancheria
- Wilton Rancheria

In response to the Project notification consultation letters, a representative of the United Auburn Indian Community of the Auburn Rancheria requested a visit to the Project area. Following a site visit in June 2018, the United Auburn Indian Community of the Auburn Rancheria responded via email that they had no further concerns about the Project and wished to close consultation; however, the United Auburn Indian Community of the Auburn Rancheria requested to be contacted should any Native American cultural resources be found during Project-related activities.

No other response or requests have been received from the United Auburn Indian Community of the Auburn Rancheria, Ione Band of Miwok Indians, or the Wilton Rancheria.

Cultural Survey
On April 4, 2019, Dokken Engineering archaeologist Brian S. Marks, Ph.D. conducted a ground surface inventory of the APE. Fifteen-meter wide pedestrian transects were used to inspect the ground surface. TAll cut banks, rodent burrow holes, and other exposed sub-surface areas were visually inspected for the presence of archaeological resources, soil color changes, and/or staining that could indicate past human activity or buried deposits. In areas of dense vegetation, boot scrapes were used approximately every 20 meters to expose the soil surface and check for the presence of cultural materials. The vertical APE was also visually inspected, where possible, for the presence of buried cultural resources. The visible cut banks along both Whitehouse and Laguna Creeks and rodent burrows throughout the APE provided an excellent opportunity to visually inspect the vertical soil profiles and recently exposed subsurface soils.

No prehistoric-era or historic-era cultural resources were identified during the pedestrian inspection in the APE. The survey verified that the historic-era structure complex and the irrigation complex identified during the NCIC records search were located outside of the APE. The survey also noted extensive ground disturbances throughout the APE, which occurred as result of previous field discing, grading, channelization of Whitehouse Creek, construction of the detention basins north of the Creekside Christian Church, and development of a parking lot, landscaping, and irrigation system between Creekside Christian Church and Whitehouse Creek. Given the extensive disturbances, any surface indications of cultural resources would likely have been destroyed.

Buried Cultural Resource Potential
While no cultural resources were identified during the field survey of the APE or after Native American consultation, the City analyzed the potential for the APE to contain buried cultural resources. The APE is situated in the Central Great Valley geomorphic province with an underlying quaternary alluvium geologic composition (Jennings et al. 1977) dating to approximately 11,500 years before present (B.P.), when human beings were present. These

types of deposits have potential to contain buried surfaces, as seasonal flooding would have deposited new soil layers atop the previous ground surface. Laguna Creek would have attracted human activities, such as hunting, food processing, or habitation, during both the prehistoric and historic eras; however, as the area was frequently flooded, it was not always suitable for habitation.

While the combined factors of the proximity to water and underlying alluvial deposits indicate that there is potential for buried cultural resources, the extensive ground disturbances noted throughout the APE indicate that the potential is low, especially within the shallow vertical APE. These disturbances would have either destroyed any cultural resources within the vertical and horizontal APE or would have uncovered cultural resources, should any have been present. For these reasons, buried cultural resources are not anticipated to be present within the APE.

DISCUSSION

a) **Less than Significant with Mitigation.** The records search, consultation with Native American organizations and governments, and the field survey did not identify any historical resources, as defined in §15064.5; however, with any project, there is always the possibility that unknown cultural resources may be encountered during construction. With the implementation of Mitigation Measure **CR-1** potential impacts from the Project would be less than significant with mitigation incorporated.

CR-1: If previously unidentified cultural materials are unearthed during construction, work shall be halted in that area until a qualified archaeologist can assess the significance of the find and develop a plan for documentation and removal of resources if necessary. Additional archaeological survey will be needed if Project limits are extended beyond the present survey limits.

b) **Less than Significant with Mitigation.** The records search, consultation with Native American organizations and governments, and the field survey did not identify any cultural resources within or immediately adjacent the APE. The buried cultural resource analysis concluded that given the extensive ground disturbances which have occurred throughout the APE, the potential for the APE to have buried cultural resources is considered low; however, with any project, there is always the possibility that unknown cultural resources may be encountered during construction. With the implementation of Mitigation Measure **CR-1** potential impacts from the Project would be less than significant with mitigation incorporated.

CR-1: If previously unidentified cultural materials are unearthed during construction, work shall be halted in that area until a qualified archaeologist can assess the significance of the find and develop a plan for documentation and removal of resources if necessary. Additional archaeological survey will be needed if Project limits are extended beyond the present survey limits.

c) **Less than Significant with Mitigation.** The records search, consultation with Native American organizations and governments, and the field survey did not identify any cultural resources within or immediately adjacent the APE. The buried cultural resource analysis concluded that given the extensive ground disturbances which have occurred throughout the APE, the potential for the APE to have buried cultural resources is considered low. Further, no indications of buried cultural resources were noted during the field survey or during review of historic maps; however, with any Project requiring ground disturbance, there is always the possibility that unmarked burials may be unearthed during construction. This impact is considered potentially significant. Implementation of Mitigation Measure **CR-2** would reduce this impact to a less-than significant level.

CR-2: Section 5097.94 of the Public Resources Code and Section 7050.5 of the California Health and Safety Code protect Native American burials, skeletal remains and grave goods, regardless of age and provide method and means for the appropriate handling of such remains. If human remains are encountered, work shall halt in that vicinity and the county coroner should be notified immediately. At the same time, an archaeologist shall be contacted to evaluate the situation. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within twenty-four hours of such identification. CEQA details steps to be taken if human burials are of Native American origin.

VI. ENERGY

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

REGULATORY SETTING

The EIR for the City's 2021 General Plan evaluated energy use within the City and surrounding region. The EIR noted that a substantial amount of the energy expended in California was related to transportation uses. The EIR found that on-road vehicles use about 90 percent of the petroleum consumed in California. Caltrans (2008) projected that 782 million gallons of gasoline and diesel were consumed in Sacramento County in 2015, which represents an increase of approximately 88 million gallons of fuel from 2010 levels. Numerous General Plan polices were developed with the specific intent of reducing per-capita energy use within the City.

DISCUSSION

a) **Less than Significant.** The Project would include construction of a multi-functional corridor along Laguna Creek and Whitehouse Creek. The ~~maintenance access road, which would be developed into a multi-use trail as part of Phase II,~~multi-functional corridor would consist of approximately 10 feet of pavement with unpaved shoulders ranging from 2 to 3 feet. Three bridges are proposed to provided access across Whitehouse and Laguna Creeks. The multi-functional corridor is necessary to provide much needed maintenance access to both creeks and to remove an existing gap in the City's trail system.

Currently, no lighting fixtures are proposed along the multi-functional corridor or as part of the ~~proposed~~ bridge structures. If lighting is considered in future phases of the Project, these fixtures will utilize Light Emitting Diode (LED) bulbs for energy efficiency. LED bulbs are energy efficient (consuming less than 20 watts per day) and have a long use-life. Construction of the Project would result in a short-term increase in consumption of oil-based energy products associated with construction equipment; however, consumption of those oil-based energy products necessary for the Project would be used efficiently and in accordance with applicable local, state, and federal laws. Appropriate construction equipment would be used to minimize wasteful or inefficient actions, and construction energy consumption would not cause a significant reduction in available supplies Therefore, the impact would be less than significant.

b) **No Impact.** The Project would implement numerous General Plan transportation-related goals and policies relevant to increasing opportunities for multi-modal transportation, creating bicycle accessibility, and closing gaps in the current bicycle network. Therefore, the ~~proposed~~ Project would provide for more energy-efficient transportation options within the City, and the overall effect to energy efficiency would be beneficial. Therefore, the Project would not conflict with or obstruct a State or local plan for renewable energy, and no impact would occur.

VII. GEOLOGY AND SOILS

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

REGULATORY SETTING

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects “outstanding examples of major geological features.” Topographic and geologic features are also protected under the CEQA.

This section also discusses geology, soils, and seismic concerns as they relate to public safety and Project design. Earthquakes are prime considerations in the design and retrofit of structures.

DISCUSSION

a) No Impact. The Project would not expose people or structures to potential substantial adverse effects, including risk of loss, injury, or death involving rupture of a known fault, strong seismic ground shaking, seismic-related ground failure, or landslides. The Project is not located within an Alquist Priolo Earthquake Fault Zone. The nearest seismic sources are the Midland Fault approximately 23 miles southwest of the Project site, and the Ione Fault approximately 27 miles southeast of the Project site.

Landslides usually occur in locations with steep slopes and unstable soils. According to the California Department of Conservation (CDC) California Geological Survey Seismic Hazards Zonation Program (CDC 2015) the Project area is not within a known area of landslide concern. The majority of the Project area is situated on flat or very gently sloping topography where the potential for slope failure is minimal to low. The Project would also have no impact related to seismic-related failure, including liquefaction, because the potential is believed to be slight at this predominantly flat, low-seismicity site. Design and construction in accordance with Caltrans' seismic design criteria will ensure that substantial impacts due to seismic forces and displacements are avoided or minimized to the extent feasible. The Project is not on a geologic unit or soil that is unstable or that would become unstable as a result of the Project. On- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse is not anticipated. The Project would result in no impact.

b) **Less than Significant with Mitigation.** The NRCS Web Soil Survey was used to identify soils within the BSA (NRCS 2018). Specific soil units within the BSA include: Bruella sandy loam, 0 to 2 percent slopes; Dierssen sandy clay loam, drained, 0 to 2 percent slopes; Madera loam, 0 to 2 percent slopes, San Joaquin silt loam, leveled, 0 to 2 percent slopes, and; San Joaquin silt loam, 0 to 3 percent slopes. The ~~proposed~~ Project would consist of the construction of the multi-functional maintenance access road and bridges along Laguna and Whitehouse Creek, which is anticipated to require bank disturbance and vegetation removal

The construction of the bridges, and additional ground disturbance along the maintenance access road would cause potential impacts of soil erosion or loss of topsoil. Potential impacts to soils would be minimized through soil stabilization measures covered within the required General Construction MS4 Permit and implementation of the SWPPP as discussed in Section 2.4 and Section X. Erosion control practices outlined in a SWPPP, would reduce any potential impacts of the Project to a less than significant level, and no mitigation is required. In addition, measures **WQ-1** through **WQ-4** in Section X of this document would further reduce impacts to erosion of soil to less than significant with mitigation.

c) **No Impact.** Refer to discussion a). The Project will not be located on soil that is known to be unstable or would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. No impact would occur due to the Project.

d) **No Impact.** Refer to discussion a) and b). The Project will not be located on expansive soils creating substantial risks to life or property. No impact would occur due to the Project.

e) **No Impact.** The Project will not utilize septic tanks or an alternative waste water disposal system on the site. Therefore, the Project would have no impact due to soils incapable of adequately supporting septic systems.

f) **Less than Significant with Mitigation.** A literature review was performed to determine whether paleontological resources have been previously identified in the Project area and to identify the overall paleontological sensitivity of the Project area.

According to the Sacramento County General Plan (2011), a search of the University of California Museum of Paleontology (UCMP) collections database identified five localities in Sacramento County where paleontological resources have been identified. These fossil remains were encountered during excavation activities in Sacramento County within Pleistocene aged formations, and all were within the Riverbank formation.

A review of the Geologic Map of the Sacramento Quadrangle prepared by the California Geological Survey (2001) shows the Project area is within the Riverbank Formation. While a locality search did not identify any occurrences of paleontological resources within the Project area, literature research revealed that a fossilized mammoth was found in the City, within the Rancho Verde residential housing development, in 2006 approximately 4.5 miles southwest of the Project area. This fossil finding was at approximately 4 feet below ground surface. The vertical ground disturbance depth for the Project area is primarily 1 foot for the corridor but can extend 10 feet in depth for construction of the bridge abutments. Further, extensive ground disturbance has occurred throughout the Project area as result of previous field discing, grading, channelization of Whitehouse Creek, construction of the detention basins north of the Creekside Christian Church, and development of a parking lot, landscaping, and irrigation system between Creekside Christian Church and Whitehouse Creek.

When the proximity of the Project to the known paleontological occurrence, the presence of the Riverbank Formation within the Project area, the extent of ground disturbance, and the primarily shallow vertical ground disturbance depth required to construct the Project are viewed collectively, the potential for intact paleontological resources to be present within the Project area is considered low; however, with any project requiring ground disturbance within a potentially sensitive area, there is always the possibility that unknown paleontological resources may be unearthed during construction. With the implementation of mitigation measures **PAL-1** and **PAL-2**, Project impacts regarding direct or indirect impacts to paleontological resources would be less than significant with mitigation.

PAL-1: Prior to the start of construction, all construction personnel shall receive a paleontological sensitivity training, detailing the types of paleontological resources that may be encountered and procedures to follow if a find should occur.

PAL-2: If paleontological resources (i.e., fossils) are discovered during ground-disturbing activities, the implementing agency will immediately be notified, and will ensure that their contractors shall stop work in that area and within 100 feet of the find until a qualified paleontologist can assess the significance of the find and develop appropriate treatment measures. Treatment measures will be made in consultation with the implementing agency.

VIII. GREENHOUSE GAS EMISSIONS

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

REGULATORY SETTING

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy have increased dramatically in recent years. These efforts are primarily concerned with the emissions of GHG related to human activity that include CO_2, CH_4, NO_X, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (s, s, s, 2 –tetrafluoroethane), and HFC-152a (difluoroethane).

In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires the CARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year; however, in order to enact the standards California needed a waiver from the EPA. The waiver was denied by the EPA in December 2007 and efforts to overturn the decision had been unsuccessful. See *California v. Environmental Protection Agency*, 9th Cir. Jul. 25, 2008, No. 08-70011. On January 26, 2009, it was announced that the EPA would reconsider their decision regarding the denial of California's waiver. On May 18, 2009, President Obama announced the enactment of a 35.5 mpg fuel economy standard for automobiles and light duty trucks. On June 30, 2009, EPA granted California the waiver. The granting of the waiver has allowed California to implement even stronger standards. In 2013 CARB adopted new Phase 1 regulation for GHG emissions, establishing GHG emission limits on truck and engine manufacturers that harmonizes with the EPA rule. In 2016, the EPA and the National Highway Traffic Safety Administration (NHTSA), adopted federal Phase 2 standards that built on the Phase I standards to achieve additional GHG reductions. California aligned with these federal Phase 2 standards in 2018.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team. With Executive Order S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this executive order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Climate change and GHG reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing GHG emissions reductions and climate change. California, in conjunction with several environmental organizations and several other states, sued to force the EPA to regulate GHG as a pollutant under the Clean Air Act (Massachusetts vs. [EPA] et al., 549 U.S. 497 (2007). The court ruled that GHG does fit within the Clean Air Act's definition of a pollutant, and that the EPA does have the authority to regulate GHG. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting GHG emissions. On December 7, 2009, the EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

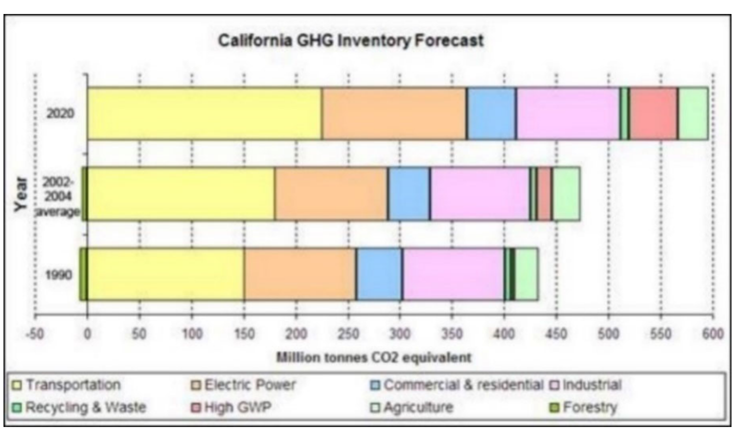
<u>Endangerment Finding:</u> The Administrator found that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6) in the atmosphere threaten the public health and welfare of current and future generations.

<u>Cause or Contribute Finding:</u> The Administrator found that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the EPA's greenhouse gas emission standards for light-duty vehicles, which were jointly by EPA and the Department of Transportation's National Highway Safety Administration on September 15, 2009.

According to Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents (March 5, 2007), an individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG. In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See CEQA Guidelines sections 15064(i)(1) and 15130. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult if not impossible task. As part of its supporting documentation for the Draft *Climate Change Scoping Plan*, CARB recently released an updated version of the GHG inventory for California (June 26, 2008). Within the report, **Figure 10** is a graphical representation of the total GHG emissions for California for 1990, 2002-2004 average, and 2020 projected if no action is taken.

Figure 10. California Greenhouse Gas Inventory



DISCUSSION

a) Less Than Significant. GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. For the Project, construction GHG emissions would include emissions produced by onsite construction equipment. As discussed in Section 2.3, “Air Quality”, construction emission would be reduced through implementation of mitigation measure AQ-1.

GHG emissions produced during operations are those that result from potentially increased traffic volumes or changes in automobile speeds. By design, the multi-functional corridor~~Phase II of the Project~~ is intended to increase pedestrian and bicycle accessibility to existing communities, schools and other existing trails and further encourage non-motorized travel within the Project area. The Project would not increase the number of automobiles in the traffic system; conversely, by completion of a gap within the City’s trail system, the Project may reduce overall automobile use. No impact to greenhouse gas emissions or climate change would result from operations.

Construction in Sacramento County contributes approximately 68,857 metric tons of GHG every year (Sacramento Countywide Regional Community Greenhouse Gas Inventory 2013). The on-site construction equipment for Project is anticipated to emit 373.97 metric tons of GHG during construction, approximately <0.001% of the annual GHG emissions during construction within Sacramento County. Therefore, the ~~proposed~~ Project contribution to global climate change through GHG emissions are considered less than significant.

b) No Impact. Implementation of the ~~proposed~~ Project would not conflict with or obstruct implementation of any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. By design, ~~proposed~~ improvements include consistency with the goals identified by the City of Elk Grove Bicycle, Pedestrian, and Trails Master Plan (2021). The ~~proposed~~ Project would also be consistent with circulation policies outlined in the City of Elk Grove and Sacramento County General Plans. The ~~Proposed~~ Project aligns with Policy CI-1 of the City of Elk Grove General Plan which promotes all modes of travel including bicycle and pedestrian to coordinate with efforts to reduce air pollution (City of Elk Grove 2011). The ~~Proposed~~ Project also aligns with Policy AQ-1 of the Sacramento County General Plan Air Quality Element, which promotes the development of pedestrian/bicycle access and circulation to encourage residents to use alternative modes of transportation to conserve air quality and minimize direct and indirect emission of air contaminants (County of Sacramento 2017). Construction and operation of the ~~proposed~~ Project would be implemented consistent with applicable regulatory standards and requirements, including consistency with all applicable SMAQMD rules and thresholds. Therefore, no impact would result from development of the ~~Proposed~~ Project.

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☒	☐	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☒~~☐~~	☐	☐~~☒~~

REGULATORY SETTING

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health and land use.

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976, and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during Project construction.

DISCUSSION

a) **Less than Significant with Mitigation.** The Project would involve the use of heavy equipment for grading, hauling, and materials handling. Use of this equipment may require the use of fuels and other common materials that have hazardous properties (e.g., fuels are flammable). These materials would be used and stored in accordance with all federal, state, and local applicable laws and regulations, and, if used properly, would not pose a hazard to people, animals, or plants. All refueling of construction vehicles and equipment would occur within the designated staging area for the Project, and away from any aquatic features. The use of hazardous materials would be temporary, and the Project would not include a permanent use or source of hazardous materials. Mitigation Measure **HAZ-1** would reduce any potential impacts to a less than significant level from temporary construction equipment and activities.

b) **Less than Significant with Mitigation.** The Project would involve the construction of a maintenance access road. With any Project conducting ground disturbance, there is a potential for unknown contaminates or accident conditions involving the release of hazardous materials into the environment, as well as upset or accident relating to machinery. The Sacramento County Environmental Management Division (SCEMD) is the Certified Unified Program Agency (CUPA) for the incorporated and unincorporated areas within Sacramento County. As the CUPA, the SCEMD regulates the use, storage, and disposal of hazardous materials and is available to respond to hazardous materials complaints or emergencies, if any, during construction. The handling, use, and storage of hazardous materials during construction would be required to be compliant with SCEMD standards, and with the implementation of **HAZ-1** impacts are considered less than significant with mitigation incorporated.

HAZ-1: The contractor shall prepare a Spill Prevention, Control, and Countermeasure Program (SPCCP) prior to the commencement of construction activities. The SPCCP shall include information on the nature of all hazardous materials that shall be used on-site. The SPCCP shall also include information regarding proper handling of hazardous materials, and clean-up procedures in the event of an accidental release. The phone number of the agency overseeing hazardous materials and toxic clean-up shall be provided in the SPCCP.

c) **Less than Significant with Mitigation.** ~~The construction phase~~Construction of the ~~proposed~~ Project has the potential to result in emissions of toxic air contaminants/HAPs in the form of diesel particulate matter emissions from the operation of diesel-fueled internal combustion engines. Creekside Christian Church is adjacent to a segment of the ~~proposed~~ Project. Within Creekside Christian Church, the Shining Stars Preschool/Kindergarten provide childcare services. Under Measures AQ-1 discussed in Section III above, the City would apply SMAQMD Basic Construction Emission Control Practices, to reduce any potential emissions to a less than significant level. Implementation of BMPs and specific instructions for handling of construction equipment such as limiting idle times to a maximum of five minutes along with frequent maintenance of the equipment which ultimately keeps the equipment running and operating like it should and therefore limit the amount of emissions. Additionally, the construction activities would be temporary and intermittent which would further reduce any potential impact.

Hazardous materials used during construction would be typical of common construction activities and would be handled by the contractor in accordance with applicable federal, state, and local regulation for hazardous substances. Additionally, the amount of these materials needed for on-site equipment maintenance would not be enough to cause a significant hazard to the public, or any nearby schools, if released since the quantity of these hazardous materials on-site at any one given time would only amount to a refueling truck and the construction equipment. Measure **HAZ-1** would be implemented to require the contractor to prepare an accidental-spill prevention and response plan which would include BMPs to control for the accidental release of hazardous materials into the environment ensuring spills are appropriately cleaned up and would not result in a release of hazardous materials into the environment.

Therefore, with the implementation of **AQ-1** and **HAZ-1** the Project would have a less than significant with mitigation incorporated related to emitting or handling of hazardous waste within one-quarter mile of an existing school.

AQ-1: Implement SMAQMD Basic Construction Emission Control Practices, where feasible:

- Water all exposed surfaces two times daily. Exposed surfaces include (but are not limited to) soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least 2 feet of freeboard space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways shall be covered.
- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speeds on unpaved roads to 15 miles per hour.
- All roadway, driveway, sidewalk, and parking lot paving should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.
- Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation [California Code of Regulations, Title 13, sections 2249 and 2449.1].

HAZ-1: The contractor shall prepare a Spill Prevention, Control, and Countermeasure Program (SPCCP) prior to the commencement of construction activities. The SPCCP shall include information on the nature of all hazardous materials that shall be used on-site. The SPCCP shall also include information regarding proper handling of hazardous materials, and clean-up procedures in the event of an accidental release. The phone number of the agency overseeing hazardous materials and toxic clean-up shall be provided in the SPCCP.

d) **No Impact.** A review of the GeoTracker (SWRCB 2015) and EnviroStor (DTSC 2018) databases indicated that there are no hazardous waste cleanup sites, facilities, or other sites located within the Project area; however, there is one inactive cleanup site, "Obie's Dump" located approximately 1,500 feet north of the Project area and north of Sheldon Road. No Project activities are proposed at this location, and no impacts related to this cleanup site are anticipated to occur. Therefore, the Project would not create a significant hazard to the public or environment and no impact would result from Project implementation.

e) **No Impact.** The Project would not result in a safety hazard for people residing or working in the Project area as the Project is not within the vicinity of an airport land use plan or within two miles of a public airport or public use airport. Therefore, there would be no impact related to safety of the public in the Project area.

f) **No Impact.** The Project would be constructed within an open space area where it would not impair or alter any existing emergency response plan or emergency evacuation plan; therefore, no impact would occur.

g) ~~**No Impact**~~**Less than Significant with Mitigation.** The City of Elk Grove is within a Local Responsibility Area and according to the Sacramento County Local Hazard Mitigation Plan Update, the Project area is designated as a "Moderate" Fire Hazard Severity Zone. However, under Measure **AQ-1** discussed in Chapter 3 Section III, all exposed surface areas will be watered two times daily during construction. Additionally, since the Project is being put forth by the City, it is required to follow standard General Plan policies and applicable Fire Code regulations, which would reduce wildland fire hazard risk. With implementation of **AQ-1** and General Plan Policies and applicable Fire Code regulations, wildland fire hazard impacts would be less than significant with mitigation. ~~The Project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, and no wildlands are adjacent to or within the Project area; therefore, no impact would occur.~~

X. HYDROLOGY AND WATER QUALITY

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
(i) result in substantial erosion or siltation on- or off-site;	☐	☒	☐	☐
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☒	☐	☐
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☒	☐	☐
(iv) impede or redirect flood flows?	☐	☒	☐	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☒	☐	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☒	☐	☐

REGULATORY SETTING

Section 401 of the Clean Water Act (CWA) requires water quality certification from the State Water Resources Control Board (SWRCB) or from a Regional Water Quality Control Board (RWQCB) when the project requires a CWA Section 404 permit. Section 404 of the CWA requires a permit from the U.S. Army Corps of Engineers (Corps) to discharge dredged or fill material into waters of the United States.

Along with CWA Section 401, CWA Section 402 establishes the National Pollutant Discharge Elimination System (NPDES) permit for the discharge of any pollutant into waters of the United States. The federal Environmental Protection Agency has delegated administration of the NPDES program to the SWRCB and nine RWQCBs. The SWRCB and RWQCB also regulate other waste discharges to land within California through the issuance of waste discharge requirements under authority of the Porter-Cologne Water Quality Act.

The City of Elk Grove along with the Cities of Citrus Heights, Folsom, Galt, Rancho Cordova, and Sacramento, and the County of Sacramento operate under a Municipal Separate Storm Sewer Systems (MS4) permit to discharge urban runoff from in their municipal jurisdictions (Order No. R5-2016-0040 with the Elk Grove-specific General Order No. as R5-2016-0040-005 and NPDES Permit No. CAS0085324) (CVRWQCB, 2016). The permit covers requirements for management of hydromodification and also requires that the City prepare a Storm Water Management Plan (also known as Stormwater Quality Improvement Plans) and impose water quality and watershed protection measures for all development projects. The intent of the waste discharge requirements in the NPDES Permit is to attain water quality standards and protection of beneficial uses consistent with the Basin Plan. The NPDES permit prohibits discharges from causing violations of applicable water quality standards or resulting in conditions that create a nuisance or water quality impairment in receiving waters. The NPDES also requires every new construction project to secure a permit that implements the following measures:

- Eliminate or reduce non-stormwater discharges to stormwater systems and other waters of the nation.
- Develop and implement a SWPPP.
- Perform inspections of stormwater control structures and pollution prevention measures.

Stormwater quality control measures within Elk Grove are guided by the Sacramento Region Stormwater Quality Design Manual (July 2018). The manual outlines planning tools and requirements to reduce urban runoff pollution to the maximum extent practicable from new development and redevelopment projects, including the use of porous surfaces on roadways.

AFFECTED ENVIRONMENT

Hydrology

Hydrological resources within the BSA include Shortline Lake, Laguna Creek, Whitehouse Creek, and associated wetland features: vernal pools, vernal swales, seasonal wetlands, seasonal wetland swales, and emergent marsh. The City is part of the Sacramento River watershed—a 27,000-square-mile watershed, which includes portions of the Sacramento River and Cosumnes River. Laguna Creek and Whitehouse Creek are part of the Morrison Creek watershed, and Laguna Creek subwatershed, within the Lower Sacramento River Hydrologic Unit (HUC 6). Whitehouse Creek flows from east to west and has been redirected around residential developments north of the Project area. Whitehouse Creek then joins with Laguna Creek within the Project area approximately 0.25 miles east of East Stockton Boulevard. Laguna Creek flows east to west travelling approximately 4000 linear feet through the BSA from Camden Lake to East Stockton Boulevard.

Groundwater

Seasonal groundwater level data was reviewed through the Groundwater Information Center Interactive Map Web Application (https://gis.water.ca.gov/app/gicima/) provided by the California Department of Water Resources. In the Project area, ground water depth ranges from 55 to 70 feet. General groundwater depth may be influenced by local pumping, rainfall, and irrigation patterns. The ~~proposed~~ Project is within the Sacramento Valley Groundwater Basin, and more specifically, the South American Subbasin. The South American Subbasin is defined by the American River to the north, the Cosumnes River and Mokelumne River to the south, the Sierra Nevada to the east, and the Sacramento River to the west.

Flooding

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) the majority of the Project lies within the 100-year Flood Zone (see **Appendix D** for FEMA FIRM Maps).

DISCUSSION

a) Less than Significant with Mitigation.

Construction Water Quality Impacts

The Project will disturb greater than one acre of soil, therefore a Construction Storm Water General Permit is required, issued by the State Water Resources Control Board to address storm water runoff. The permit will address clearing, grading, grubbing, and disturbances to the ground, such as stockpiling, or excavation. This permit will also require the City to prepare and implement a SWPPP with the intent of keeping all products of erosion from moving off site into receiving waters. The SWPPP includes BMPs to prevent construction pollutants from entering storm water runoff. Mitigation Measure **WQ-1** through **WQ-4** are required to ensure the Project grading will conform to State Water Resources Control Board standards and in doing so will ensure the Project impacts will be less than significant with mitigation.

Operational Water Quality Impacts

The Project ~~consists of~~includes construction of a multi-functional corridor which will increase ~~maintenance access road which would be developed into a multi-use trail as part of Phase II, with minor improvements to provide trail amenities. I~~impervious surfaces ~~would be increased~~ within the Project footprint; however, the addition of impervious surfaces would not occur within the entire Project footprint and would be limited to the maintenance access road.

WQ-1: The construction contractor shall adhere to the SWRCB Order No. 2013-0001-DWQ as National Pollutant Discharge Elimination System (NPDES) Permit pursuant to Section 402 of the CWA. The City is designated within the NPDES Phase II General Permit. This General Permit applies to the discharge of stormwater from small municipal separate storm sewer systems (MS4s). Under this permit, stormwater discharges must not cause or contribute to an exceedance of water quality standards contained in the California Toxics Rule or the Water Quality Control Plan for the Sacramento and San Joaquin Basin (Basin Plan).

WQ-2: To conform to water quality requirements, the SWPPP must include the following:

- Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants must be a minimum of 100 feet from surface waters. Any necessary equipment washing must occur where the water cannot flow into surface waters. The Project specifications will require the contractor to operate under an approved spill prevention and clean-up plan;
- Construction equipment will not be operated in flowing water;
- Construction work must be conducted according to site-specific construction plans that minimize the potential for sediment input to surface waters;
- Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life shall be prevented from contaminating the soil or entering surface waters;

- Equipment used in and around surface waters must be in good working order and free of dripping or leaking contaminants; and
- Any concrete rubble, asphalt, or other debris from construction must be taken to an approved disposal site.

WQ-3: Prior to the start of construction activities, the Project limits in proximity to jurisdictional waters must be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking to ensure construction will not encroach into jurisdictional waters. The Project biologist will periodically inspect the ESA to ensure sensitive locations remain undisturbed (*same as **BIO-1***).

WQ-4: Contract specifications shall include the following best management practices (BMPs), where applicable, to reduce erosion during construction (*same as **BIO-2***):

- Implementation of the Project shall require approval of a site-specific SWPPP that would implement effective measures to protect water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques;
- Existing vegetation shall be protected in place where feasible to provide an effective form of erosion and sediment control. In locations where this is not feasible, the remaining BMPs listed below shall be implemented;
- Stabilizing materials shall be applied to the soil surface to prevent the movement of dust from exposed soil surfaces on construction sites as a result of wind, traffic, and grading activities;
- Roughening and terracing shall be implemented to create unevenness on bare soil through the construction of furrows running across a slope, creation of stair steps, or by utilization of construction equipment to track the soil surface. Surface roughening or terracing reduces erosion potential by decreasing runoff velocities, trapping sediment, and increasing infiltration of water into the soil, and aiding in the establishment of vegetative cover from seed.

b) **Less than Significant.** The Project would not directly or indirectly result in the construction of uses that would utilize groundwater supplies. However, the Project is currently designed with an impervious surface for the multi-functional access path (totaling approximately 1 acre of impervious surface), which will alter the rate of infiltration at the Project site. However, the Project may consider using pervious pavement during final design. ~~Proposed i~~Impervious surface impacts to groundwater resources would be minimal, as the ~~proposed~~ Project does not contain elements that would add to or draw from groundwater supplies. Additionally, the ~~proposed~~ Project would not be constructed immediately above a preexisting well, nor would areas known to contain wells be disturbed by construction of the ~~proposed~~ Project. Therefore, impacts to groundwater supplies would be less than significant.

c) **(i). Less than Significant with Mitigation.** The ~~proposed~~ Project consists of construction of a multi-functional access path. Minor loss of vegetation and general disturbance to the soil for construction of the ~~proposed~~ Project would occur within the Project footprint. Removal of vegetation and soil can accelerate erosion processes within the Project area and increase the potential for sediment to enter into Laguna Creek and/or Whitehouse Creek. The Project would also be subject to Chapter 16.44 of the Elk Grove Municipal Code, which establishes administrative procedures, minimum standards for review, and implementation and enforcement procedures for controlling erosion, sedimentation, disruption of existing drainage and related environmental damage caused by land clearing activities, grading, filling, and land excavation. Compliance with Chapter 16.44 of the Municipal Code would reduce impacts associated with erosion and siltation. Implementation of **WQ-1** through **WQ-4** will ensure the Project will conform with current regulations and therefore ensure the Project impacts will be less than significant with mitigation.

(ii) and (iii) Less than Significant with Mitigation. The ~~proposed~~ Project is currently designed to add a net impervious surface of approximately 1 acre to the area due to the addition of pavement for multi-functional access path. The Project is located in the proximity of Laguna Creek and Whitehouse Creek, but would not alter the course of either creek or any other stream or river. Any additional stormwater runoff due to a localized increase in impervious surfaces will flow onto adjacent natural or landscaped areas for absorption by vegetation and/or percolation into the ground and will not result in flooding on- or off-site. The existing drainage patterns of the area would not be altered. <u>Further, hydraulic analysis prepared for the Project concluded that the Project would not result in a rise of the existing water surface elevation.</u> Compliance with Chapter 16.44 of the Municipal Code would reduce impacts associated with erosion and siltation. Implementation of **WQ-1** through **WQ-4** will ensure the Project will conform with current regulations and in doing so will ensure the Project impacts will be less than significant with mitigation.

(iv) Less than Significant with Mitigation. The Project would add a net impervious surface of approximately 1 acre to the area due to the addition of pavement for the construction of the multi-functional access path, which will result in an increase in the quantity of runoff generated in a storm event. However, the Project may consider using pervious pavement during final design. The quantity of additional runoff generated from the ~~proposed~~ Project would not be substantial and is not expected to contribute to runoff water that would exceed the capacity of existing or planned stormwater drainage systems in the Project vicinity. <u>Additionally, hydraulic analysis prepared for the Project concluded that the Project would not result in a rise of the existing</u> ~~have a negligible effect on the~~ <u>water surface elevation in the Laguna Creek and Whitehouse Creek floodplain.</u> Compliance with Chapter 16.44 of the Municipal Code would reduce impacts associated with erosion and siltation. Implementation of **WQ-1** through **WQ-4** will ensure the Project shall conform with current regulations and in doing so shall ensure the Project impacts will be less than significant with mitigation.

WQ-1: The construction contractor shall adhere to the SWRCB Order No. 2013-0001-DWQ as National Pollutant Discharge Elimination System (NPDES) Permit pursuant to Section 402 of the CWA. The City is designated within the NPDES Phase II General Permit. This General Permit applies to the discharge of stormwater from small municipal separate storm sewer systems (MS4s). Under this permit, stormwater discharges must not cause or contribute to an exceedance of water quality standards contained in the California Toxics Rule or the Water Quality Control Plan for the Sacramento and San Joaquin Basin (Basin Plan).

WQ-2: To conform to water quality requirements, the SWPPP must include the following:

- Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants must be a minimum of 100 feet from surface waters. Any necessary equipment washing must occur where the water cannot flow into surface waters. The Project specifications will require the contractor to operate under an approved spill prevention and clean-up plan;

- Construction equipment will not be operated in flowing water;
- Construction work must be conducted according to site-specific construction plans that minimize the potential for sediment input to surface waters;
- Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life shall be prevented from contaminating the soil or entering surface waters;
- Equipment used in and around surface waters must be in good working order and free of dripping or leaking contaminants; and
- Any concrete rubble, asphalt, or other debris from construction must be taken to an approved disposal site.

WQ-3: Prior to the start of construction activities, the Project limits in proximity to jurisdictional waters must be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking to ensure construction will not encroach into jurisdictional waters. The Project biologist will periodically inspect the ESA to ensure sensitive locations remain undisturbed (*same as* ***BIO-1***).

WQ-4: Contract specifications shall include the following best management practices (BMPs), where applicable, to reduce erosion during construction (*same as* ***BIO-2***):

- Implementation of the Project shall require approval of a site-specific SWPPP that would implement effective measures to protect water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques;
- Existing vegetation shall be protected in place where feasible to provide an effective form of erosion and sediment control. In locations where this is not feasible, the remaining BMPs listed below shall be implemented;
- Stabilizing materials shall be applied to the soil surface to prevent the movement of dust from exposed soil surfaces on construction sites as a result of wind, traffic, and grading activities;
- Roughening and terracing shall be implemented to create unevenness on bare soil through the construction of furrows running across a slope, creation of stair steps, or by utilization of construction equipment to track the soil surface. Surface roughening or terracing reduces erosion potential by decreasing runoff velocities, trapping sediment, and increasing infiltration of water into the soil, and aiding in the establishment of vegetative cover from seed.

d) **Less than Significant with Mitigation.** The majority of the Project location lies within the FEMA 100-year Flood Zone (**Appendix E**). The Project will construct a multi-functional access path adjacent Laguna and Whitehouse Creeks, and include single span concrete bridges where necessary to provide access across Laguna and Whitehouse Creeks. The Project may have short-term impacts associated with potential sediment and/or pollutant runoff during grading and construction. As noted above, the Project is subject to NPDES regulations since these improvements will exceed one acre. The Project is located in the proximity of Laguna Creek and Whitehouse Creek, but is not anticipated to substantially degrade water quality within the creeks, and is not anticipated to substantially degrade water quality of groundwater beneath the site. Compliance with Chapter 16.44 of the Municipal Code would reduce impacts associated with erosion and siltation. Implementation of **WQ-1** through **WQ-4** will ensure the Project will conform with current regulations and in doing so will ensure the Project impacts will be less than significant with mitigation.

WQ-1: The construction contractor shall adhere to the SWRCB Order No. 2013-0001-DWQ as National Pollutant Discharge Elimination System (NPDES) Permit pursuant to Section 402 of the CWA. The City is designated within the NPDES Phase II General Permit. This General Permit applies to the discharge of stormwater from small municipal separate storm sewer systems (MS4s). Under this permit, stormwater discharges must not cause or contribute to an exceedance of water quality standards contained in the California Toxics Rule or the Water Quality Control Plan for the Sacramento and San Joaquin Basin (Basin Plan).

WQ-2: To conform to water quality requirements, the SWPPP must include the following:

- Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants must be a minimum of 100 feet from surface waters. Any necessary equipment washing must occur where the water cannot flow into surface waters. The Project specifications will require the contractor to operate under an approved spill prevention and clean-up plan;
- Construction equipment will not be operated in flowing water;
- Construction work must be conducted according to site-specific construction plans that minimize the potential for sediment input to surface waters;
- Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life shall be prevented from contaminating the soil or entering surface waters;
- Equipment used in and around surface waters must be in good working order and free of dripping or leaking contaminants; and
- Any concrete rubble, asphalt, or other debris from construction must be taken to an approved disposal site.

WQ-3: Prior to the start of construction activities, the Project limits in proximity to jurisdictional waters must be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking to ensure construction will not encroach into jurisdictional waters. The Project biologist will periodically inspect the ESA to ensure sensitive locations remain undisturbed (*same as **BIO-1***).

WQ-4: Contract specifications shall include the following best management practices (BMPs), where applicable, to reduce erosion during construction (*same as **BIO-2***):

- Implementation of the Project shall require approval of a site-specific SWPPP that would implement effective measures to protect water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques;

- Existing vegetation shall be protected in place where feasible to provide an effective form of erosion and sediment control. In locations where this is not feasible, the remaining BMPs listed below shall be implemented;
- Stabilizing materials shall be applied to the soil surface to prevent the movement of dust from exposed soil surfaces on construction sites as a result of wind, traffic, and grading activities;
- Roughening and terracing shall be implemented to create unevenness on bare soil through the construction of furrows running across a slope, creation of stair steps, or by utilization of construction equipment to track the soil surface. Surface roughening or terracing reduces erosion potential by decreasing runoff velocities, trapping sediment, and increasing infiltration of water into the soil, and aiding in the establishment of vegetative cover from seed.

e) **Less than Significant Impact with Mitigation.** The Project must adhere to the MS4 and NPDES permit which includes water quality and watershed protection measures necessary for proper storm water management. The Project would not obstruct implementation of the mS4 or any groundwater management plan. Further, implementation of **WQ-1** through **WQ-4** will ensure the Project will conform with current regulations and therefore ensure the Project impacts will be less than significant with mitigation.

WQ-1: The construction contractor shall adhere to the SWRCB Order No. 2013-0001-DWQ as National Pollutant Discharge Elimination System (NPDES) Permit pursuant to Section 402 of the CWA. The City is designated within the NPDES Phase II General Permit. This General Permit applies to the discharge of stormwater from small municipal separate storm sewer systems (MS4s). Under this permit, stormwater discharges must not cause or contribute to an exceedance of water quality standards contained in the California Toxics Rule or the Water Quality Control Plan for the Sacramento and San Joaquin Basin (Basin Plan).

WQ-2: To conform to water quality requirements, the SWPPP must include the following:

- Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants must be a minimum of 100 feet from surface waters. Any necessary equipment washing must occur where the water cannot flow into surface waters. The Project specifications will require the contractor to operate under an approved spill prevention and clean-up plan;
- Construction equipment will not be operated in flowing water;
- Construction work must be conducted according to site-specific construction plans that minimize the potential for sediment input to surface waters;
- Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life shall be prevented from contaminating the soil or entering surface waters;
- Equipment used in and around surface waters must be in good working order and free of dripping or leaking contaminants; and
- Any concrete rubble, asphalt, or other debris from construction must be taken to an approved disposal site.

WQ-3: Prior to the start of construction activities, the Project limits in proximity to jurisdictional waters must be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking to ensure construction will not encroach into jurisdictional waters. The Project biologist will periodically inspect the ESA to ensure sensitive locations remain undisturbed (*same as **BIO-1***).

WQ-4: Contract specifications shall include the following best management practices (BMPs), where applicable, to reduce erosion during construction (*same as **BIO-2***):

- Implementation of the Project shall require approval of a site-specific SWPPP that would implement effective measures to protect water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques;
- Existing vegetation shall be protected in place where feasible to provide an effective form of erosion and sediment control. In locations where this is not feasible, the remaining BMPs listed below shall be implemented;
- Stabilizing materials shall be applied to the soil surface to prevent the movement of dust from exposed soil surfaces on construction sites as a result of wind, traffic, and grading activities;
- Roughening and terracing shall be implemented to create unevenness on bare soil through the construction of furrows running across a slope, creation of stair steps, or by utilization of construction equipment to track the soil surface. Surface roughening or terracing reduces erosion potential by decreasing runoff velocities, trapping sediment, and increasing infiltration of water into the soil, and aiding in the establishment of vegetative cover from seed.

XI. LAND USE AND PLANNING

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

AFFECTED ENVIRONMENT

The Project is located in an open space area, surrounded by developed residential, public services, and commercial land uses. The City's General Plan lists the areas surrounding the Project site as Low Density Residential (LDR), Regional Commercial (RC), Public Services (PS), Resource Management & Conservation (RMC), and Rural Residential (RR), with State Route (SR) 99 located just west of the Project area. The majority of the Project would occur in area listed in the General Plan Land Use Element as Public Services (PS), although a small segment of the multi-functional access path would cross through area designated as RMC.

Public Services (PS)
Public Services uses include lands owned by the City of Elk Grove, the Elk Grove Unified School District or other public-school districts, the Cosumnes Community Services District (with the exception of public parks), and other public agencies. This designation also includes other institutional uses such as higher education, private schools, cemeteries, or post offices. This designation does not include hospitals or churches, which are accommodated in the Employment Center and Residential designations, respectively (Elk Grove 2019).

Resource Management and Conservation (RMC)
Resource Management and Conservation uses consist of both public and private lands, including but not limited to lands used for habitat mitigation, wetland protection, and floodways. Lands designated as Resource Management and Conservation are oriented toward passive open space uses, rather than active uses, which are include in the Parks and Open Space designation (Elk Grove 2019).

The Project area does not contain any land that was set aside or established as conservation or mitigation lands. The portion of the Project which crosses RMC consists of a drainage/floodway and is zoned for open space.

DISCUSSION

a) **No Impact.** The Project would not divide an established community. The ~~proposed~~ Project consists of construction of a multi-functional access path from the existing Laguna Creek Trail, located south of the intersection of Beckington Drive and White Peacock Way, to a connection at East Stockton Boulevard approximately 750 feet south of the intersection of East Stockton Boulevard and Cantwell Drive. No barriers to movement through the local communities would be installed. The ~~proposed~~ Project would improve the off-street multiuse trail connectivity in the area. Therefore, no impact would occur.

b) No Impact. The ~~proposed~~ Project consists of construction of a multi-functional access path from the existing Laguna Creek Trail multi-use corridor. The ~~proposed~~ Project is consistent with the City's General Plan (as amended) and the City's Bicycle, Pedestrian, and Trails Master Plan. While the Project would cross through land designated as RMC, this designation was applied due to the two detention basins and not as habitat mitigation. The multi-functional access path would not alter the functionality of the detention basins. Further, the Project would not convert any areas established as a result of avoiding or mitigating an environmental effect. Therefore, the ~~proposed~~ Project would not conflict or cause a significant impact due to a conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project. No impact would occur.

XII. MINERAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

AFFECTED ENVIRONMENT

The Surface Mining and Reclamation Act of 1975 requires the State Geologist to inventory and classify selected mineral resources in California. The ~~proposed~~ Project is located in an area of the City of Elk Grove, which is covered by the MRZ-3 classification for mineral resources. The MRZ-3 classification covers areas "containing aggregate deposits, the significance of which cannot be evaluated from available data" (California Department of Conservation 1999). No mineral extraction activities occur in the vicinity of the Project site. None of the roadways in the vicinity of the ~~proposed~~ Project serve as routes for traffic involved in mineral extraction activities.

DISCUSSION

a) No Impact. The ~~proposed~~ Project would not result in the use or extraction of any mineral or energy resources and would not restrict access to known mineral resource areas. Furthermore, the ~~proposed~~ Project would not result in the loss of availability of a known mineral resource. Therefore, no impact would occur.

b) No Impact. Refer to discussion a), above. The ~~proposed~~ Project would have no impact on mineral resources. No impact would occur.

XIII. NOISE

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

AFFECTED ENVIRONMENT

Noise-sensitive land uses generally include those uses where exposure to noise would result in adverse effects, as well as uses where quiet is an essential element of their intended purpose. The City's General Plan does not define noise-sensitive land uses, but typical noise-sensitive land uses include receptors such as residences, parks, schools, and/or hospitals. Noise-sensitive land uses near the Project site include Camden Park, residences along White Peacock Way, Baisley Court, and Kingmont Way, Creekside Christian Church, WellQuest of Elk Grove, and East Lawn Elk Grove Memorial Park. Motor vehicles traveling on these roadways, surrounding neighborhood roads, and SR-99 are the primary contributor to the existing noise environment at the Project site.

REGULATORY SETTING

Since operation of the ~~proposed~~ Project does not include any motor vehicle transportation uses, this section focuses on the regulatory setting as it relates to construction-related noise.

City of Elk Grove General Plan

The City's General Plan Update (2021) contains goals and policies designed to protect the community from the harmful and annoying effects of exposure to excessive noise. General Plan goals applicable to the ~~proposed~~ Project include, **Goal N-1**: Sensitive Uses are Protected From Noise Intrusion, **Goal N-2**: Community Noise Exposure is Minimized. These goals are supported by policies described in the City's General Plan.

The City's General Plan also includes maximum allowable noise standards for projects affected by transportation noise sources. Noise compatibility of ~~proposed~~ Project is determined in comparison to these standards. As depicted in **Table 8**, the City's maximum acceptable exterior noise standard for residential land uses affected by transportation noise sources is 60 dBA Leq.

City of Elk Grove Noise Ordinance (Municipal Code Chapter 6.32)

Elk Grove Municipal Code Title 6, Chapter 6.32, Noise Control, regulates noise generated by non-transportation sources. Section 6.32.100 (Exemptions) of the Code restricts construction activities to occur between the hours of 7:00 a.m. and 7:00 p.m., within close proximity to residential uses. Noise associated with construction not located in close proximity to residential uses may occur between the hours of 6:00 a.m. and 8:00 p.m.

Table 8. Maximum Allowable Noise Exposure, Transportation Noise Sources

Land Use	Outdoor Activity Areas[a,b]	Interior Spaces	
	L_{DN}/dB	L_{DN}/dB	L_{DN}/dB
Residential	60[d,g]	45	
Residential subject to noise from railroad tracks, aircraft overflights, or similar noise sources which produce clearly identifiable, discrete noise events (the passing of a single train, as opposed to relatively steady noise sources as roadways)	60[d,g]	40[f]	
Transient Lodging	60[d,g]	45	
Hospitals, Nursing Homes	60[d,g]	45	
Theatres, Auditoriums, Music Halls			35
Churches, Meeting Halls	60[d,g]		40
Office Buildings			45
Schools, Libraries, Museums			45

a. Where the location of outdoor activity areas is unknown, the exterior noise level standards shall be applied to the property line of the receiving land use. Where it is not practical to mitigate exterior noise levels at patios or balconies of apartment complexes, a common area such as a pool or recreation area may be designated as the outdoor activity area.
b. Transportation projects subject to Caltrans review or approval shall comply with the Federal Highway Administration noise standards for evaluation and abatement of noise impacts.
c. As determined for a typical worst-case hour during periods of use.
d. Where it is not possible to reduce noise in outdoor activity areas to 60dB,Ldn or less using a practical application of the best available noise reduction measures, an exterior noise level of up to 65 dB,Ldn may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.
e. In the case of hotel/motel facilities or other transient lodging, outdoor activity areas such as pool areas may not be included in the project design. In these cases, only the interior noise level criterion will apply.
f. The intent of this noise standard is to provide increased protection against sleep disturbance for residences located near railroad tracks.
g. In cases where the existing ambient noise level exceeds 60 dbA, the maximum allowable project-related permanent increase in ambient noise levels shall be 3 dBA /Ldn.

However, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in progress be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after 7:00 p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner.

DISCUSSION

The Project components include a maintenance and recreational facility that would not produce substantial noise during operation and would not contribute substantially to the ambient noise environment. Implementation of the ~~proposed~~ Project would not result in the construction or operation of any transportation uses or stationary noise sources; therefore, this section focuses on construction-related noise impacts.

a) Less than Significant with Mitigation. Construction noise typically occurs intermittently and varies depending upon the nature or phase (e.g., demolition/land clearing, grading and excavation) of construction. Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Typical noise levels for individual pieces of construction equipment are summarized in **Table 9**.

Table 9. Typical Construction Equipment Noise Levels

Type of Equipment	Typical Noise Level (dBA) 50 feet from Source
Dozer	85
Excavator	88
Concrete Mixer	85
Compactor	82
Loader	85
Backhoe	80
Grader	85
Crane	83
Generator	81
Truck	88

During construction, noise from equipment would cause short-term localized increases in ambient noise levels. The actual noise levels at any particular location would depend on a variety of factors, including the type of construction equipment or activity involved, distance to the source of the noise, obstacles to noise that exist between the receptor and the source, time of day, and similar factors. Construction of the ~~proposed~~ Project would result in a temporary, periodic increase in ambient noise levels that would exceed the City noise standards. However, this increase would be temporary, intermittent, and limited to daytime hours. Further, mitigation is available that would require limits to the hours of construction, appropriate locations for staging areas, noise-reduction intake and exhaust mufflers and engine shrouds for construction equipment, and minimization of construction equipment idling, which would reduce impacts to less than significant. Implementation of mitigation measures **NOI-1** through **NOI-4** will reduce impacts to less than significant by limiting the hours of noise-generating construction operations to daytime hours, locating construction equipment and staging areas away from sensitive land uses, requiring construction equipment to be equipped with noise-reduction intake and exhaust mufflers and engineer shrouds, and prohibiting the idling of motorized construction equipment when not in use.

NOI-1: Noise-generating construction operations shall be limited to between the hours of 7 a.m. and 7 p.m. within close proximity to residential uses. Noise associated with construction not located in close proximity to residential uses may occur between the hours of 6:00 a.m. and 8:00 p.m. in accordance with the Elk Grove General Plan Noise Ordinance.

NOI-2: Construction equipment and equipment staging areas shall be located at the farthest distance possible from adjacent sensitive land uses.

NOI-3: Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturer recommendations. Equipment engine shrouds shall be closed during equipment operation.

NOI-4: When not in use, motorized construction equipment shall not be left idling.

b) **Less than Significant with Mitigation.** The ~~proposed~~ Project would construct a multi-functional access path in an open space area with bridges to provide access across Laguna and Whitehouse Creeks. No groundborne vibration or noise levels would be generated during use of the multi-functional access path. Groundborne vibration and noise levels would be generated during construction of the Project. Construction would be temporary and would occur between the hours of 6 a.m. and 8 p.m. on weekdays in accordance with Chapter 6.32, Noise Control, of the Elk Grove Municipal Code, or between the hours of 7 a.m. and 7 p.m. on weekdays where adjacent to residential uses in accordance with Elk Grove General Plan Policy N-1-7 and as specified in **NOI-1**. Pile driving or other activities commonly associated with vibration may occur. Impacts would be less than significant with incorporation of mitigation measures **NOI-1** through **NOI-4** by limiting the hours of noise-generating construction operations to daytime hours, locating construction equipment and staging areas away from sensitive land uses, requiring construction equipment to be equipped with noise-reduction intake and exhaust mufflers and engineer shrouds, and prohibiting the idling of motorized construction equipment when not in use. Therefore, Project impacts would be less than significant with mitigation.

NOI-1: Noise-generating construction operations shall be limited to between the hours of 7 a.m. and 7 p.m. within close proximity to residential uses. Noise associated with construction not located in close proximity to residential uses may occur between the hours of 6:00 a.m. and 8:00 p.m. in accordance with the Elk Grove General Plan Noise Ordinance.

NOI-2: Construction equipment and equipment staging areas shall be located at the farthest distance possible from adjacent sensitive land uses.

NOI-3: Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturer recommendations. Equipment engine shrouds shall be closed during equipment operation.

NOI-4: When not in use, motorized construction equipment shall not be left idling.

c) **No Impact.** The ~~proposed~~ Project is not located in the vicinity of a private airstrip, airport land use plan, or within two miles of a public airport or public use airport. Therefore, no impact would occur.

XIV. POPULATION AND HOUSING

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

AFFECTED ENVIRONMENT

In the ten years prior to the incorporation of the City in July 2000, the population increased by 70.5 percent, in part due to annexations. The City began to rapidly develop as a result of an increase in jobs to the Sacramento County region and the availability of land outside the downtown Sacramento area. According to the California Department of Finance, the population of the City was approximately 170,011 in 2017, which is a 1.2 percent increase from the previous year (DOF 2018). Several housing developments are planned in the City. North of the Project site, an area of land is planned for multi-family residential use. The ~~proposed~~ Project does not involve the addition of new housing or the displacement of existing housing.

DISCUSSION

a) No Impact. The ~~proposed~~ Project consists of construction of a multi-functional access path and bridges to provide access across Laguna and Whitehouse Creeks. The ~~proposed~~ Project does not include the construction of new homes or businesses, nor does it include extension or construction of new roadways which could potentially induce growth. Therefore, the Project would have no potential to induce substantial population growth in the area, either directly or indirectly. No impact would occur.

b) No Impact. The Project will not displace any number of existing housing or necessitate the construction of replacement housing. No impact would occur.

XV. PUBLIC SERVICES

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
a) Fire protection?	☐	☐	☒	☐
b) Police protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☐	☒
d) Parks?	☐	☐	☐	☒
e) Other public facilities?	☐	☐	☒	☐

AFFECTED ENVIRONMENT

The City receives general public safety and law enforcement services from the City of Elk Grove Police Department. The Elk Grove Community Services District Fire Department provides fire protection and emergency services to the City. The Elk Grove Unified School District provides educational services to the area in the Project vicinity. Additionally, the City provides maintenance of public facilities, including those intended for bicycle and pedestrian use.

DISCUSSION

a-b) Fire Protection, Police Protection:

Less than Significant Impact. The ~~proposed~~ Project consists of constructing a new multi-functional access path with bridges to provide access across Laguna and Whitehouse Creeks. Police and fire protection (including ambulance services) are currently provided by the Elk Grove Police Department and the Consumnes Community Service District Fire Department (CCSDFD).

The Elk Grove Police Department has 146 sworn officers and 108 civilian employees who provide law enforcement and policing services to the City (Elk Grove Police Department 2021). In addition, the City's General Plan, Safety Element (City of Elk Grove 2021a) contains policies relating to police protection. Under Policy SAF-1-1 the City shall "regularly monitor and review the level of police staffing provided in Elk Grove, and ensure that sufficient staffing and resources are available to serve local needs" (City of Elk Grove 2021). This policy ensures adequate police protection in the City as it expands and develops. The BPTMP also identifies thoughtful design where "[t]he design of trails shall provide a degree of privacy to surrounding residences, but still allow for informal monitoring of the trail" (GHD, Inc. 2021). Police patrols of the new multi-functional access path and bridges will occur when construction is complete; however, the trail is approximately 1 mile long in length and can be included in existing patrols occurring throughout other portions of the Laguna Creek Trail and adjacent residences.

There are currently eight stations operated by CCSDFD. CCSDFD fire station 76 is within one-half mile of the Project, located at 8545 Sheldon Road, while two additional stations, Stations 71 and 74, are located within two miles of the Project.

The General Plan also has safety policies to ensure efficient movement of police and firefighting equipment and safe evacuation of residents, and the City cooperates with the CCSDFD to reduce fire hazards, assist in fire suppression, and promote fire safety. The BPTMP requires that all bicycle and pedestrian trails be at minimum 10 feet of paved trail, which is consistent with Cosumnes Community Service District fire standards, so that the trails can double as an emergency vehicle access (GHD, Inc. 2021). The current ~~proposed~~ access path and bridges are 10 feet in width and can support the weight of emergency vehicles.

Development of the ~~proposed~~ Project would not result in increased population and residential structures; however, fire and police services could be required for users of the new multi-functional access path. As the ~~proposed~~ Project is located within portions of the City already serviced by police and fire services, as the path has been designed to accommodate emergency vehicles, and as the new path has a short distance of one mile in length, it is anticipated that the City would be able to provide police and fire protection services for the ~~proposed~~ Project will continuing to maintain acceptable service ratios, response times, and performance objectives. For these reasons, a less than significant impact to police and fire protection is anticipated.

c-d) Schools, Parks:

No Impact. The ~~proposed~~ Project does not include new development for habitation, nor does it include development of new businesses. Therefore, the ~~proposed~~ Project would not induce population growth and furthermore, does not include any components that would result in any schools or parks. Establishment of additional facilities to maintain acceptable service ratios for the public would not be necessary. Therefore, no impact would occur.

e) Other Public Facilities

Less than Significant Impact. The City's Department of Public Works, Operation and Maintenance Division is responsible for multi-use trails on public property (City of Elk Grove 2022c). The BPTMP identifies long-term trail maintenance responsibilities. All of the trails within the City of Elk Grove are maintained in partnership by the Cosumnes Community Services District (CCSD) and the City of Elk Grove. The City of Elk Grove maintains trail pavement while the CCSD is responsible for all other trail features through a Master Agreement. Maintenance includes weed abatement, pruning vegetation for sight distance, sign installation and removal, damage from weather conditions, and general trail clean up (GHD, Inc. 2021). While development of the ~~Proposed~~ Project would introduce new responsibilities for the City and CCSD, the ~~proposed~~ Project was previously planned for and is included in the BPTMP. Impacts on other public facilities are therefore considered less than significant.

XVI. RECREATION

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

AFFECTED ENVIRONMENT

The City's General Plan (2021) contains goals and policies established to conserve existing national, State, and regional recreation areas, as well as encouragement for the development of additional recreational opportunities to meet the City's needs. In addition, the City of Elk Grove Bicycle, Pedestrian, and Trails Master Plan includes goals that encourage an exceptional public parks network throughout the City and public use of all available pedestrian and bicycle trails. The ~~proposed~~ Project involves the extension of a recreational trail (Laguna Creek Trail) from Camden Park to East Stockton Boulevard via the existing trail connection near the intersection of Beckington Drive and White Peacock Way. Camden Park is 21.4 acres and contains a section of Laguna Creek Trail which is used for activities such as horseback riding, bicycling, jogging, and walking.

DISCUSSION

a) **Less than Significant Impact.** The ~~proposed~~ Project consists of construction of a multi-functional access path with bridges to provide access across Laguna and Whitehouse Creeks. The path will allow the City to maintain both creeks and will also fill in an existing gap within the Laguna Creek Trail system. The multi-functional path will provide a continuous connection between Camden Park to East Stockton Boulevard, potentially increasing the accessibility of the surrounding community parks to nearby residents. However, residents already have access to parks in the area under existing conditions; thus substantial physical deterioration of local parks and other recreational facilities is not expected to result from the ~~proposed~~ Project. Although the ~~proposed~~ Project involves the extension of a multiuse trail for recreational purposes, it does not include a residential or commercial component that would increase human presence in the area which could result in increased use of existing parks or recreational facilities. Therefore, impacts are considered less than significant.

b) **Less than Significant Impact.** The ~~proposed~~ Project is consistent with the existing land use of the Project site and surrounding areas. Furthermore, the ~~proposed~~ Project is consistent with the City's General Plan and the City's Bicycle, Pedestrian, and Trails Master Plan, which identify the need for an off-street multiuse trail system providing connections throughout the City. The ~~proposed~~ improvements will not impact the usability of the trail during construction, as there is currently no bicycle or pedestrian trail at this location, due to the termination of the trail near the intersection of Beckington Drive and White Peacock Way. The ~~proposed~~ Project does not anticipate any permanent or adverse physical impacts; therefore, impacts are considered less than significant.

XVII. TRANSPORTATION

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☒	☐

REGULATORY SETTING

On September 27, 2013, Governor Brown signed Senate Bill 743 (SB 743) and started a process intended to fundamentally change transportation impact analysis as part of CEQA compliance. These changes include the elimination of auto delay, level of service, and other similar measures of vehicle capacity or traffic congestion as a basis for determining significant impacts. The Governor's Office of Planning and Research (OPR) has issued final guidance entitled, Proposed Updates to the CEQA Guidelines (November 2017), covering the specific changes to the CEQA guidelines. The final guidance recommends elimination of auto delay and level of service for CEQA purposes and the use of Vehicle Miles Traveled, or VMT, as the preferred CEQA transportation metric. The City of Elk Grove General Plan Update (2021) incorporates the change in transportation impact analysis, resulting from SB 743, and includes VMT policy that establishes significance thresholds for CEQA analysis of future projects.

2019 CEQA Update: Section 15064.3(b)(2) - Determining the Significance of Transportation Impacts

Pursuant to CEQA section 15064.3(b)(2), transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, a lead agency may tier from that analysis as provided in Section 15152.

City of Elk Grove Traffic Analysis Guidelines for Transportation Projects

The Traffic Analysis Guidelines (TAG) within the City's General Plan Update establishes protocol for transportation analysis studies and reports based on the current state-of-the-practice in transportation planning and engineering and includes guidance for General Plan consistency analysis (using roadway and intersection performance) and CEQA analysis (using VMT). As stated on page 9 of the TAG, transportation projects that are not likely to lead to substantial or measurable increase in VMT and are exempt from analysis include, but are not limited to, the following:

- Public transit (e.g., establishing new routes or services or modifying existing routes or services).
- Addition of active transportation improvements (e.g., new trail segments), like on-street bike lanes and shoulder improvements to improve conditions for cyclists.
- Addition of roadway capacity on local and collector roadways only provided for the purpose of improving conditions for pedestrians, cyclists, and public transit (as applicable).
- Resurfacing, rehabilitation, maintenance, preventative maintenance, replacement, and repair projects that do not add additional roadway capacity.
- Installation, removal, or modification of turn lanes.
- Installation, removal, or modification of traffic control devices, including traffic signals, wayfinding, and traffic signal priority systems.
- Traffic signal optimization and or coordination to improve vehicle, bicycle, or pedestrian flow.
- Installation of roundabouts.
- Installation or modification of traffic calming devices. • Lane reductions (i.e., road diets").
- Addition of auxiliary lanes that do not add additional roadway capacity.
- Removal of off-street parking and addition, adoption, or modification of parking devices and management strategies.
- Safety improvements, including roadway shoulder enhancements and auxiliary lanes, and grade separations for rail, transit, pedestrian, and bicycle facilities.
- Sidewalk infill, removing barriers to accessibility, and American with Disabilities Act (ADA) Improvements.
- Installation or modification of access control restrictions.
- Complete Streets Projects that do not add additional roadway capacity.
- Other improvements to the circulation system that do not add additional roadway capacity.

Per the City's TAG, a VMT analysis is not required as the Project consists of activities considered exempt from VMT analysis.

AFFECTED ENVIRONMENT

The Project consists of construction of a ~~maintenance access road which would be developed into a~~ multi-use corridor trail as part of part of the final construction phase of the Project~~Phase II~~, with minor improvements to provide trail amenities. The multi-functional path would close a gap in the Laguna Creek Trail system. As the Laguna Creek Trail system is located off-road, it provides a safe pedestrian and cyclist travel corridor. By completing a sizeable gap in the system, the Project would provide the community with greater access through the City.

DISCUSSION

a) No Impact. The Project would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system. The ~~proposed~~ Project does not involve construction of a new public roadway or significant physical alteration of an existing roadway. The ~~proposed~~ Project includes the construction of a maintenance access road and includes the extension of an existing multiuse trail and minor improvements and striping of the maintenance road, which would contribute to the continuity of the off-street multiuse trail system within the City and improve bicycle access along East Stockton Boulevard, Kingmont Way, and White Peacock Way.

The Project is included in, and is consistent with, the City's General Plan and Bicycle, Pedestrian, and Trails Master Plan. Therefore, no impact would occur.

b) No Impact. The ~~proposed~~ Project does not involve construction of a new public roadway or significant physical alteration of an existing roadway and would have no impact on an established vehicle miles traveled threshold. The Project consists solely of activities which are considered exempt from VMT analysis, per the City's TAG. Therefore, the Project would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), and no impact would occur.

c) No Impact. The ~~proposed~~ Project would be designed in accordance with the standards and guidelines set forth in the City of Elk Grove Bicycle, Pedestrian, and Trails Master Plan. Specifically, trail design and maintenance shall provide for trail safety and security. The trail would not create an increased hazard due to geometric design or incompatible uses, would allow for trail user defensible space, and would provide adequate site distance for trail users. No impact would occur.

d) Less than Significant. Minor on-street construction activities for the ~~proposed~~ Project may occur, and off-street construction activities for the maintenance access road are not expected to interfere with emergency access on local roadways. The maintenance access road is designed for consistency with the standards and guidelines provided in the City of Elk Grove Bicycle, Pedestrian, and Trails Master Plan (i.e., minimum tread width is 10 feet of paved trail). Upon completion of construction, the access road and bridges would be wide enough for emergency vehicles and access to emergency vehicles would be available in the event of an emergency. Therefore, the ~~proposed~~ Project would not result in inadequate emergency access and would have a less than significant impact.

XVIII. TRIBAL CULTURAL RESOURCES

XVII. TRIBAL CULTURAL RESOURCES: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

REGULATORY SETTING

Effective July 1, 2015, CEQA was revised to include early consultation with California Native American tribes and consideration of tribal cultural resources (TCRs). These changes were enacted through Assembly Bill 52 (AB 52). By including TCRs early in the CEQA process, AB 52 intends to ensure that local and Tribal governments, public agencies, and Project proponents would have information available, early in the Project planning process, to identify and address potential adverse impacts to TCRs. CEQA now establishes that a “project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment” (PRC § 21084.2).

To help determine whether a project may have such an adverse effect, the PRC requires a lead agency to consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project. The consultation must take place prior to the determination of whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project (PRC § 21080.3.1). Consultation must consist of the lead agency providing formal notification, in writing, to the tribes that have requested notification or proposed projects within their traditionally and culturally affiliated area. AB 52 stipulates that the Native American Heritage Commission (NAHC) shall assist the lead agency in identifying the California Native American tribes that are traditionally and culturally affiliated within the project area. If the tribe wishes to engage in consultation on the project, the tribe must respond to the lead agency within 30 days of receipt of the formal notification. Once the lead agency receives the tribe’s request to consult, the lead agency must then begin the consultation process within 30 days. If a lead agency determines that a project may cause a substantial adverse change to TCRs, the lead agency must consider measures to mitigate that impact. Consultation concludes when either: 1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a TCR, or 2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC § 21080.3.2). Under existing law, environmental documents must not include information about the locations of an archaeological site or sacred lands or any other information that is exempt from public disclosure pursuant to the Public Records act. TCRs are also exempt from disclosure. The term “tribal cultural resource” refers to either of the following:

Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

- Included or determined to be eligible for inclusion in the California Register of Historical Resources
- Included in a local register of historical resources as defined in subdivision (k) of California Public Resources Code (PRC) Section 5020.1
- A resource determined by a California lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of the PRC Section 5024.1.

AFFECTED ENVIRONMENT

APE

The Area of Potential Effects (APE) is located approximately 0.25 mile south of Sheldon Road and 0.46 mile north of Bond Road in the City of Elk Grove, Sacramento County, California. The western terminus of the Project is designated at the East Stockton Boulevard while the eastern terminus is designated at the is within Camden Park. More specifically, the Project is located within Sections 25 and 26 of Township 7 North, Range 5 East of the Mount Diablo Meridian as depicted on the Florin and Bruceville, California United States Geological Survey (USGS) 7.5-minute quadrangle maps (see **Figure 9** in Section V).

The Project includes all Project related ground disturbing activities necessary to create the multi-functional corridor, including construction access. The APE also includes additional areas for geotechnical study vehicle access. Ground-disturbing activities include cut and fill, grading, recontouring, vegetation removal, and construction access. The horizontal APE encompasses the open grassland and portions of Laguna and Whitehouse Creeks between East Stockton Boulevard and Camden Lake. As the trail will be elevated above existing ground surface elevations, the vertical APE is shallow, extending approximately one foot to account for grading and leveling; however, the vertical APE extends as much as 10 feet below existing grade for construction of the bridge abutments.

Records Search

In order to determine whether any previously recorded cultural resources were located within the APE, a records search (SAC-18-068) of the APE and a 1-mile buffer from its boundaries was obtained from the North Central Information Center (NCIC) at California State University, Sacramento, which is the repository for historic and archaeological records in Sacramento County. The NCIC identified five previous cultural resources investigations conducted that covered approximately 15 percent of the APE; none of which resulted in the discovery of cultural resources in the APE. The NCIC records search identified two previously recorded cultural resources within the APE, a historic-era complex and an irrigation complex. No prehistoric resources have been previously recorded within or immediately adjacent the APE. Please see Section V for discussion on the historic-era resources.

Native American Consultation

As part of the identification efforts to determine whether the APE has TCRs, the City contacted the Native American Heritage Commission (NAHC) in in March 2018 and requested a search of the NAHC Sacred Lands File (SLF). The NAHC responded in April 2018 that no resources were identified during the SLF search.

The City then contacted California Native American Tribal Governments to determine if the Project would have any impacts on TCRs. Project notification consultation letters were sent in April 2018 to the following Native American Tribal Governments, which have previously requested to be contacted regarding City projects:

- Ione Band of Miwok Indians
- United Auburn Indian Community of the Auburn Rancheria
- Wilton Rancheria

In response to the Project notification consultation letters, a representative of the United Auburn Indian Community of the Auburn Rancheria requested a visit to the Project area. Following a site visit in June 2018, the United Auburn Indian Community of the Auburn Rancheria responded via email that they had no further concerns about the Project and wished to close consultation; however, the United Auburn Indian Community of the Auburn Rancheria requested to be contacted should any Native American cultural resources be found during Project-related activities.

No other response or requests have been received from the United Auburn Indian Community of the Auburn Rancheria, Ione Band of Miwok Indians, or the Wilton Rancheria.

Cultural Survey
On April 4, 2019, Dokken Engineering archaeologist Brian S. Marks, Ph.D. conducted a ground surface inventory of the APE. Fifteen-meter wide pedestrian transects were used to inspect the ground surface. All cut banks, rodent burrow holes, and other exposed sub-surface areas were visually inspected for the presence of archaeological resources, soil color changes, and/or staining that could indicate past human activity or buried deposits. In areas of dense vegetation, boot scrapes were used approximately every 20 meters to expose the soil surface and check for the presence of cultural materials. The vertical APE was also visually inspected, where possible, for the presence of buried cultural resources. The visible cut banks along both Whitehouse and Laguna Creeks and rodent burrows throughout the APE provided an excellent opportunity to visually inspect the vertical soil profiles and recently exposed subsurface soils.

No prehistoric-era cultural resources were identified during the pedestrian inspection in the APE. The survey noted extensive ground disturbances throughout the APE, which occurred as result of previous field discing, grading, channelization of Whitehouse Creek, construction of the detention basins north of the Creekside Christian Church, and development of a parking lot, landscaping, and irrigation system between Creekside Christian Church and Whitehouse Creek. Given the extensive disturbances, any surface indications of TCRs would likely have been destroyed.

Buried Cultural Resource Potential
While no TCRs were identified during the field survey of the APE, the City analyzed the potential for the APE to contain buried TCRs. The APE is situated in the Central Great Valley geomorphic province with an underlying quaternary alluvium geologic composition (Jennings et al. 1977) dating to approximately 11,500 years before present (B.P.), when human beings were present. These types of deposits have potential to contain buried surfaces, as seasonal flooding would have deposited new soil layers atop the previous ground surface. Laguna Creek would have attracted human activities, such as hunting, food processing, or habitation, during both the prehistoric and historic eras; however, as the area was frequently flooded, it was not always suitable for habitation.

While the combined factors of the proximity to water and underlying alluvial deposits indicate that there is potential for buried TCRs, the extensive ground disturbances noted throughout the APE indicate that the potential is low, especially within the shallow vertical APE. These disturbances would have either destroyed any cultural resources within the vertical and horizontal APE or would have uncovered TCRs, should any have been present. For these reasons, buried TCRs are not anticipated to be present within the APE.

DISCUSSION

a) Less than Significant with Mitigation. No TCR was identified during identification and consultation efforts conducted for the Project. As such, the Project is not anticipated to cause a substantial adverse change in the significance of a TCR listed or eligible for listing in the California Register of Historical Resources, or in a local register of historic resources as defined in Public Resources Code section 5020.1(k). No impacts are anticipated for the Project related to TCRs; however, with any Project requiring ground disturbance, there is always the possibility that unmarked TCRs may be unearthed during construction. This impact would be considered potentially significant. Implementation of Mitigation Measure **CR-1** and **CR-2** (listed in Section V) would reduce this impact to a less-than significant level.

CR-1: If previously unidentified cultural materials are unearthed during construction, work shall be halted in that area until a qualified archaeologist can assess the significance of the find and develop a plan for documentation and removal of resources if necessary. Additional archaeological survey will be needed if Project limits are extended beyond the present survey limits.

CR-2: Section 5097.94 of the Public Resources Code and Section 7050.5 of the California Health and Safety Code protect Native American burials, skeletal remains and grave goods, regardless of age and provide method and means for the appropriate handling of such remains. If human remains are encountered, work shall halt in that vicinity and the county coroner should be notified immediately. At the same time, an archaeologist shall be contacted to evaluate the situation. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within twenty-four hours of such identification. CEQA details steps to be taken if human burials are of Native American origin.

b) Less than Significant with Mitigation. The Project is not anticipated to cause a substantial adverse change to a TCR pursuant to criteria set forth in subdivision (c) of Public Resources Cod Section 5024.1. Given the extensive ground disturbances which have occurred throughout the APE, the potential for a buried TCR to be present is considered low. While no impacts to TCRs are anticipated for the Project, with any Project requiring ground disturbance, there is always the possibility that unmarked cultural resources may be unearthed during construction. This impact would be considered potentially significant. Implementation of Mitigation Measure **CR-1** and **CR-2** (listed in Section V) would reduce this impact to a less-than significant level.

CR-1: If previously unidentified cultural materials are unearthed during construction, work shall be halted in that area until a qualified archaeologist can assess the significance of the find and develop a plan for documentation and removal of resources if necessary. Additional archaeological survey will be needed if Project limits are extended beyond the present survey limits.

CR-2: Section 5097.94 of the Public Resources Code and Section 7050.5 of the California Health and Safety Code protect Native American burials, skeletal remains and grave goods, regardless of age and provide method and means for the appropriate handling of such remains. If human remains are encountered, work shall halt in that vicinity and the county coroner should be notified immediately. At the same time, an archaeologist shall be contacted to evaluate the situation. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within twenty-four hours of such identification. CEQA details steps to be taken if human burials are of Native American origin.

XIX. UTILITIES AND SERVICE SYSTEMS

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

Water

Water services within City limits are provided by the Sacramento County Water Agency and the Elk Grove Water District. Private service areas also exist within the City. The Project area receives water services from the Elk Grove Water District.

Wastewater Service

Urbanized portions of Sacramento County, such as the City of Elk Grove, receive wastewater service from the Sacramento Regional County Sanitation District (SRCSD), which is a publicly owned wastewater agency. Over one million people in the major Sacramento Metropolitan Area receive wastewater services from the SRCSD. Three agencies—the City of Folsom, the City of Sacramento, and Sacramento County Sanitation District 1—contribute to the wastewater services provided by SRCSD. The Project site falls within the Sacramento County Sanitation District 1 service area; however, the Project will not require wastewater service.

Solid Waste Service

Solid waste services in the City of Elk Grove are provided by the Sacramento County Public Works Agency, Waste Management and Recycling. The Central Valley Waste Services provide solid waste services to single-family residential customers. Solid waste within the City limits is typically delivered to Sacramento County's Kiefer Landfill, the primary municipal solid waste disposal facility in Sacramento County, located at the intersection of Grant Line Road and Kiefer Boulevard. Waste is accepted from the general public, businesses and private waste haulers.
At present, the Kiefer Landfill, which comprises approximately 1,084 acres, is the only landfill within the jurisdiction of Sacramento County that is permitted to accept solid waste for disposal. The maximum tons per day allowed at the Kiefer Road Landfill is 10,815 tons per day, with an

average intake of 6,362 tons per day. The landfill has a total capacity of 117 million cubic yards (58 million tons). The Kiefer Landfill is classified as a major landfill, which is defined as a facility that receives more than 50,000 tons of solid waste per year. The Kiefer Landfill has been operating below permitted capacity and is projected to have capacity for about the next 20 to 30 years (City of Elk Grove 2003b).

Electricity, Telephone, and Natural Gas Services

Electrical services within the City limits of Elk Grove are provided by the Sacramento Municipal Utilities District. Telephone services in Elk Grove are provided by Frontier Communications (formerly Citizens Communications) and AT&T. Natural gas services to customers within the City limits of Elk Grove are provided by Pacific Gas and Electric Company.

DISCUSSION

a) **Less than Significant.** The ~~proposed~~ Project consists of construction of a multi-functional access path with bridges to provide access across Laguna and Whitehouse Creeks. The Project would not increase population in the Project vicinity, and there would be no additional wastewater flows as a result of Project development; or result in expanded wastewater treatment or stormwater drainage treatment.

   The Project would add a net impervious surface of approximately 1 acre to the area due to the addition of pavement for the construction of the maintenance access road, but would direct runoff appropriately, and final design may incorporate drainage features including culverts through the trail prism and bio-swales for transport of additional waters. The impervious surface generated by the Project is the minimum area practicable, incorporating the natural drainage courses in the Project area, and preserving the maximum numbers of existing native trees and shrubs possible. The ~~proposed~~ Project is not anticipated to generate excessive runoff, and the ~~proposed~~ Project would not include construction of new stormwater drainage facilities, or expansion of existing facilities. Therefore, impacts would be less than significant.

b) **No Impact.** The Project would not result in the need for new or expanded water supplies. There may be a temporary need for water during construction to control dust; however, it is not anticipated to result in the need for water supply beyond what is currently available, and no increase in demand for long-term water supply would be generated by the Project. No impact would occur.

c) **No Impact.** The Project would not include the construction of any wastewater-generating uses. The Project would not increase population in the Project vicinity, and there would be no additional wastewater flows as a result of the ~~proposed~~ Project; therefore, the Project would not result in the need for new or expanded wastewater facilities. No impact would occur.

d) **Less Than Significant.** The Project would not generate solid waste during operation. Solid waste would be generated during construction; however, the amount will not exceed landfill capacities. Solid waste generated by the ~~proposed~~ Project would be transported to Kiefer Landfill which has been operating below permitted capacity and is projected to have capacity for about the next 20 to 30 years (City of Elk Grove 2003b). Therefore, impacts would be considered less than significant.

e) **No Impact.** The Project would comply with all applicable federal, state, and local statutes and regulations related to solid waste including the California Integrated Waste Management Act of 1989 (AB 939) and the California Solid Waste Re-Use and Recycling Access Act of 1991 (§42900-42911 of the Public Resources Code). No impact would occur.

XX. WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:~~Would the Project~~:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

Based on maps produced by the California Department of Forestry and Fire Protection (CalFire), the Project area is not within or near a State Responsibility Area (SRA). An SRA is the area of the state where the State of California is financially responsible for the prevention and suppression of wildfires. SRAs do not include lands within city boundaries or in federal ownership. Additionally, the Project area is not within or near an area designated for moderate, high, or very high fire severity. There are no areas designated as such within any portion of the City (CalFire, 2007). Similarly, fire severity maps produced by CalFire within the Sacramento County Local Hazard Mitigation Plan Update for Local Responsibility Areas (LRA), of which the City of Elk Grove is a part, have not designated any "very high fire severity lands" within any portion of the City or adjoining areas (Sacramento County~~CalFire~~, 2021~~08~~). However, the Project area is designated as a "Moderate" Fire Hazard Severity Zone. Last, based on map data developed by the US Forest Service, the Project area is not located within or adjacent to any wildfire potential zones.

DISCUSSION

a) **No Impact.** The Project has been designed in accordance with City road and improvement standards, thereby ensuring that adequate emergency access could be provided to the proposed uses. No impact would occur.

b) **No Impact.** The Project is located in a topographically flat, urban area of the City, adjacent to residential and commercial/mixed-use land uses and is not within or adjacent to a SRA. ~~The proposed Project corridor is not designated as a wildland~~. Emergency access would be maintained throughout construction and, in the event of a fire, the Cosumnes Fire Department provides emergency fire services to the Project Area. No impact would occur.

c) **Less than Significant.** The ~~proposed~~ Project consists of construction of a maintenance access road (paved with no striping), and bridges where necessary, from the existing Laguna Creek Trail multi-use corridor, located south of the intersection of Beckington Drive and White Peacock Way, to a connection at East Stockton Boulevard approximately 750 feet south of the intersection of East Stockton Boulevard and Cantwell Drive. The new maintenance access road would require maintenance throughout the life of the access road. However, maintenance activities would not exacerbate fire risk and the ~~proposed~~ Project corridor is not located in or adjacent to ~~an~~ ~~area with minimal wildfire risk~~SRA. Impacts would be less than significant.

d) **No impact.** The Project is located in a topographically flat, urban area of the City, adjacent to residential and commercial/mixed-use land uses and is not within or adjacent to a SRA. ~~. The proposed Project corridor is not designated as a wildland~~ ~~and~~ ~~vegetation~~ Vegetation removal would be minimal and temporary. The Project would have no impact.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

DISCUSSION

a) Less Than Significant with Mitigation Incorporated. Implementation of the Project would have the potential to degrade the quality of the existing environment. Potential impacts have been identified related to Air Quality (Section III), Biological Resources (Section IV), Cultural Resources (Section V), Geology and Soils (Section VII), Hazards and Hazardous Waste (Section IX), Hydrology and Water Quality (Section X), Noise (Section XIII), and Tribal Cultural Resources (Section XVIII).

Mitigation measures **BIO-1** through **BIO-28** would reduce impacts to biological resources to a less than significant level. The potential for discovery or disturbance of historical, archaeological, human remains, TCRs, or paleontological resources is not anticipated. However, implementation of mitigation measure **CR-1** and **CR-2** and **PAL-1** and **PAL-2** would reduce impacts to a less than significant level by ensuring that appropriate protocol is followed (see Chapter 4 Summary of Mitigation Measures).

Project impacts to Air Quality, Hazards and Hazardous Waste, Hydrology and Water Quality, and Noise would primarily consist of temporary impacts related to construction of the Project. These impacts would be reduced to a less than significant level through implementation and incorporation of **AQ-1**, **HAZ-1**, **WQ-1** through **WQ-4,** and **NOI-1** through **NOI-4**, respectively (see Chapter 4 Summary of Mitigation Measures).

See Chapter 4 "Summary of Mitigation Measures" for a summary of all mitigation measures, timing of implementation, and responsible party. Implementation of mitigation measures would reduce the level of all Project-related impacts to less than significant levels. Therefore, impacts are considered less than significant with mitigation incorporated.

b) Less than Significant Impact. CEQA Guidelines Section 15064(h) states that a lead agency shall consider whether the cumulative impact of a project is significant and whether the effects of the project are cumulatively considerable. The assessment of the significance of the cumulative effects of a project must therefore be conducted in connection with the effects of past projects, or other current projects, and probable future projects.

The ~~proposed~~ Project consists of construction of a multi-functional access path with bridges to provide access across Laguna and Whitehouse Creeks. The Project would likely be constructed in phases, with construction of the ~~Phase I consisting of the construction of a~~ maintenance access path occurring first while ~~and Phase II consisting of~~ the addition of trail amenities would occur as part of the last construction phase.

The ~~proposed~~ Project is consistent with the City of Elk Grove General Plan and the City of Elk Grove Bicycle, Pedestrian, and Trails Master Plan. The Project is listed in the City's Bicycle, Pedestrian, and Trails Master Plan, which expresses the City's desire to have a comprehensive off-street multi=use trail system that provides connectivity throughout the City and the wider Sacramento region. The ~~proposed~~ Project would complete a portion of the off-street Laguna Creek Trail system in the City of Elk Grove and improve bicycle and pedestrian access in the City. The Project would make no significant contribution to cumulatively adverse impacts associated with existing or proposed development projects in the City as the Project would not directly generate vehicle trips. Construction of the ~~proposed~~ Project along with other construction in the City and Sacramento County would contribute to cumulative environmental impacts. However, the ~~proposed~~ Project's contribution would be minimal considering the highly developed land uses in the area. Therefore, impacts of the ~~proposed~~ Project related to cumulatively considerable impacts in the City of Elk Grove and Sacramento County are considered less than significant.

c) Less than Significant with Mitigation Incorporated. The Project would not cause significant or unavoidable adverse effects to human beings, either directly or indirectly with mitigation incorporated. See Chapter 4 "Summary of Mitigation Measures" for a summary of all mitigation measures, timing of implementation, and responsible party. All potentially significant impacts have been reduced to a less than significant level by mitigation measures related to individual resource-specific impacts:

- Air Quality (AQ-1),
- Biological Resources (BIO-1 through BIO-28),
- Cultural Resources (CR-1 and CR-2),
- Geology and Soils (PAL-1 and PAL-2),
- Hazards and Hazardous Materials (HAZ-1)
- Hydrology and Water Quality (WQ-1 through WQ-4),
- Noise (NOI-1 through NOI-4), and
- Tribal Cultural Resources (CR-1 and CR-2).

Therefore, impacts are considered less than significant with mitigation incorporated (see Chapter 4 Summary of Mitigation Measures).

4.0 SUMMARY OF MITIGATION MEASURES

4.1 Summary of Mitigation Measures

Air Quality (Section III)

AQ-1 Implement SMAQMD Basic Construction Emission Control Practices:

- Water all exposed surfaces two times daily. Exposed surfaces include (but are not limited to) soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least 2 feet of freeboard space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.
- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speeds on unpaved roads to 15 miles per hour.
- All roadway, driveway, sidewalk, and parking lot paving should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.

Timing/Implementation: *During Project development*

Enforcement/Monitoring: *City of Elk Grove Public Works*

Biological Resources (Section IV)

BIO-1 Prior to the start of construction activities, the Project limits in proximity to jurisdictional waters shall be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking to ensure construction will not further encroach into waters. The Project biologist will periodically inspect the ESA to ensure sensitive locations remain undisturbed (same as **WQ-3**).

Timing/Implementation: *During Project excavation and construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-2 Contract specifications will include the following BMPs, where applicable, to reduce erosion during construction (same as **WQ-4**):

- Implementation of the Project shall require approval of a site-specific Storm Water Pollution Prevention Plan (SWPPP) that would implement effective measures to protect water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques;
- Existing vegetation shall be protected in place where feasible to provide an effective form of erosion and sediment control. In locations where this is not feasible, the remaining BMPs listed below shall be implemented;
- Stabilizing materials shall be applied to the soil surface to prevent the movement of dust from exposed soil surfaces on construction sites as a result of wind, traffic, and grading activities;
- Roughening and terracing shall be implemented to create unevenness on bare soil through the construction of furrows running across a slope, creation of stair steps, or by utilization of construction equipment to track the soil surface. Surface roughening or terracing reduces erosion potential by decreasing runoff velocities, trapping sediment, and increasing infiltration of water into the soil, and aiding in the establishment of vegetative cover from seed.
- Soil exposure shall be minimized through the use of temporary BMPs, groundcover, and stabilization measures;
- The contractor shall conduct periodic maintenance of erosion- and sediment-control measures.

Timing/Implementation: *During Project excavation and construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-3 To conform to water quality requirements, the SWPPP must include the following:

- Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants shall be a minimum of 100 feet from surface waters. Any necessary equipment washing shall occur where the water cannot flow into surface waters. The Project specifications shall require the contractor to operate under an approved spill prevention and clean-up plan;
- Construction equipment shall not be operated in flowing water;
- Construction work shall be conducted according to site-specific construction plans that minimize the potential for sediment input to surface waters;

- Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life shall be prevented from contaminating the soil or entering surface waters;

- Equipment used in and around surface waters shall be in good working order and free of dripping or leaking contaminants; and,

- Any surplus concrete rubble, asphalt, or other debris from construction shall be taken to an approved disposal site.

Timing/Implementation: During Project excavation and construction

Enforcement/Monitoring: City of Elk Grove Public Works

BIO-4 All temporarily disturbed areas shall be restored onsite to pre-Project conditions or better prior to Project completion. Where possible, vegetation shall be trimmed rather than fully removed with the guidance of the Project biologist.

Timing/Implementation: During Project excavation and construction

Enforcement/Monitoring: City of Elk Grove Public Works

BIO-5 A focused rare plant survey shall be conducted during the blooming season of each special status plant species with potential to occur within the Project area prior to the start of construction (Boggs Lake hedge-hyssop, dwarf downingia, legenere, Sanford's arrowhead, and wooly rose-mallow). If rare plants are discovered during these surveys, additional ESA fencing or relocation shall be implemented to avoid and minimize impact to the species. The City will consult with CDFW may be required to determine appropriate buffer distances and/or relocation of species populations.

Timing/Implementation: During Project excavation and construction

Enforcement/Monitoring: City of Elk Grove Public Works

BIO-6 Should work occur within the Swainson's hawk nesting season (February 1st-August 31st), the Project biologist must conduct a pre-construction nesting survey consistent with survey methods recommended by the Swainson's Hawk Technical Advisory Committee within ¼ mile of the Project and two weeks prior to construction clearing and grubbing activities. Should a nesting Swainson's hawk pair be found within ¼ mile of the Project, the Project biologist will consult with the wildlife agencies for appropriate buffers. The contractor shall not work within the 1/2 mile nesting area until the appropriate buffer is established and is prohibited from conducting work that could disturb the birds (as determined by the Project biologist and in consultation with wildlife agencies) in the buffer area until the Project biologist determines the young have fledged.

Timing/Implementation: *During Project excavation and construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-7 Valley grasslands in the Project area are considered Swainson's hawk foraging habitat and are protected under Chapter 16.130 of the City Municipal Code, Swainson's Hawk Impact Mitigation Fees. The City shall mitigate for the permanent loss of Swainson's hawk foraging habitat at a 1:1 ratio. Mitigation can be accomplished through participation in the City of Elk Grove Swainson's Hawk Impact Mitigation Fees Ordinance, other method acceptable to the California Department of Fish and Wildlife, or other method acceptable to the Elk Grove City Council pursuant to Section 16.130.110.

Timing/Implementation: *During Project excavation and construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-8 Vegetation removal or earthwork shall be minimized during the nesting season (February 1st – August 31st). If vegetation removal is required during the nesting season (February 1st – August 31st), a pre-construction nesting bird survey must be conducted within 7 days prior to vegetation removal. Within 2 weeks of the nesting bird survey, all vegetation cleared by the biologist shall be removed by the contractor.

A minimum 100-foot no-disturbance buffer shall be established around any active nest of migratory birds and a minimum 300-foot no-disturbance buffer shall be established around any nesting raptor species. The contractor must immediately stop work in the buffer area until the appropriate buffer is established and is prohibited from conducting work that could disturb the birds (as determined by the Project biologist and in consultation with wildlife agencies) in the buffer area until a qualified biologist determines the young have fledged. A reduced buffer can be established if determined appropriate by the Project biologist and approved by CDFW.

Timing/Implementation: *During Project excavation and construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-9 The Project biologist must conduct preconstruction surveys consistent with the 2012 CDFW Staff Report on Burrowing Owl Mitigation. If no burrowing owls are detected, no further action for burrowing owl shall be required. If burrowing owls are observed during the preconstruction surveys, consultation with CDFW shall be required to determine appropriate no-work buffer distances, avoidance strategies and/or mitigation for impacted nest sites.

Timing/Implementation: *During Project excavation and construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-10 Protective silt fencing shall be installed between the adjacent vernal pool habitat and the construction are limits to prevent accidental disturbance during construction and to protect water quality within the aquatic habitat during construction.

Timing/Implementation: *During Project excavation and construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-11 A Worker Environmental Awareness Program (WEAP) shall be implemented to educate construction workers about the presence of sensitive habitat near the Project area and to instruct them on proper avoidance measures.

Timing/Implementation: *During Project excavation and construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-12 The ~~proposed~~ Project shall mitigate for potential impacts to vernal pool crustaceans by conducting USFWS protocol-level surveys, or assuming presence of the species in the Project area. Protocol-level surveys for the vernal pool fairy shrimp and vernal pool tadpole shrimp shall occur in suitable habitats occurring in the ~~proposed~~ Project area and within 250 feet of adjacent suitable habitat. If vernal pool fairy shrimp or vernal pool tadpole shrimp are not detected during the protocol-level surveys and if the USFWS concurs that neither species is present, no further mitigation is required. If either of the species is detected during protocol-level surveys or the presence of the species is assumed in lieu of conducting surveys, and ~~proposed~~ activities will result in direct or indirect impacts to potential habitat, the following measures shall be implemented:

1. Formal consultation with the USFWS shall be initiated under Section 7 of the Endangered Species Act. No direct or indirect impacts to suitable habitat for these species shall occur until Incidental Take authorization has been obtained from the USFWS.

2. For every acre of habitat directly or indirectly affected, at least two vernal pool preservation credits shall be dedicated in a USFWS-approved ecosystem preservation bank (2:1 ratio). With USFWS approval, appropriate payment into an in-lieu fee fund or on-site preservation may be used to satisfy this measure.

3. For every acre of habitat directly affected, at least one vernal pool creation credit shall be dedicated in a USFWS-approved habitat mitigation bank (1:1 ratio). With USFWS approval, appropriate payment into an in-lieu fee fund, on-site creation, or off-site creation may be used to satisfy this measure.

Timing/Implementation: *Prior to Project construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-13 To avoid impacts to western pond turtles, the Project biologist will conduct a pre-construction survey of the Laguna Creek, Whitehouse Creek, and adjacent banks and upland habitats within the Project area. Surveys shall be conducted no more than 24 hours prior to onset of construction. If a turtle is located within the construction area, a qualified biologist will capture the turtle and relocate it to an appropriate habitat a safe distance from the construction site.

Timing/Implementation: *Prior to Project construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-14 If water pumps are used to dewater the Project Area, pump intakes shall be screened and equipped with an energy dissipater to protect aquatic species. The energy dissipater should be large enough to reduce approach velocity to 0.33 feet per second or less and be enclosed with ½ inch metal screen. The surface area of the energy dissipater shall be determined by dividing the maximum diverted flow, by the allowable approach velocity (example: 1.0 ft^3 per second/ 0.33 feet per second = 3.0 ft^2 surface area).

Timing/Implementation: *During Project construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-15 If suitable habitat for western spadefoot toad is to be removed from October through April, a qualified biologist shall conduct a preconstruction survey for this species within 50 feet of suitable habitat that is proposed to be impacted. The survey shall be conducted a maximum of one week prior to removal of suitable breeding habitat.

If no spadefoot toads are detected during the survey, no further measures are required. If this species is observed on-site, the biologist shall move it to suitable habitat in a safe location outside of the construction zone.

If western spadefoot toads are detected during the preconstruction survey, a qualified biologist shall be on-site during initiation of construction activities within 50 feet of suitable habitats and shall provide WEAP training to all personnel working within 50 feet of suitable habitats.

In the event that a western spadefoot toad is observed within an active construction zone, the contractor shall temporarily halt construction activities until a biologist has moved the toad to a safe location, within similar habitat, outside of the construction zone.

Timing/Implementation: *Prior to and during Project construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-16 To allow western spadefoot and other subterranean wildlife enough time to escape initial clearing and grubbing activities, equipment used during initial clearing and grubbing in annual grassland or wetland habitats shall be operated at speeds no greater than 3 miles per hour.

Timing/Implementation: *During Project construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-17 Construction activity within giant garter snake habitat should be conducted between May 1st and October 1st. This is the active period for giant garter snakes and direct mortality is lessened, because snakes are expected to actively move and avoid danger. Between October 2 and April 30 contact the U.S. Fish and Wildlife Service Sacramento Office to determine if additional measures are necessary to minimize and avoid take.

Timing/Implementation: *During Project construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-18 Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided giant garter snake habitat within or adjacent to the Project area as Environmentally Sensitive Areas. The area should be avoided by all construction personnel.

Timing/Implementation: *During Project construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-19: Tightly woven erosion control matting (mesh size less than 0.25 inch) or similar material shall be used for erosion control and other purposes at the Project site to ensure that snakes are not trapped or become entangled by the erosion control material. The edge of the material shall be buried in the ground to prevent snakes from crawling underneath the material. The use of plastic, monofilament, jute, or similar erosion control netting with mesh sizes larger than 0.25 inch that could entangle snakes will be prohibited.

BIO-20 Construction personnel must receive worker environmental awareness training. Awareness training shall be given by the Project biologist(s) who have experience in giant garter snake natural history. This training instructs workers to recognize giant garter snake and their habitat(s).

Timing/Implementation: *Prior to construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-21 24-hours prior to construction activities, the Project area should be surveyed for giant garter snakes. Survey of the Project area should be repeated if a lapse in construction activity of two weeks or greater has occurred. If a snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. Report any sightings and any incidental take to the U.S. Fish and Wildlife Service Sacramento Office immediately by telephone at (916) 414-6600.

Timing/Implementation: *Prior to construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-22 Any dewatered habitat must remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling of the dewatered habitat.

Timing/Implementation: *During Project construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-23 After completion of construction activities, remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-Project conditions. Restoration work includes, as applicable activities such as replanting species removed from banks or replanting emergent vegetation in the active channel.

Timing/Implementation: *After Project construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-24 The ~~proposed~~ Project shall mitigate for potential impacts to giant garter snake by one of the following compensatory mitigation strategies:

1. The City shall provide all necessary compensatory mitigation requirements pursuant Section 7 consultation with the USFWS through federal nexus with USACE during Clean Water Act Section 404 permitting process.

2. The City will compensate for the loss of giant garter snake habitat with purchase of required mitigation credits at a USFWS and CDFW approved mitigation bank to offset permanent and temporary impacts. Temporary impacts shall be compensated at 1:1 ratio, and permanent impacts to upland and aquatic GGS habitat shall be compensated at 3:1. Acreages may be adjusted during final design, which would change the total acres of mitigation, but the ratios must stay the same.

Timing/Implementation: *Prior to construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-25: Prior to arrival at the Project site and prior to leaving the Project site, construction equipment that may contain invasive plants and/or seeds shall be cleaned to reduce the spreading of noxious weeds.

Timing/Implementation: *During construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-26: All hydro seed and plant mixes shall consist of a biologist approved seed mix.

Timing/Implementation: *During construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-27: The contractor shall not use herbicides to control invasive, exotic plants or apply rodenticides during construction.

Timing/Implementation: *During construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

BIO-28: The contractor shall dispose of all food-related trash in closed containers and must remove it from the Project area each day during construction. Construction personnel shall not feed or attract wildlife to the Project area.

Timing/Implementation: *During construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

Cultural Resources (Section V) and Tribal Cultural Resources (Section XVIII)

CR-1 If previously unidentified cultural materials are unearthed during construction, work shall be halted in that area until a qualified archaeologist can assess the significance of the find and develop a plan for documentation and removal of resources if necessary. Additional archaeological survey will be needed if Project limits are extended beyond the present survey limits.

Timing/Implementation: *During Project construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

CR-2 Section 5097.94 of the Public Resources Code and Section 7050.5 of the California Health and Safety Code protect Native American burials, skeletal remains and grave goods, regardless of age and provide method and means for the appropriate handling of such remains. If human remains are encountered, work shall halt in that vicinity and the county coroner should be notified immediately. At the same time, an archaeologist shall be contacted to evaluate the situation. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within twenty-four hours of such identification. CEQA details steps to be taken if human burials are of Native American origin.

Timing/Implementation: *During Project construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

Geology and Soils (Section VII)

PAL-1 Prior to the start of construction, all construction personnel shall receive a paleontological sensitivity training, detailing the types of paleontological resources that may be encountered and procedures to follow if a find should occur.

Timing/Implementation: *Prior to construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

PAL-2 If paleontological resources (i.e., fossils) are discovered during ground-disturbing activities, the implementing agency will immediately be notified, and will ensure that their contractors shall stop work in that area and within 100 feet of the find until a qualified paleontologist can assess the significance of the find and develop appropriate treatment measures. Treatment measures will be made in consultation with the implementing agency and would be included in the PMTP.

Timing/Implementation: *During Project construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

Hazards and Hazardous Waste (Section IX)

HAZ-1 The contractor shall prepare a Spill Prevention, Control, and Countermeasure Program (SPCCP) prior to the commencement of construction activities. The SPCCP shall include information on the nature of all hazardous materials that shall be used on-site. The SPCCP shall also include information regarding proper handling of hazardous materials, and clean-up procedures in the event of an accidental release. The phone number of the agency overseeing hazardous materials and toxic clean-up shall be provided in the SPCCP.

Timing/Implementation: *Prior to construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

Hydrology and Water Quality (Section X)

WQ-1 The construction contractor shall adhere to the SWRCB Order No. 2013-0001-DWQ as National Pollutant Discharge Elimination System (NPDES) Permit pursuant to Section 402 of the CWA. The City is designated within the NPDES Phase II General Permit. This General Permit applies to the discharge of stormwater from small municipal separate storm sewer systems (MS4s). Under this permit, stormwater discharges must not cause or contribute to an exceedance of water quality standards contained in the California Toxics Rule or the Water Quality Control Plan for the Sacramento and San Joaquin Basin (Basin Plan).

Timing/Implementation: *During Project construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

WQ-2 To conform to water quality requirements, the SWPPP must include the following:

- Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants must be a minimum of 100 feet from surface waters. Any necessary equipment washing must occur where the water cannot flow into surface waters.

The Project specifications will require the contractor to operate under an approved spill prevention and clean-up plan;

- Construction equipment will not be operated in flowing water;
- Construction work must be conducted according to site-specific construction plans that minimize the potential for sediment input to surface waters;
- Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life shall be prevented from contaminating the soil or entering surface waters;
- Equipment used in and around surface waters must be in good working order and free of dripping or leaking contaminants; and
- Any concrete rubble, asphalt, or other debris from construction must be taken to an approved disposal site.

Timing/Implementation: *During Project construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

WQ-3 Prior to the start of construction activities, the Project limits in proximity to jurisdictional waters must be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking to ensure construction will not encroach into jurisdictional waters. The Project biologist will periodically inspect the ESA to ensure sensitive locations remain undisturbed. (same as **BIO-1**)

Timing/Implementation: *Prior to construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

WQ-4 Contract specifications shall include the following best management practices (BMPs), where applicable, to reduce erosion during construction (same as **BIO-2**):

- Implementation of the Project shall require approval of a site-specific SWPPP that would implement effective measures to protect water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques;
- Existing vegetation shall be protected in place where feasible to provide an effective form of erosion and sediment control. In locations where this is not feasible, the remaining BMPs listed below shall be implemented;
- Stabilizing materials shall be applied to the soil surface to prevent the movement of dust from exposed soil surfaces on construction sites as a result of wind, traffic, and grading activities;

- Roughening and terracing shall be implemented to create unevenness on bare soil through the construction of furrows running across a slope, creation of stair steps, or by utilization of construction equipment to track the soil surface. Surface roughening or terracing reduces erosion potential by decreasing runoff velocities, trapping sediment, and increasing infiltration of water into the soil, and aiding in the establishment of vegetative cover from seed.

Timing/Implementation: *During Project construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

Noise (Section XIII)

NOI-1 Noise-generating construction operations shall be limited to between the hours of 7 a.m. and 7 p.m. within close proximity to residential uses. Noise associated with construction not located in close proximity to residential uses may occur between the hours of 6:00 a.m. and 8:00 p.m. in accordance with the Elk Grove General Plan Noise Ordinance.

Timing/Implementation: *During Project construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

NOI-2 Construction equipment and equipment staging areas shall be located at the farthest distance possible from adjacent sensitive land uses.

Timing/Implementation: *During Project construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

NOI-3 Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturer recommendations. Equipment engine shrouds shall be closed during equipment operation.

Timing/Implementation: *During Project construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

NOI-4 When not in use, motorized construction equipment shall not be left idling.

Timing/Implementation: *During Project construction*

Enforcement/Monitoring: *City of Elk Grove Public Works*

5.0 COMMENTS AND CONSULTATION

5.1 Comments and Consultation

This chapter summarizes the City's efforts to identify, address and resolve Project-related issues through early and continuing consultation.

Scoping Process

Previous environmental studies, including the Laguna Creek Trail North Camden Spur Project (2015), East Lawn Cemetery Expansion Project (2016), and the Landing Assisted Living Facility Project (2017) provided a basis for scoping potential environmental constraints within the Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project area.

Consultation with Public Agencies

Consultation with the following agencies was initiated for the Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project:

U.S. Fish and Wildlife Service (USFWS)
California Department of Fish and Wildlife (CDFW)
Native American Heritage Commission (NAHC)
U.S. Army Corps of Engineers (USACE)
Regional Water Quality Control Board (RWQCB)

Public Participation

All comments received during circulation and public comment period for the Draft IS/MND ~~will~~ were ~~be~~ incorporated into the Final IS/MND as **Appendix E**. Any additions or corrections to the IS/MND subsequent to public comments have been addressed within the document.

6.0 LIST OF PREPARERS

6.1 List of Preparers

City of Elk Grove Public Works Department

Christina Castro, PE, Capital Program Division Manager
Armando Lee, PE, Senior Civil Engineer, Project Manager

Dokken Engineering

Amy Dunay, RPA, Senior Environmental Planner / Archaeologist
Pamela Dalcin-Walling, PE, QSD/P, Senior Civil Engineer

7.0 REFERENCES

Barr, C. B. 1991. The Distribution, Habitat, and Status of the Valley Elderberry Longhorn Beetle: *Desmocerus californicus dimorphus*. Sacramento, CA: U.S. Fish and Wildlife Service.

California Air Resources Board 2019. Ambient Air Quality Standards, http://www.arb.ca.gov/research/aaqs/aaqs2.pdf

California Air Resources Board 2019b. Area Designations Maps/State and National, http://www.arb.ca.gov/desig/adm/adm.htm

California Air Resources Board 2015. iADAM: Air Quality Data Statistics, http://www.arb.ca.gov/adam/index.html

California Department of Conservation, Division of Mines and Geology 2000. A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos.

California Department of Transportation 2011. California Scenic Highway Mapping System. < http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/> Updated 9/07/2011

California Department of Toxic Substances 2016. Soil Management Agreement for Aerially Deposited Lead-Contaminated Soils 2016. State of California, Environmental Protection Agency, Department of Toxic Substances.

California Department of Water Resources, 2015, Geotracker Database, http://geotracker.waterboards.ca.gov.

Cal-IPC 2018. Online California Invasive Plant Inventory Database Available at: <http://www.cal-ipc.org/paf/> (accessed 09/29/18).

CDFG 1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California. Available at: <https://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html> (accessed 09/22/16).

CDFW. 2018a. CWHR Life History Accounts and Range Maps. Available at: <http://www.dfg.ca.gov/biogeodata/cwhr/cawildlife.aspx> (accessed 5/21/2018).

CDFW. 2018b. The California Wildlife Habitat Relationship Classification Scheme. Available at: <http://www.dfg.ca.gov/biogeodata/cwhr/wildlife_habitats.asp#Tree> (accessed 5/21/2018).

CDFW. 2018c. "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. *"Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*. CDFW, March 2018.

CDFW. 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843 > (accessed 4/10/2018).

CDFW. 1994. Staff Report regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California. Available at: <https://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html> (accessed 4/10/2018).

California Department of Transportation (Caltrans). 2018. Caltrans Water Quality Planning Tool. Available at: <http://svctenvims.dot.ca.gov/wqpt/wqpt.aspx> (accessed 5/21/2018).

California Invasive Plant Council. 2018. The Cal-IPC Inventory. Available at: <https://www.cal-ipc.org/plants/inventory/> (accessed 4/5//2018).

CNDDB. 2019. California Natural Diversity Database, Rarefind 5. Available at:<http://www.dfg.ca.gov/biogeodata/cnddb/> (accessed 10/15/2019).

California Open Lands. 2018. Conserved Lands. Available at: <http://www.californiaopenlands.org/conserved-habitats.html> (accessed 5/21/2018).

City of Elk Grove. 2021. City of Elk Grove General Plan. Available at: < http://www.elkgrovecity.org/city_hall/departments_divisions/city_manager/strategic_planning_and_innovation/general_plan/documents> (accessed 09/13/2021).

City of Elk Grove. 2019. Swainson's Hawk Program. Available at: <http://www.elkgrovecity.org/city_hall/departments_divisions/planning/resources_and_policies/swainsons_hawk_program> (accessed 10/15/2019).

CNPS, Rare Plant Program.2019. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Available at: <http://www.rareplants.cnps.org> (accessed 10/15/2019).

Elk Grove Police Department. 2021. About Us. Available online: http://www.elkgrovepd.org/about_us. Accessed December 1, 2021.

England, A. S., M. J. Bechard, and C. S. Houston. 1997. Swainson's Hawk (Buteo swainsoni). In A. Poole and F. Gill (eds.), The Birds of North America, No. 265. Philadelphia, PA: The Academy of Natural Sciences and Washington, DC: The American Ornithologists' Union.

Environmental Protection Agency. 2018a. Outdoor Air Quality Data, Monitor Values Report, https://www.epa.gov/outdoor-air-quality-data/monitor-values-report.

Environmental Protection Agency. 2018b. The Greenbook Nonattainment Areas for Criteria Pollutants, http://www.epa.gov/airquality/greenbook/index.html

GHD, Inc. 2021. *City of Elk Grove Bicycle, Pedestrian, and Trails Master Plan*. Available online: https://p1cdn4static.civiclive.com/UserFiles/Servers/Server_109585/File/Departments/SPI/BPTMP/May%202021%20Final%20BPTMP%20Plan.pdf

Jepson Eflora. 2018. Jepson eFlora: Geographic subdivisions. Available at: <http://ucjeps.berkeley.edu/eflora/geography.html> (accessed 4/15/2018).

NCRS. 2018. Custom Soil Resource Report for Sacramento County, California – WDR018-LCWC. Available at: <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx> (accessed 5/21/2018).

NMFS. 2019. California Species List Tools. Available at: http://www.westcoast.fisheries.noaa.gov/maps_data/california_species_list_tools.htm (accessed 10/15/2019).

Sacramento Council of Governments. 2014a. 2014 Regional Transportation Plan/Sustainable Communities Strategy.

Sacramento Council of Governments. 2014b. 2015 Federal Transportation Improvement Program.

Sacramento Council of Governments. 2014c. 2014 Air Quality Conformity Analysis.

Sacramento County. 2021. Sacramento County Local Hazard Mitigation Plan Update.

Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentVersionID=19850> (accessed 4/10/2018).

University of California, Davis. 2016. Tricolored Blackbird Portal. Information Center for the Environment, University of California, Davis. Available at: <http://tricolor.ice.ucdavis.edu/> (accessed 4/10/2018).

U.S. Climate Data. 2018. U.S. Climate Data-Sacramento, California. Available at: <http://www.usclimatedata.com/climate/sacramento/california/united-states/usca1197> (accessed 5/21/2018).

USACE- Environmental Laboratory. 1987. Wetlands Delineation Manual Wetlands Research Program Technical Report Y-87-1, Final Report, January 1987, Waterways Experiment Station, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199. Available at: <http://el.erdc.usace.army.mil/elpubs/pdf/wlman87.pdf>.

USACE. 2007. Regulatory Branch (SPK-2004-00629). Approved Jurisdictional Delineation for the East Lawn Expansion Project.

USACE. 2008a. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual. U.S. Army Corps of Engineers – Engineering Research and Development Center.

USACE. 2008b. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). U.S Army Corps of Engineers – Engineering Research and Development Center. Wetlands Regulatory Assistance Program.

USACE. 2016. Arid West 2016 Regional Wetland Plant List. Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. *The National Wetland Plant List*: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X. Available at: <http://wetland-plants.usace. army.mil/> (accessed 4/23/2018).

USDA. 2007. Ecological Subregions: Sections and Subsections for the conterminous United States. Available at: <https://www.fs.usda.gov/treesearch/pubs/48672> (accessed 4/16/2018).

USFWS. 2019. Official Species List: Sacramento Fish and Wildlife Office. Available at: <http://www.fws.gov/sacramento/> (accessed 10/15/2019).

USFWS. 2017. Recovery Plan for the Giant Garter Snake (Thamnophis gigas). U.S Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. Vii + 71 pp.

USFWS. 2005. Endangered and Threatened Wildlife and Plants; Final Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants in California and Southern Oregon; Evaluation of Economic Exclusions From August 2003 Final Designation. Sacramento Fish and Wildlife Office. Available at <http://www.gpo.gov/fdsys/pkg/FR-2005-08-11/pdf/05-15569.pdf#page=1> (accessed 4/30/2018).

U.S. Fish and Wildlife Service and California Department of Fish and Game. Tricolored Blackbird status update and management guidelines. 97-099. Sacramento, CA.: E.C. Beedy and W.J. Hamilton III. 1997.

Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. CDFW, Sacramento, California.

THIS PAGE LEFT INTENTIONALLY BLANK

Appendix A:
Road Construction Emissions Model

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> 2435 Laguna Creek Multifunctional Corridor

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.94	7.47	11.15	10.46	0.46	10.00	2.45	0.37	2.08	0.03	2,807.12	0.43	0.21	2,879.20
Grading/Excavation	2.93	23.02	36.56	11.48	1.48	10.00	3.29	1.21	2.08	0.09	8,975.55	1.50	0.64	9,205.16
Drainage/Utilities/Sub-Grade	2.80	25.37	27.35	11.22	1.22	10.00	3.19	1.11	2.08	0.06	5,433.91	1.01	0.11	5,492.52
Paving	0.98	11.83	9.17	0.49	0.49	0.00	0.42	0.42	0.00	0.02	2,319.40	0.48	0.08	2,356.61
Maximum (pounds/day)	2.93	25.37	36.56	11.48	1.48	10.00	3.29	1.21	2.08	0.09	8,975.55	1.50	0.64	9,205.16
Total (tons/construction project)	0.16	1.36	1.76	0.64	0.08	0.56	0.18	0.06	0.12	0.00	403.97	0.07	0.02	412.23

Notes:

Project Start Year -> 2022

Project Length (months) -> 6

Total Project Area (acres) -> 13

Maximum Area Disturbed/Day (acres) -> 1

Water Truck Used? -> Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	174	0	270	0	280	40
Grading/Excavation	614	0	930	0	760	40
Drainage/Utilities/Sub-Grade	12	15	30	30	680	40
Paving	0	25	0	60	520	40

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> 2435 Laguna Creek Multifunctional Corridor

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.05	0.07	0.07	0.00	0.07	0.02	0.00	0.01	0.00	18.53	0.00	0.00	17.24
Grading/Excavation	0.08	0.61	0.97	0.30	0.04	0.26	0.09	0.03	0.05	0.00	236.95	0.04	0.02	220.46
Drainage/Utilities/Sub-Grade	0.06	0.59	0.63	0.26	0.03	0.23	0.07	0.03	0.05	0.00	125.52	0.02	0.00	115.10
Paving	0.01	0.12	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.96	0.00	0.00	21.17
Maximum (tons/phase)	0.08	0.61	0.97	0.30	0.04	0.26	0.09	0.03	0.05	0.00	236.95	0.04	0.02	220.46
Total (tons/construction project)	0.16	1.36	1.76	0.64	0.08	0.56	0.18	0.06	0.12	0.00	403.97	0.07	0.02	373.97

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Appendix B:
Biological Resources Report

Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project (WDR018)

Biological Resources Report

Prepared by:

DOKKEN ENGINEERING
110 Blue Ravine Road, Suite 200
Folsom, CA 95630

October 2022

Summary

The City of Elk Grove (City) proposes to construct the Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project (Project), located in Elk Grove, Sacramento County, California. The proposed Project will involve construction of a 2.2-mile long multi-functional corridor along the banks adjacent to segments of Laguna and Whitehouse Creeks, located between East Stockton Boulevard and Camden Park.

This Biological Resources Report is a review and evaluation of the potential impacts to threatened, endangered, proposed listed or special status species and protected habitat resources as a result of the proposed Project. Field surveys were conducted within the Biological Study Area (BSA), which was defined as the proposed Project impact area and a 250-foot buffer from the existing City floodway easement, where feasible, to accommodate the design and facilitate construction.

Multiple surface waters were found within the BSA during field surveys. These surface waters fall into four broad categories including: creek, emergent marsh, seasonal wetland, and vernal pool. All surface waters were evaluated to determine their jurisdictional status. Laguna Creek and Whitehouse Creek as well as adjacent seasonal wetland and vernal pool features were determined to be jurisdictional waters of the United States (WoUS) and waters of the State (WoS). The Project is anticipated to result in permanent and temporary impacts to jurisdictional WoUS and WoS.

Literature research, habitat assessments, and biological surveys were conducted for the proposed Project area. After habitat assessments and biological surveys were completed, each species' specific habitat requirements were compared to actual site conditions and the potential for occurrence was then determined. The queries identified 51 species of special-status plant and wildlife species, 3 of which: Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), and western pond turtle (*Emys marmorata*) were identified as present. Two species, burrowing owl (*Athena cunicularia*) and Sanford's arrowhead (*Sagittaria sanfordii*) were determined to have a high potential to occur within the BSA; while the song sparrow "Modesto population" (*Melospiza melodia*), tricolored blackbird (*Agelaius tricolor*), yellow-headed blackbird (*Xanthocephalus xanthocephalus*), vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardi*), Boggs Lake hedge-hyssop (*Gratiola heterosepala*), dwarf downingia (*Downingia pusilla*), legenere (*Legenere limosa*), wolly rose-mallow (*Hibiscus lasiocarpos var. occidentalis*), giant garter snake (*Thamnophis gigas*), and western spadefoot (*Spea hammondii*) have a low to moderate chance of occurring within the BSA.

Federally listed threatened giant garter snake (GGS) has the potential to occur within the BSA due to presence of suitable habitat and recent documented regional occurrences. Additionally, federally listed threatened vernal pool fairy shrimp, and federally-listed endangered vernal pool tadpole shrimp have the potential to occur within the BSA due to the fact that the proposed Project occurs within the range of both species and potentially suitable habitat for the species is present within the BSA. Prior to completion of the environmental review process, the U.S. Army Corps of Engineers (USACE) will initiate and complete Section 7 Consultation with the U.S. Fish and Wildlife Service (USFWS) for potential Project related impacts to these species pursuant the Federal Endangered Species Act (FESA). Section 7 Consultation is planned to occur during the Clean Water Act (CWA) permitting process with the USACE as the Project's federal nexus. In compliance with FESA, any additional avoidance and minimization measures or mitigation efforts resulting from the consultation process will be incorporated into the Project design. Considering the scale of impact, it is anticipated that the Project may affect, but is not likely to adversely affect GGS, vernal pool fairy shrimp and vernal pool tadpole shrimp.

The following permits will be obtained for the proposed Project prior to construction: Section 404 Nationwide Permit 14 from the USACE, Section 401 Water Quality Certification from California Regional Water Quality Control Board (RWQCB), National Pollutant Discharge Elimination System (NPDES) from RWQCB, Section 1602 Streambed Alteration Agreement from California Department of Fish and Wildlife (CDFW), Construction General Permit from State Water Resources Control Board (SWRCB) for soil disturbance (over 1.0 acre).

Table of Contents

List of Figures

List of Tables

List of Abbreviated Terms

BMPs	Best Management Practices
BRR	Biological Resources Report
BSA	Biological Study Area
Caltrans	California Department of Transportation
Cal-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CFG	California Fish and Game
CGP	Construction General Permit
City	City of Elk Grove
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CWA	Clean Water Act
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Environmentally Sensitive Area
°F	Degrees Fahrenheit
FESA	Federal Endangered Species Act
FHWA	Federal Highways Administration
GGS	Giant Garter Snake
MBTA	Migratory Bird Treaty Act
MS4	Municipal Separate Storm Sewer Systems
NEPA	National Environmental Policy Act
NPDES	National Pollution Discharge Elimination System
OHWM	Ordinary High Water Mark
Project	Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project
RWQCB	Regional Water Quality Control Board
SSC	Species of Special Concern
State	State of California
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TMDL	Total Maximum Daily Loads
U.S.	United States
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WPT	Western Pond Turtle

Chapter 1. Introduction

The City of Elk Grove (City) proposes to construct the Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project (Project), located in Elk Grove, Sacramento County, California (Figure 1. Project Vicinity and Figure 2. Project Location). The proposed Project will involve construction of a 2.2-mile long multi-functional corridor along the banks adjacent to segments of Laguna and Whitehouse Creeks, located between East Stockton Boulevard and Camden Park.

This Biological Resources Report (BRR) was prepared for the Project and describes the existing biological environment within the proposed Project's Biological Study Area (BSA).

1.1. Project Description

The Project consists of constructing a multi-functional corridor between Camden Lake and East Stockton Boulevard. The Project includes construction of a maintenance access road (paved with no striping) from the existing Laguna Creek Trail, located south of the intersection of Beckington Drive and White Peacock Way, to a connection at East Stockton Boulevard approximately 750 feet south of the intersection of East Stockton Boulevard and Cantwell Drive. The maintenance access road would consist of a 10-foot-wide paved surface with unpaved shoulders 2 feet wide. While the majority of the maintenance access road would be paved, the segment that provides direct access to the north side of Laguna Creek near East Stockton Boulevard may be unpaved or may consist of a viaduct. Where determined feasible, single span pre-fab steel or concrete bridges providing necessary access across Laguna and Whitehouse Creeks (Figure 3. Project Features).

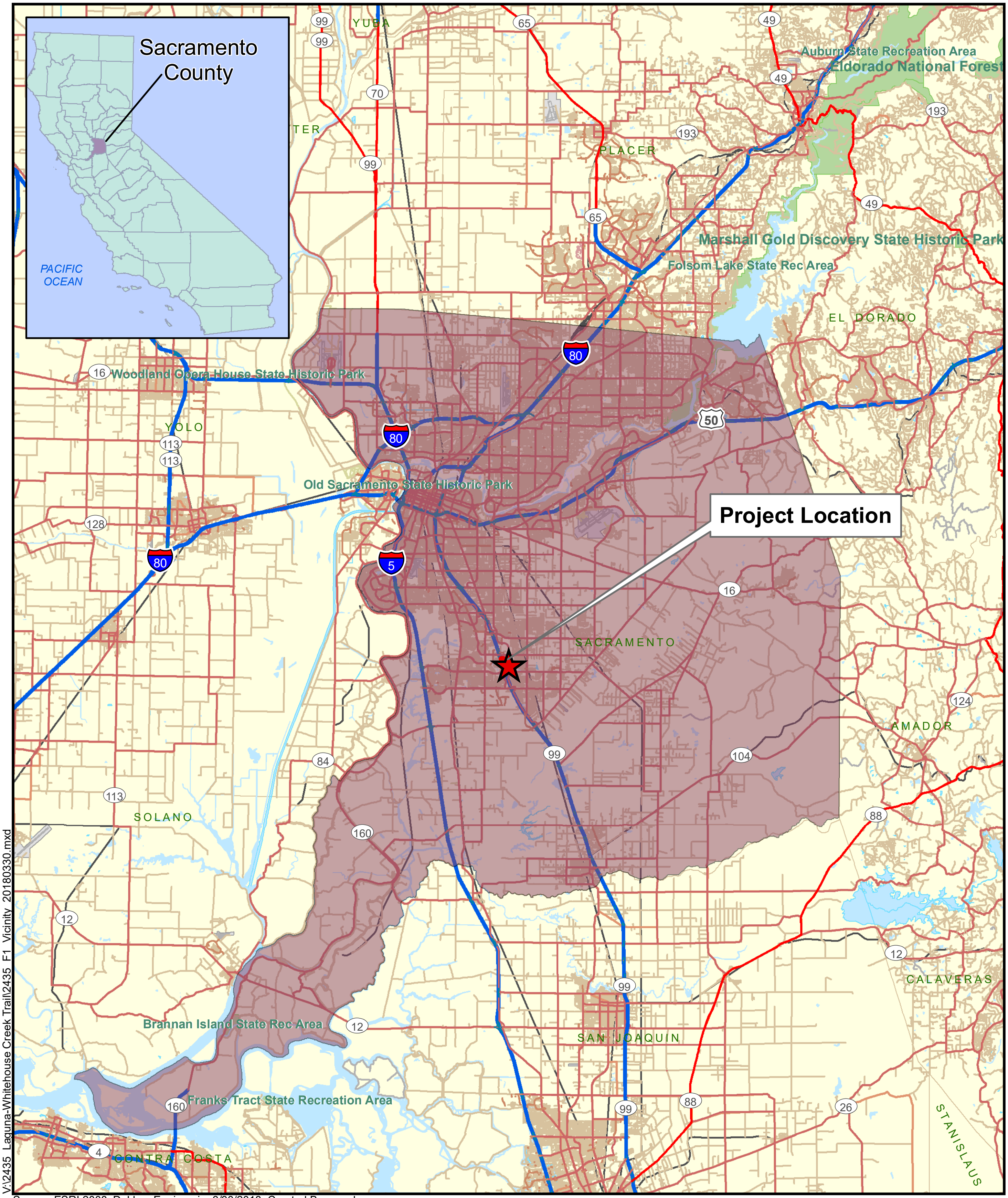
Pre-fabricated steel or concrete bridges would provide necessary access across Laguna and Whitehouse Creeks The Project is considering either a northern crossing or southern crossing of Whitehouse Creek. The southern crossing would be located just north of the confluence with Laguna Creek while the northern crossing would be located approximately 400 feet north of the creek confluence. The difference in environmental impacts between the two design options is minimal and the final location of the crossing will be determined during final design.

The last phase of the Project would consist of converting the maintenance access road into a Class 1 multi-functional trail corridor connection between the Camden Park and East Stockton Boulevard, with striping, and trail amenities incorporated as necessary. This would complete a gap within the trail system in accordance with the City's Bicycle, Pedestrian, and Trails Master Plan.

Additional Project features would include construction of retention basins to offset the floodplain encroachments from the maintenance road/multi-functional trail, fencing to prevent pedestrian incursion beyond the multi-functional corridor, and trail amenities. Right-of-way acquisitions and temporary construction easements are needed where the multi-functional corridor passes through privately-owned parcels.

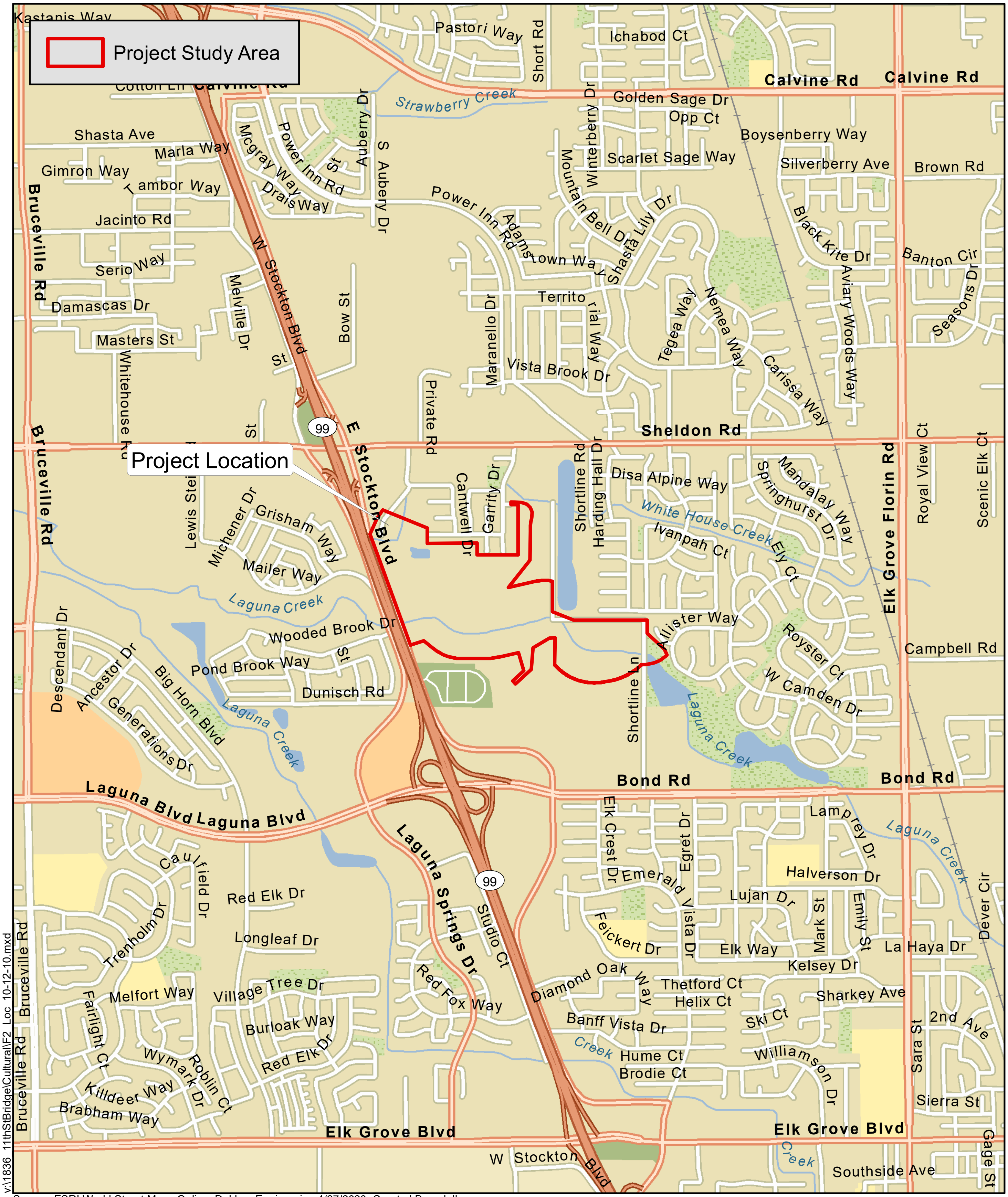
This Project is partially funded through the City's Storm Drainage Master Plan and is subject to compliance with the California Environmental Quality Act (CEQA). The lead agency for CEQA compliance is the City. The Project is also subject to compliance with the National Environmental Policy Act (NEPA) due to anticipated federal permitting through the U.S. Army Corps of Engineers federal nexus during the Clean Water Act Section 404 permitting process for project impacts to waters of the U.S.

.



Source: ESRI 2008; Dokken Engineering3/30/2018; Created By: amyd

FIGURE 1
Project Vicinity
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, Sacramento County, California



v:\1836_11thStBridge\Cultural\F2_Loc_10-12-10.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 4/27/2020; Created By: adellas

N

0 0.25 0.5 0.75 1 Miles

FIGURE 2
Project Location
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, Sacramento County, California

Source: ESRI World Street Maps Online; Dokken Engineering 7/10/2023; Created By: amyd

FIGURE 3
Project Features
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

1.1.1. Purpose

The purpose of the Project is to provide access along Laguna Creek and Whitehouse Creek to City maintenance crews.

1.1.2. Need

The Project is needed to provide an off-street multiuse trail system providing connections throughout the City and the Sacramento region.

Chapter 2. Study Methods

Prior to field work, literature research was conducted through the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) website to generate an official species list (Appendix A: USFWS Species List), the California Department of Fish and Wildlife (CDFW) *California Natural Diversity Database* (CNDDB) (Appendix B: CNDDB Species List), the California Native Plant Society (CNPS) *Electronic Inventory of Rare and Endangered Plants* (Appendix C: CNPS Species List), and the National Marine Fisheries Service (NMFS) (Appendix D: NFMS Species List) to identify habitats and special-status species having the potential to occur within the BSA. Field surveys were conducted on April 4, 2018 to document existing biological resources, detect potential jurisdictional waters, and search for sensitive and protected species or their habitats.

2.1. Regulatory Requirements

This section describes the Federal, State, and local plans, policies, and laws that are relevant to biological resources within the BSA. Applicable Federal permits and approvals that will be required before construction of the proposed Project are provided in Chapter 5.

Federal Regulations

2.1.1. Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973 (16 U.S.C. section 1531 et seq.) provides for the conservation of endangered and threatened species listed pursuant to Section 4 of the Act (16 U.S.C. section 1533) and the ecosystems upon which they depend. These species and resources have been identified by USFWS and NMFS.

2.1.2. Clean Water Act

The Clean Water Act (CWA) was enacted as an amendment to the Federal Water Pollutant Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to Waters of the United States (WoUS). The CWA serves as the primary Federal law protecting the quality of the nation’s surface waters, including lakes, rivers, and coastal wetlands. The CWA empowers the U.S. Environmental Protection Agency (EPA) to set national water quality standards and effluent limitations, and includes programs addressing both point-source and non-point-source pollution. Point-source pollution originates or enters surface waters at a single, discrete location, such as an outfall structure or an excavation or construction site. Non-point-source pollution originates over a broader area and includes urban contaminants in storm water runoff and sediment loading from upstream areas. The CWA operates on the principle that all discharges into the nation’s waters are unlawful unless they are specifically authorized by a permit; permit review is the CWA’s primary regulatory tool.

Section 303(d)

Under the mandate of Section 303(d) of the CWA, the RWQCB is required to formulate a list of surface water bodies that exceed applicable water quality standards. Subsequently, the RWQCB is required to describe the impairment sources and prioritize these water bodies to develop Total Maximum Daily Loads (TMDLs). The current list was updated in 2012 and approved by the U.S. EPA in 2013. Laguna Creek and Whitehouse Creek are not 303(d) listed (Caltrans, 2020).

Section 401
The Regional Water Quality Control Board (RWQCB) has jurisdiction under Section 401 of the CWA and regulates any activity which may result in a discharge to surface waters. Typically, the areas subject to jurisdiction of the RWQCB coincide with those of U.S. Army Corps of Engineers (USACE) (i.e., waters of the U.S. including any wetlands). The RWQCB also asserts authority over “Waters of the State” under waste discharge requirements pursuant to the Porter-Cologne Water Quality Control Act. The proposed Project is located within the Jurisdiction of the Sacramento office of the Central Valley RWQCB.

Section 402
The Central Valley RWQCB is a designated municipal permitee under the EPA’s National Pollutant Discharge Elimination System (NPDES), which regulates stormwater flows into natural water bodies. The NPDES regulations require permitted areas to implement specific activities and actions to eliminate or control stormwater pollution (RWQCB, 2018).

The U.S. EPA defines a Municipal Separate Storm Sewer System (MS4) as any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that are designed or used for collecting or conveying storm water. As part of the NPDES program, U.S. EPA initiated a program requiring that entities having MS4s apply to their local RWQCBs for storm water discharge permits. The City is permitted as an MS4 under the Central Valley Region wide MS4 (Order No. R5-2016-0040), adopted by the RWQCB on June 23, 2016, therefore, the Project would be subject to the requirements of this permit.

Construction General Permit (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ), became effective on February 14, 2011 and July 17, 2012, respectively. The permit regulates storm water discharges from construction sites which result in a land disturbance of equal to or greater than one acre, and/or are smaller sites that are part of a larger common plan of development. For all projects subject to the CGP, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP).

By law, all storm water discharges associated with construction activity, including, but not limited to, clearing, grading grubbing or excavation, or any other activity that results in a land disturbance of equal to or greater than one acre must comply with the provisions of the CGP. Construction activity that results in soil disturbances of less than one acre is subject to this CGP if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop a Storm Water Pollution Prevention Plan; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the CGP.

The CGP separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and pre- and post-construction aquatic biological assessments during specified seasonal windows. The Project is a Risk Level 2, with a low sediment risk and high receiving water risk.

Section 404
The USACE regulates discharges of dredged or fill material into waters of the U. S. These waters include wetlands and non-wetland bodies of water that meet specific criteria, including a direct or

indirect connection to interstate commerce. USACE regulatory jurisdiction pursuant to Section 404 of the CWA is founded on a connection, or nexus, between the water body in question and interstate commerce. This connection may be direct (through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce) or may be indirect (through a nexus identified in USACE regulations).

2.1.3. Executive Order 13186: Migratory Bird Treaty Act

EO 13186 (signed January 10, 2001) directs each Federal agency taking actions that could adversely affect migratory bird populations to work with USFWS to develop a Memorandum of Understanding that will promote the conservation of migratory bird populations. Protocols developed under the Memorandum of Understanding will include the following agency responsibilities:

- avoid and minimize, to the maximum extent practicable, adverse impacts on migratory bird resources when conducting agency actions;
- restore and enhance habitat of migratory birds, as practicable; and
- prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

The EO is designed to assist Federal agencies in their efforts to comply with the Migratory Bird Treaty Act (MBTA) (50 Code of Federal Regulations [CFR] 10 and 21) and does not constitute any legal authorization to take migratory birds. Take is defined under the MBTA as “the action of or attempt to pursue, hunt, shoot, capture, collect, or kill” (50 CFR 10.12) and includes intentional take (i.e., take that is the purpose of the activity in question) and unintentional take (i.e., take that results from, but is not the purpose of, the activity in question).

State Regulations

2.1.4. California Environmental Quality Act

California Environmental Quality Act (CEQA) is a State law created to inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities and to work to reduce these negative environmental impacts. The City is the CEQA lead agency for this Project.

2.1.5. California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game [CFG] Code Section 2050 et seq.) requires CDFW to establish a list of endangered and threatened species (Section 2070) and to prohibit the incidental taking of any such listed species except as allowed by the Act (Sections 2080-2089). In addition, CESA prohibits take of candidate species (under consideration for listing).
CESA also requires CDFW to comply with CEQA (Pub. Resources Code Section 21000 et seq.) when evaluating incidental take permit (ITP) applications (CFG Code Section 2081(b) and California Code Regulations, Title 14, section 783.0 et seq.), and the potential impacts the project or activity for which the application was submitted may have on the environment. CDFW’s CEQA obligations include consultation with other public agencies which have jurisdiction over the project or activity [California Code Regulations, Title 14, Section 783.5(d)(3)]. CDFW cannot issue an ITP if issuance would jeopardize the continued existence of the species [CFG Code Section 2081(c); California Code Regulations, Title 14, Section 783.4(b)].

2.1.6. Section 1602: Streambed Alteration Agreement

Under CFG Code 1602, public agencies are required to notify CDFW before undertaking any project that will divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Preliminary notification and project review generally occurs during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resources. These modifications are formalized in a Streambed Alteration Agreement that becomes part of the plans, specifications, and bid documents for the project.

2.1.7. Section 3503 and 3503.5: Bird and Raptors

CFG Code Section 3503 prohibits the destruction of bird nests and Section 3503.5 prohibits the killing of raptor species and destruction of raptor nests. Trees and shrubs are present in and adjacent to the study area and could contain nesting sites.

2.1.8. Section 3513: Migratory Birds

CFG Code Section 3513 prohibits the take or possession of any migratory non-game bird as designated in the MBTA or any part of such migratory non-game bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

2.1.9. Porter Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the State. It predates the CWA and regulates discharges to waters of the State. Waters of the State include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined and this definition is broader than the CWA definition of "pollutant". Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA, and regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a project area are contained in the applicable RWQCB Basin Plan. In California, Regional Boards designate beneficial uses for all water body segments in their jurisdictions, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants, which are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-source point controls (NPDES permits or Waste Discharge Requirements), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

2.1.10. Regional Water Quality Control Boards

The SWRCB adjudicates water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. Regional Water Quality Control Boards are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

Local Regulations

2.1.11. City of Elk Grove General Plan (As Amended)

The policies below are excerpted from the City of Elk Grove General Plan (as amended) (City of Elk Grove 2019). These policies are designed to guide conservation of native and non-native habitats, plants, and animals within the City's jurisdiction.

- Policy LU-3-22: Identify a mitigation program for critical habitat for special status species known to occur within the Study Areas. A proposed project determined to have a significant impact to habitat for special status species shall implement all feasible mitigation measures established in the program, including but not limited to land dedication (which may be located either inside or outside the corresponding Study Area) or fee payment, or both.
- Policy PT-1-11: In land uses adjacent to natural open space areas, provide on-site landscaping as a transition to natural habitats to the extent feasible.
- Policy NR-1-2: Preserve and enhance natural areas that serve, or may potentially serve, as habitat for special-status species. Where preservation is not possible, require that appropriate mitigation be included in the project.
- Policy NR-1-3: Support the establishment of multipurpose open space areas to address a variety of needs, including but not limited to maintenance of agricultural uses, wildlife habitat, recreational open space, aesthetic benefits, and flood control. To the extent possible, lands protected in accordance with this policy should be in proximity to Elk Grove to facilitate use of these areas by Elk Grove residents, assist in mitigation of habitat loss within the City, and provide an open space resource close to the urbanized areas of Elk Grove.
- Policy NR-1-4: Avoid impacts to wetlands, vernal pools, marshland, and riparian (streamside) areas unless shown to be technically infeasible. Ensure that no net loss of wetland areas occurs, which may be accomplished by avoidance, revegetation, restoration on-site or through creation of riparian habitat corridors, or purchase of credits from a qualified mitigation bank.
- Policy NR-1-5: Recognize the value of naturally vegetated stream corridors, commensurate with flood control and public desire for open space, to assist in removal of pollutants, provide native and endangered species habitat and provide community amenities.
- Policy NR-1-6: Encourage the retention of natural stream corridors, and the creation of natural stream channels where improvements to drainage capacity are required.
- Policy NR-1-7: Consider the adoption of Habitat Conservation Plans to protect rare, threatened, or endangered species.
- Policy NR-1-9: Encourage development clustering where it would facilitate on-site protection of woodlands, grasslands, wetlands, stream corridors, scenic areas, or other appropriate features such as active agricultural uses and historic or cultural resources under the following conditions and requirements. Clustering shall not be allowed in the Rural Area.
- Policy NR-2-1: Preserve large native oak and other native tree species as well as large nonnative tree species that are an important part of the City's historic and aesthetic character. When reviewing native or non-native trees for preservation, consider the following criteria: health of tree, safety hazards posed by the tree, suitability for preservation in place, biological value, aesthetic value, shade benefits, water quality benefits, runoff reduction benefits, and air quality benefits (pollutant reduction).

- Policy NR-2-5: Ensure that trees that function as an important part of the City's or a neighborhood's aesthetic character or as natural habitat on public and private land are retained or replaced to the extent possible during the development of new structures, roadways (public and private, including roadway widening), parks, drainage channels, and other uses and structures.

2.1.12. City of Elk Grove Swainson's Hawk Program

In 2003, the City established and adopted Chapter 16.130 (Swainson's Hawk Impact Mitigation Fees) of the Elk Grove Municipal Code, which establishes mitigation policies tailored for projects in Elk Grove that have been determined through the CEQA process to result in a "potential significant impact" on Swainson's hawk foraging habitat (City of Elk Grove, 2020). Chapter 16.130, often referred as the "Swainson's Hawk Code," serves as a conservation strategy that is achieved through the selection of appropriate replacement lands and through management of suitable habitat value on those lands in perpetuity. To mitigate for the loss of foraging habitat in the City, the Swainson's Hawk Code allows a project applicant to provide mitigation by one or a combination of options.

2.2. Studies Required

Online Databases from USFWS (Appendix A: USFWS Species List), CNDDB (Appendix B: CNDDB Species List), CNPS (Appendix C: CNPS Species List), and NMFS (Appendix D: NMFS Species List) were queried for presence of potential threatened, endangered, rare or special status species within United States Geological Survey (USGS) 7½ minute quadrangles. These searches identified 51 regional species of special concern with potential to occur in the vicinity of the Project area. These species are listed in Chapter 3, Table 3 which provides a comprehensive list of these species and presents specific characteristics, habitat requirements, and potential for occurrence for each species. Based upon literature and online database research the following surveys and studies were conducted: a general biological survey, a jurisdictional delineation and a rare plant focused survey.

2.2.1. Biological Study Area

Prior to field surveys, the BSA was defined as the proposed Project impact area and a 250-foot buffer from the existing City floodway easement, where feasible, to accommodate the design and facilitate construction (Figure 3. Project Features). The Project impact area is defined as all areas that will be temporarily or permanently impacted by the Project, including proposed right of way, construction easements, cut and fill limits, potential staging areas, and access roads.

2.2.2. Survey Methods

2.2.2.1. General Biological Survey Methods

General biological surveys were conducted by walking meandering transects through the BSA, mapping vegetation communities and assessing potential habitat for sensitive species within the BSA. All plant and wildlife observations were recorded and are discussed in Chapter 3.

2.2.2.2. Jurisdictional Waters Delineation Methods

Potential jurisdictional waters within the BSA were assessed and potential wetland features were evaluated for presence of the following wetland indicators: hydrophytic vegetation, hydric soils and wetland hydrology. Surveys of potential jurisdictional waters were confirmed using aerial imagery and field verification, and followed the guidelines provided in the USACE *Wetland Delineation Manual* (USACE 1987), *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008a), and *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b). Wetlands that exhibit all three wetland indicators are considered waters of the U.S. if they are hydraulically connected to another water of the U.S. Waters of the state can include wetlands that are not hydraulically connected to another water body if they provide habitat for wildlife or special status plant species.

2.2.2.3. Focused Rare Plant Survey Methods

Information on special status rare plants within the Project area was gathered from several sources including USFWS' online species database (USFWS 2019), CDFW's CNDDB (CNDDB 2019), and CNPS' Electronic Inventory of Rare and Endangered Plants (CNPS 2019) to identify habitats and special-status species with the potential to occur within the BSA. Habitat assessments conducted on April 4, 2018 identified suitable habitat for five special status plant species within the BSA. Additional focused rare plant surveys were conducted on April 24-26 and June 21, 2018 during special status rare plant species appropriate blooming seasons. Focused rare plant surveys did not identify any of the rare plant species within corresponding habitat areas. Focused rare plant surveys were consistent with the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* published by CDFW (CDFW 2018).

2.3. Personnel and Survey Dates

The general biological survey and habitat assessments were conducted by Dokken Engineering biologists, Andrew Dellas and Scott Salembier on April 4, 2018. Jurisdictional delineations were conducted by Dokken Engineering biologists, Andrew Dellas and Courtney Owens on April 24 – April 26, 2018 to identify jurisdictional resources present within the BSA. Focused rare plant surveys were conducted by Dokken Engineering biologists, Andrew Dellas and Courtney Owens on April 24 – April 26, 2018, as well as Andrew Dellas and Scott Salembier on June 21, 2018 during the appropriate blooming season for species determined to have potential to occur within the BSA.

2.4. Agency Coordination and Consultation History

<u>United States Army Corps of Engineers – Sacramento District</u>
An inter-agency pre-application meeting was held on December 5, 2019 to discuss USACE jurisdiction within the project area as well as FESA-listed species with potential to occur. USFWS was invited to the meeting; however, no officials from USFWS attended the meeting.

Mr. Peck Ha, USACE Senior Project Manager, led the pre-application meeting and determined USACE would be federal lead agency for FESA Section 7 consultation through the USACE CWA Section 404 permitting process. A CWA Section 404 Pre-Construction Notification (PCN) for impacts to waters of the U.S. will be prepared and submitted to USACE. This BRR will accompany the PCN as supporting documentation for FESA Section 7 consultation for giant garter snake (GGS), vernal pool fairy shrimp, and vernal pool tadpole shrimp.

<u>United States Fish and Wildlife Service</u>
On May 21, 2018 an official species list was obtained from USFWS of Federal Endangered and Threatened species that could occur in the vicinity of the proposed Project. On October 15, 2019 an updated official species list was obtained from USFWS. On April 22, 2020 an updated official species list was obtained (Appendix A: USFWS Species List).

<u>California Department of Fish and Wildlife</u>
On May 21, 2018 a nine-quadrangle USGS 7.5-minute Quadrangle search was conducted to obtain a list of species potentially occurring in the Project vicinity from CDFW's CNDDB. An updated search

was conducted on October 15, 2019. On April 22, 2020 an updated official species list was obtained (Appendix B: CNDDB Species List).

The City will coordinate with CDFW regarding potential Project effects to all state-listed and species of special concern (SSC) during the Section 1602 Streambed Alteration Agreement permitting process.

<u>National Marine Fisheries Service</u>
On May 21, 2018 an official species list was obtained from NMFS of ESA-listed species, critical habitat, essential fish habitat, and marine mammals under NMFS purview in California. An updated official species list was obtained from NMFS on October 15, 2019. On April 22, 2020 an updated official species list was obtained (Appendix D: NFMS Species List).

<u>California Native Plant Society</u>
On May 21, 2018 a list of special status plants with the potential to occur within the Project vicinity was obtained from CNPS. An updated list was obtained from CNPS on October 15, 2019. On April 22, 2020 an updated official species list was obtained (Appendix D. CNPS Species List).

2.5. Limitations That May Influence Results

Biological surveys, jurisdictional delineation, and focused rare plant surveys were conducted during appropriate weather and temperature conditions, and during specific blooming periods. No limitations were determined for the studies required.

Chapter 3. Environmental Baseline

The Project occurs within in the City of Elk Grove, Sacramento County, in the California Dry Steppe Province ecological subregion, Great Valley Section, and ecological subsection 262Ag (Hardpan Terraces) of California (USDA 2007). The City receives an average of 18 inches of precipitation annually in the form of rain. The average annual high temperature is 73 degrees Fahrenheit (°F) and average annual low temperature is 48 °F (U.S. Climate Data 2020).

3.1. Description of the Existing Biological and Physical Conditions

The following sections discuss ecological conditions of the region and biological resources present within the BSA.

3.1.1. Biological Study Area

The BSA encompasses approximately 132 acres and includes approximately 4,000 linear feet of Laguna Creek from East Stockton Boulevard to Camden Lake. The BSA is approximately 4,300 feet (0.8 miles) from east to west and approximately 1,700 feet (0.33 miles) from north to south. The BSA was defined as the proposed Project impact area and a 250-foot buffer from the existing City floodway easement to accommodate the design and facilitate construction

3.1.2. Physical Conditions

3.1.2.1. Topography

The BSA is within the USGS Elk Grove 7 ½ Minute Quadrangle. The Project area occurs within a single distinct topographic region of valley floor. The topography of the valley floor consists of low-elevation fluvial plains formed on nonmarine sedimentary rock with gently rolling terrain located on the Sacramento valley floor. The BSA occurs between the approximate elevations of 45-50 feet above mean sea level.

3.1.2.2. Soils

The Natural Resource Conservation Service (NRCS) Custom Soil Resource Report for the Project (NRCS 2018) identifies soils within the BSA as:

- Bruella sandy loam, 0 to 2 percent slopes (13.5%)
- Dierssen sandy clay loam, drain, 0 to 2 percent slopes (6.0%)
- Madera loam, 0 to 2 percent slopes (8.5%)
- San Joaquin silt loam, leveled, 0 to 1 percent slopes (9.6%)
- San Joaquin silt loam, 0 to 3 percent slopes (62.4%)

3.1.2.3. Hydrological Resources

Hydrological resources within the BSA include Laguna Creek, Whitehouse Creek, and associated wetland features: emergent marsh, vernal pools, vernal swales, seasonal wetlands, and seasonal wetland swales. Laguna Creek and Whitehouse Creek are part of the Morrison Creek watershed, and Laguna Creek subwatershed, within the Lower Sacramento River Hydrologic Unit (HUC 6) (Caltrans 2020). Whitehouse Creek flows from east to west and has been redirected around residential developments north of the BSA. Whitehouse Creek then joins with Laguna Creek within the BSA approximately 0.25 miles east of East Stockton Boulevard. Laguna Creek flows east to west travelling approximately 4000 linear feet through the BSA from Camden Lake to East Stockton Boulevard. All wetland and water features were assessed for Federal and State jurisdiction.

3.1.3. Biological Conditions in the Biological Study Area

The BSA is dominated by undisturbed annual grassland areas and aquatic habitats. Land use within the BSA is designated as low- and medium-density residential and institutional. The BSA is currently zoned as “Agricultural Residential 5-acre min (AR-5) and is surrounded by “Low Density Residential” (RD-4) and “Shopping Center” (SC) according to the City’s General Plan, as amended (City of Elk Grove 2019). Dominant land cover and vegetative communities within the BSA consist of disturbed/urban, annual grassland, eucalyptus, freshwater pond, perennial creeks, vernal pools, vernal swales, seasonal wetlands, seasonal wetland swales, and emergent marsh (Figure 4. Waters and Vegetation Communities within the BSA).

3.1.3.1. Vegetation Communities

Disturbed/Urban

The disturbed/urban land cover type is defined as areas that have been subject to previous or ongoing disturbances such as along roadsides, trails, and parking lots. Mowed, scraped or graded land, and gravel areas would be included in this land cover type. Disturbed land cover type is vegetated with diverse weedy flora. Vascular plant species associated with these areas typically include Johnson grass (*Sorghum halepense*), Canadian horseweed (*Conyza canadensis*), milk thistle (*Silybum marianum*), yellow-star thistle (*Centaurea solstitialis*), and field bindweed (*Convolvulus arvensis*).

Annual Grassland

The Project area is dominated by annual grassland areas. The annual grasslands throughout the rural landscape consist of varying non-native species including wild oat (*Avena* sp.), Italian rye grass (*Festuca perennis*), medusa head (*Elymus caput-medusae*), prickly lettuce (*Lactuca serriola*), and others. These annual grasslands within the BSA are typically used for hay production and are disturbed annually from this process.

Eucalyptus

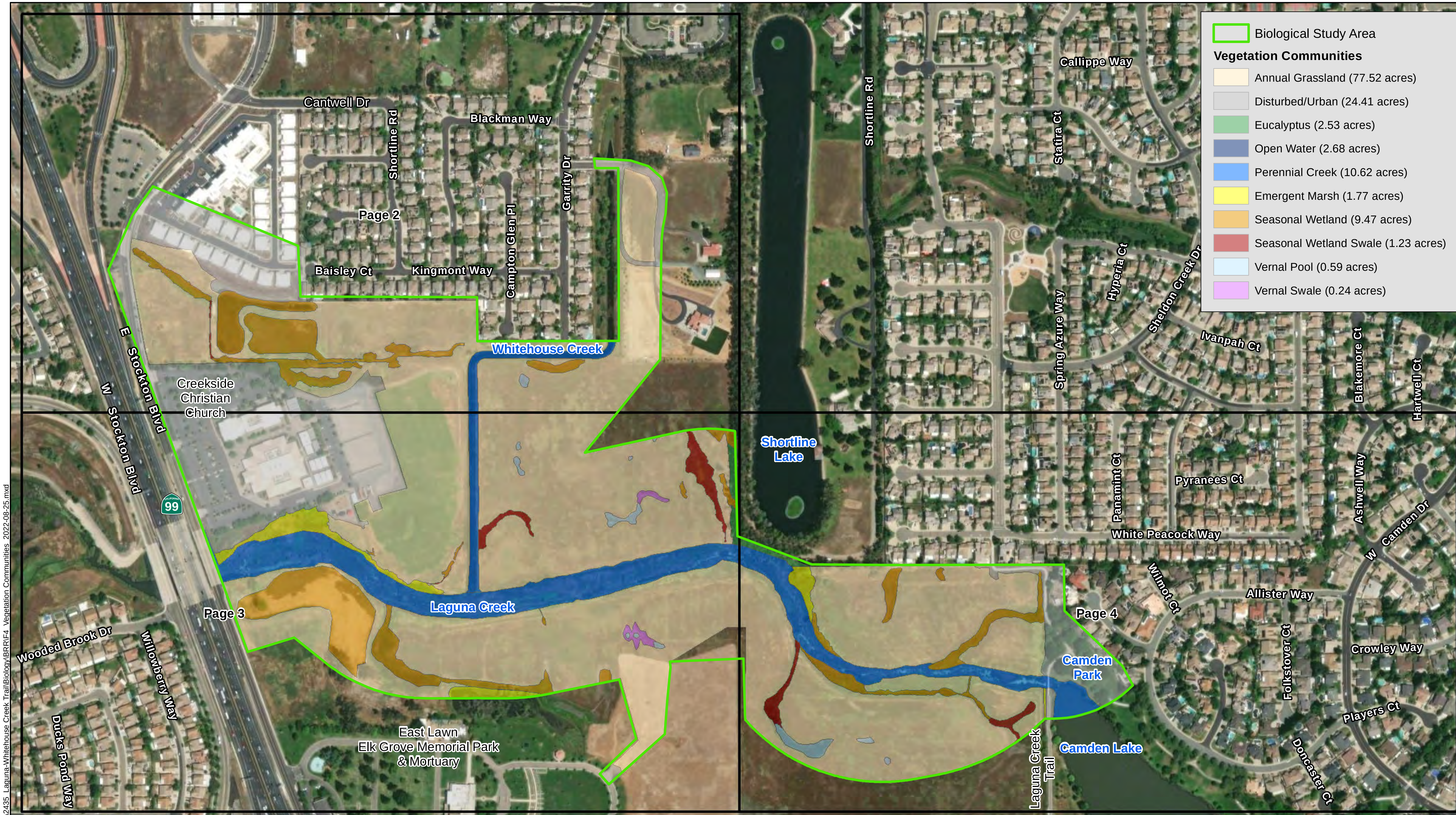
The Project area has one area of eucalyptus habitat surrounding Shortline Lake. The eucalyptus stand is composed of Tasmanian blue gum (*Eucalyptus globulus*), a Cal-IPC listed invasive species. In most cases, eucalyptus forms a dense stand with a closed canopy, and are planted in rows for wind protection or dense groves for hardwood production. This stand appears to have been planted for wind protection for the Shortline Lake properties. The habitat is a monotypic stand of eucalyptus with little to no shrubby understory.

Freshwater Pond

The BSA includes a portion of Shortline Lake as freshwater pond habitat. This habitat his highly managed but the Shortline Lake properties, which use the pond as a water skiing course. Shortline Lake is a human-made excavated unnatural water body, managed to prevent algae and wetland vegetation from growing.

Perennial Creeks

A portion of the BSA includes Whitehouse Creek and Laguna Creek. The perennial creek habitat type is defined as the average wetted area within the perennial linear water features such as rivers, streams and creeks. Habitat types typically found immediately adjacent to the stream and creek habitat include mixed riparian woodland, mixed riparian scrub, valley oak woodland, seasonal wetland, seasonal wetland swales, freshwater marsh, and valley grassland habitats.



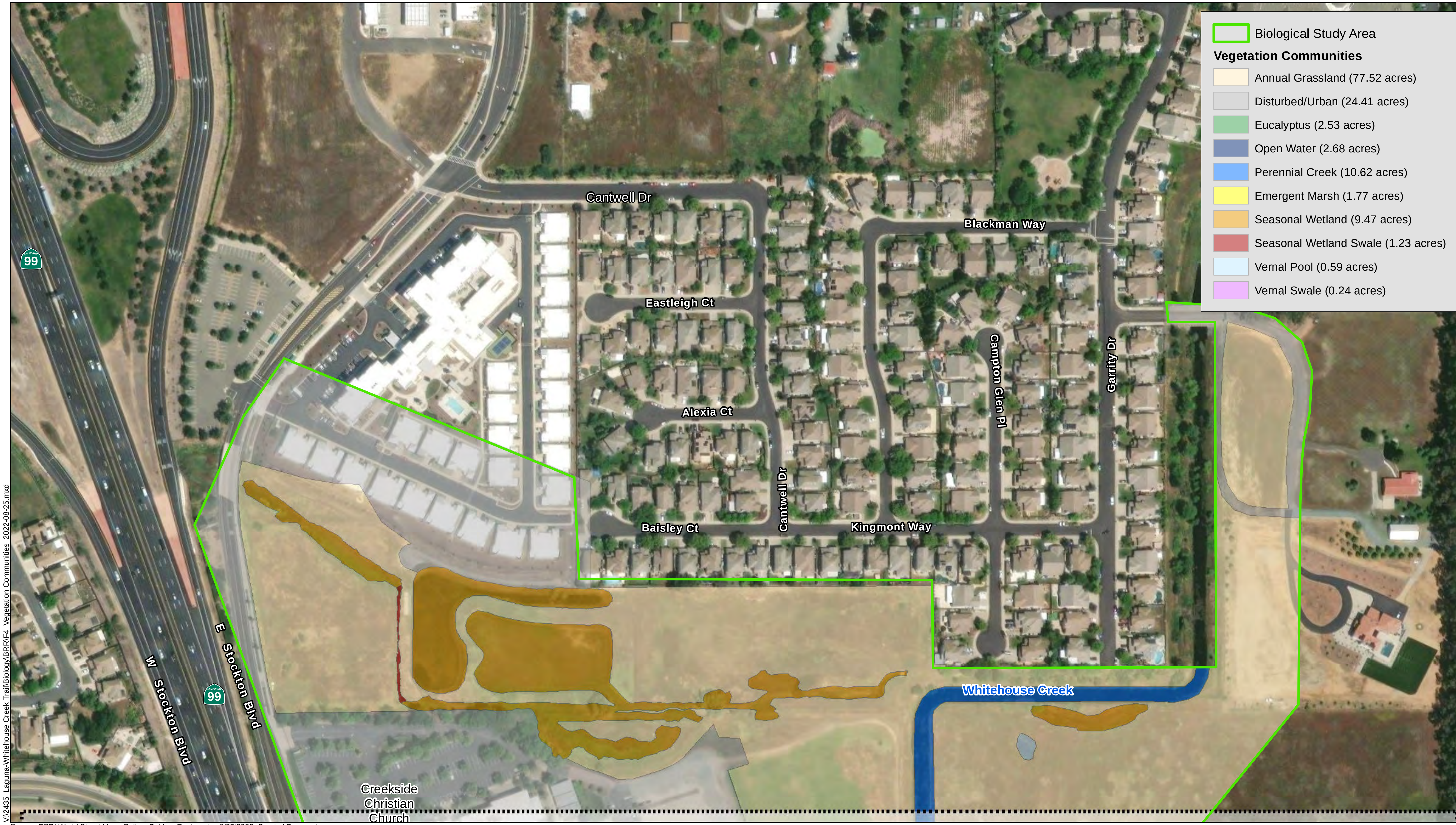
V:\2435_Laguna-Whitehouse Creek Trail\Biology\BRR\F4_Vegetation Communities_2022-08-25.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 8/25/2022; Created By: rramirez

N

0 200 400 600 800 1,000 Feet

FIGURE 4
Vegetation Communities within the BSA
Page 1 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California



Source: ESRI World Street Maps Online; Dokken Engineering 8/25/2022; Created By: rramirez

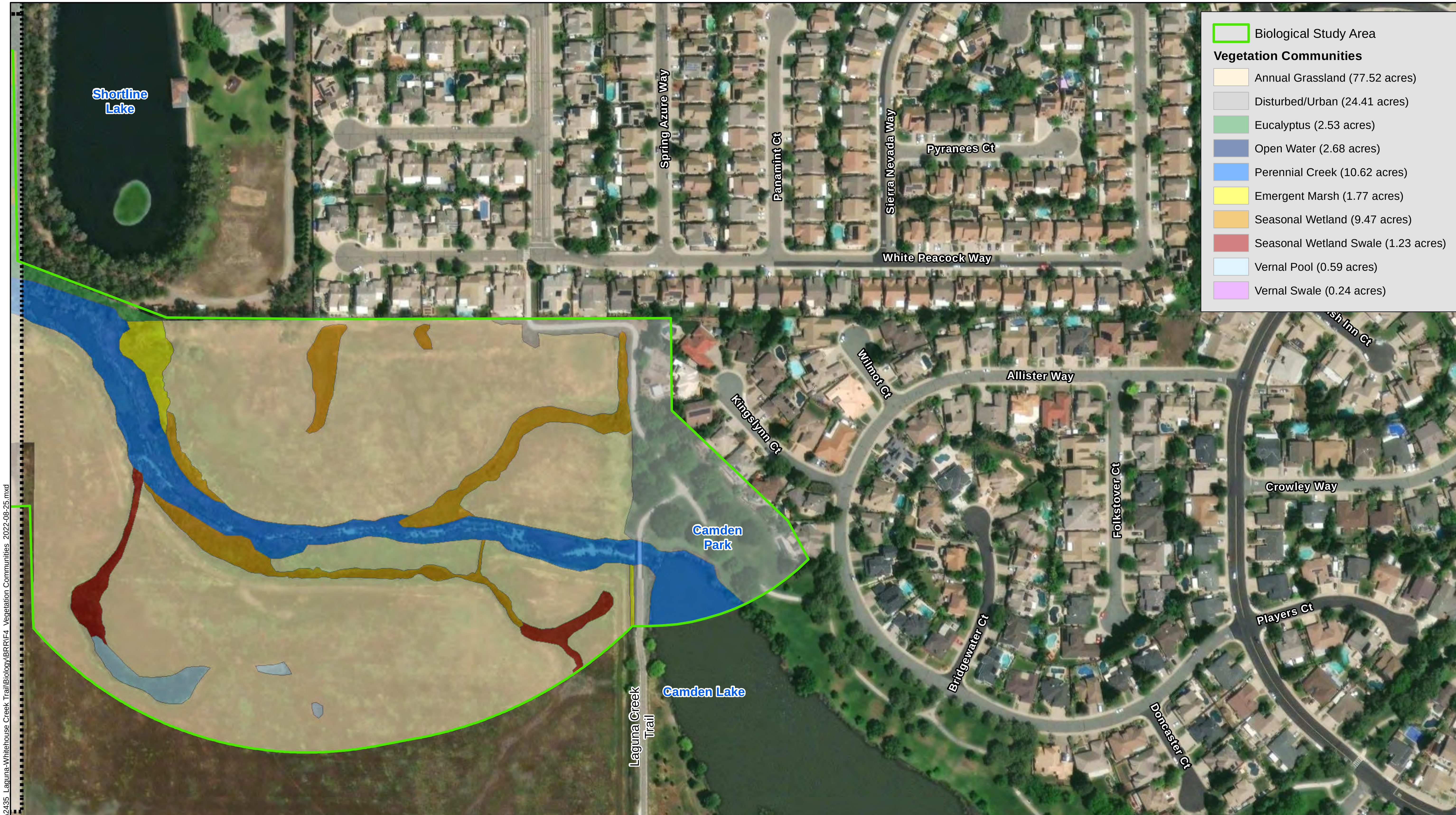
0 100 200 300 400 500 Feet

FIGURE 4
Vegetation Communities within the BSA
Page 2 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

Source: ESRI World Street Maps Online; Dokken Engineering 8/25/2022; Created By: rramirez

0 100 200 300 400 500 Feet

FIGURE 4
Vegetation Communities within the BSA
Page 3 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California



V:\12435_Laguna-Whitehouse Creek Trail\Biology\BRR\F4_Vegetation Communities_2022-08-25.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 8/25/2022; Created By: rramirez

N

0 100 200 300 400 500 Feet

FIGURE 4
Vegetation Communities within the BSA
Page 4 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

Vernal Pool

Vernal pools are characterized by seasonal inundation and their potential to support vernal pool species. A wide variety of herbaceous species are associated with this community type, including Italian ryegrass, Mediterranean barley, coyote thistle (Eryngium spp.), smooth goldfields (Lasthenia glaberrima), Fremont's goldfields (*Lasthenia fremontii*), vernal pool buttercup (*Ranunculus bonariensis var. trisepalus*), and woolly marbles (*Psilocarphus spp.).* Additional species that may be present include Sacramento mint (Pogogyne zizyphoroides), hyssop loosestrife (*Lythrum hyssopifolium*), toad rush (*Juncus bufonius*), popcorn flower (*Plagiobothrys spp.),* alkali weed, mayweed, and curly dock. Vernal pool communities have the potential to support special-status vernal pool invertebrates, such as fairy shrimp (*Branchinecta* spp.) and tadpole shrimp (*Lepidurus* spp.).

Vernal Swale

Vernal pools are sometimes connected to each other by small drainages known as vernal swales, forming complexes of vernal pools. Vernal swales differ from vernal pools in that they function distinctly as shallow, seasonal conveyance channels. The typically connect vernal pools or convey shallow seasonal flows down gradual inclines often collecting water in a vernal pool or seasonal wetland. Vernal swales and pools typically share plant species and successive "rim bloom" plant assemblages and soil types (California Open Lands 2020).

Seasonal Wetland

Seasonal wetlands are defined as ephemeral wetlands that pond during the rainy season and dry during the summer dry season. This habitat type is dominated by hydrophytic vegetation types of grasses, herbs, and forbs. The seasonal wetland habitat type occurs in the adjacent lands of the Stone Lakes NWR in the northwest quadrant of the BSA. Seasonal wetlands can provide habitat for vernal pool associates, and habitat for a wide variety of wildlife including song birds, waterfowl, reptiles, and other wildlife species.

Seasonal Wetland Swale

The seasonal swale land cover type is defined as low meandering channels that tend to be saturated long enough to support vegetative associations. Swale features often represent the headwaters of streams, connect seasonal wetlands, and/or drain small watersheds into defined creeks. Swales can be supported by minor groundwater seepage. Swales contain rabbitsfoot grass (*Polypogon monspeliensis*), fireweed (*Epilobium pygmaeum*), fiddle dock (*Rumex pulcher*), and prickleseed buttercup (*Ranunculus muricatus*). Seasonal swales that occur within and between vernal pool complexes are classified as vernal swales.

Emergent Marsh

Freshwater emergent wetlands are characterized by erect, rooted herbaceous hydrophytes such as common cattail. Emergent wetlands are flooded frequently enough so that the roots of the vegetation are in an anaerobic environment. On the upper margins of this habitat, saturated or periodically flooded soils support several moist soil plant species including Baltic rush (*Juncus balticus*), tall flatsedge, smartweed (*Persicaria spp.),* and, on more alkali sites, saltgrass (*Distichlis spicata*). Lower, wetter portions of freshwater emergent wetlands in the Project area are composed of cattails, bulrush, and floating primrose. In the Project area, several freshwater emergent wetlands exist west of Franklin Boulevard.

Freshwater marshes are among the most productive wildlife habitats in California. Many species rely on freshwater marshes for their entire life cycle. The rare giant garter snake uses these wetlands as its primary habitat. Slow-moving waters provide important resting and foraging habitats for migratory water birds such as the mallard (*Anas platyrhynchos*) and cinnamon teal (*Anas cyanoptera*).

Wetlands also provide habitat for the American coot (*Fulica americana*), great blue heron (*Ardea herodias*), great egret (*Ardea alba*), and black phoebe (*Sayornis nigricans*).

3.1.3.2. Common Plant Species Observed

Table 1 includes a list of plant species observed within the BSA during field surveys. No special status plant species were observed.

Table 1: Plant Species Observed within the BSA

Common Name	Scientific Name	Native (N)/ Non-native (X)
black mustard	*Brassica nigra*	X (Invasive)[1]
blue dicks	*Dichelostemma capitatum*	N
broadleaf cattail	*Typha latifolia*	N
bullthistle	*Cirsium vulgare*	X (Invasive)[1]
California brome	*Bromus carinatus*	N
California bulrush	*Schoenoplectus californicus*	N
California manroot	*Marah fabacea*	N
California poppy	*Eschscholzia californica*	N
California Wild Rose	*Rosa californica*	N
Canary Island pine	*Pinus canariensis*	X
carpet clover	*Trifolium monanthum*	N
Chinese pistache	*Pistacia chinensis*	X
Chinese privet	*Ligustrum sinense*	X
Chinese Tallow	*Triadica sebifera*	X (Invasive)[1]
Cichory	*Cichorium intybus*	X
coast redwood	*Sequoia sempervirens*	N
common fiddleneck	*Amsinckia intermedia*	N
common lippia	*Phyla nodiflora*	N
common smartweed	*Persicaria hydropiperoides*	X
common Sow-thistle	*Sonchus oleraceus*	X
common Spike-rush	*Eleocharis palustris*	N
common stork's-bill	*Erodium cicutarium*	X (Invasive)
common tarweed	*Centromadia pungens*	N
coyote brush	*Baccharis pilularis*	N
coyote-thistle	*Eryngium castrense*	N
curled dock	*Rumex crispus*	X (Invasive)
curvepod yellowcress	*Rorippa curvisiliqua*	N
cut-leaved crane's-bill	*Geranium dissectum*	X (Invasive)
Dallis grass	*Paspalum diatatum*	X
english plantain	*Plantago lanceolata*	X (invasive)
field sedge	*Carex praegracilis*	N
floating primerose-willow	*Ludwigia peploides*	N
fountain grass	*Pennisetum setaceum*	X (Invasive)[1]
foxtail Barley	*Hordeum murinum*	X (Invasive)[1]

Common Name	Scientific Name	Native (N)/ Non-native (X)
Fremont cottonwood	*Populus fremontii*	N
French lavender	*Lavandula stoechas*	X
Goodding's willow	*Salix gooddingii*	N
hairy hawkbit	*Leontodon saxatilis*	X
hairy vetch	*Vicia villosa ssp. villosa*	X
harvest brodiaea	*Brodiaea elegans*	N
Himalayan Blackberry	*Rubus armeniacus*	X (Invasive)[1]
Hyssop loosestrife	*Lythrum hyssopifolia*	X (Invasive)
interior live oak	*Quercus wislizeni*	N
Italian Ryegrass	*Lolium multiflorum*	X (Invasive)[1]
Italian thistle	*Carduus pycnocephalus*	X (Invasive)[1,3]
jointed charlock	*Raphanus sativus*	X (Invasive)
little quaking-grass	*Briza minor*	X
London plane tree	*Platanus hispanica*	X
lupine sp.	*Lupinus*	N
Mediterranean barley	*Hordeum marinum gussoneanum*	X (Invasive)[1]
medusa head	*Taeniatherum caput-medusae*	X (Invasive)[1,2,3]
Mexican Fan Palm	*washingtonia robusta*	X (Invasive)[1]
milk thistle	*Silybum marianum*	X (Invasive)[1]
Muehlenberg's Centaury	*Zeltnera muehlenbergii*	N
narrow leaf milkweed	*Asclepias fascicularis*	N
narrowleaf willow	*Salix exigua*	N
Pacific poison oak	*Toxicodendron diversilobum*	N
pennyroyal	*Mentha pulegium*	X (Invasive)[1]
purple owl's-clover	*Castilleja exserta exserta*	N
ripgut brome	*Bromus diandrus*	X (Invasive)[1,3]
rose Clover	*Trifolium hirtum*	X (invasive)
rough cocklebur	*Xanthium strumarium*	N
scarlet oak	*Quercus coccinea*	X
small six-weeks grass	*Vulpia microstachys*	N
soft chess brome	*Bromus hordeaceus*	X (invasive)
Spikeweed	*Centromedia fitchii*	N
spreading Rush	*Juncus patens*	N
sturdy sedge	*Carex alma*	N
sweet fennel	*Foeniculum vulgare*	X (Invasive)[1]
tall flatsedge	*Cyperus eragrostis*	N
Tasmanian blue gum	*Eucalyptus globulus*	X (invasive)
tumbleweed	*Salsola tragus*	X (invasive)
valley oak	*Quercus lobata*	N
vernal pool buttercup	*Ranunculus bonariensis trisepalus*	
wall bedstraw	*Galium parisiense*	X

Common Name	Scientific Name	Native (N)/ Non-native (X)
watercress	*Nasturtium officinale*	N
Western redbud	*Cercis occidentalis*	N
White stemmed filaree	*Erodium brachycarpum*	X
wild pea	*Pisum sativum elatius*	X
wildoats	*Avena fatua*	X (Invasive)[1]
yellow starthistle	*Centaurea solstitialis*	X (Invasive)[1,2,3]

* CNPS sensitive
[1] California Invasive Plant Council (Cal-IPC) Moderate or High invasive rating
[2] Sacramento County Agricultural Commission High or Watch list rating
[3] California Department of Food and Agriculture (CDFA) List C rating

3.1.3.3. Wildlife Species Observed

Table 2 represents wildlife species observed within the BSA through direct observation or sign.

Table 2: Animal Species Observed within the BSA

Common Name	Scientific Name	Native (N) / Non-Native (X)
Birds		
American Coot	*Fulica americana*	N
American Pipit	*Anthus rubescens*	N
American Robin	*Turdus migratorius*	N
Anna's Hummingbird	*Calypte anna*	N
Barn Swallow	*Hirundo rustica*	N
Black Phoebe	*Sayornis nigricans*	N
Black-crowned Night-Heron	*Nycticorax nycticorax*	N
Bushtit	*Psaltriparus minimus*	N
California Quail	*Callipepla californica*	N
California Scrub-Jay	*Aphelocoma californica*	N
Canada Goose	*Branta canadensis*	N
Cliff Swallow	*Petrochelidon pyrrhonota*	N
Common Gallinule	*Gallinula galeata*	N
Cooper's Hawk	*Accipiter cooperii*	N
Double-crested Cormorant	*Phalacrocorax auritus*	N
European Starling	*Sturnus vulgaris*	X
Great Egret	*Ardea alba*	N
Green Heron	*Butorides virescens*	N
House Finch	*Haemorhous mexicanus*	X
House Sparrow	*Passer domesticus*	X
Killdeer	*Charadrius vociferus*	N
Mallard	*Anas platyrhynchos*	N
Mourning Dove	*Zenaida macroura*	N
Northern Mockingbird	*Mimus polyglottos*	N
Prairie Falcon	*Falco mexicanus*	N

Red-shouldered Hawk	*Buteo lineatus*	N
Red-tailed Hawk	*Buteo jamaicensis*	N
Red-winged Blackbird	*Agelaius phoeniceus*	N
Ring-necked Pheasant	*Phasianus colchicus*	N
Rock Pigeon (Feral Pigeon)	*Columba livia*	N
Savannah Sparrow	*Passerculus sandwichensis*	N
Snowy Egret	*Egretta thula*	N
Song Sparrow	*Melospiza melodia*	N
Swainson's Hawk	*Buteo swainsoni*	N
Turkey Vulture	*Cathartes aura*	N
Western Bluebird	*Sialia mexicana*	N
White-crowned Sparrow	*Zonotrichia leucophrys*	N
White-tailed Kite	*Elanus leucurus*	N
Wild Turkey	*Meleagris gallopavo*	N
Wilson's Snipe	*Gallinago delicata*	N
Yellow-rumped Warbler	*Setophaga coronata*	N
Reptiles		
Western fence lizard	*Sceloporus occidentalis*	N
Western pond turtle	*Emys marmorata*	N

3.1.3.4. Invasive Species

The BSA is located within the Sacramento Valley Floristic Providence and contains many weed species identified as being invasive. Based on the California Invasive Plant Council (Cal-IPC) Inventory Database, the following non-native species observed during biological surveys are listed with an invasive rating of moderate or high: black mustard (*Brassica nigra*), bullthistle (*Cirsium vulgare*), Chinese tallow (*Triadica sebifera*), fountain grass (*Pennisetum setaceum*), foxtail barley (*Hordeum murinum*), Himalayan blackberry (*Rubus armeniacus*), Italian rye grass (*Festuca perennis*), Italian thistle (*Carduus pycnocephalus*), Mediterranean barley (*Hordeum marinum gussoneanum*), medusa head (*Taeniatherum caput-medusae*), Mexican fan palm (*washingtonia robusta*), pennyroyal (*Mentha pulegium*), ripgut brome (*Bromus diandrus*), sweet fennel (*Foeniculum vulgare*), wildoats (*Avena fatua*), and yellow starthistle (*Centaurea solstitialis*). The following invasive species were observed within the BSA and have an invasive rating of limited: common stork's bill (*Erodium cicutarium*), curled dock (*Rumex crispus*), cut-leaved geranium (*Geranium dissectum*), English plantain (*Plantago lanceolate*), jointed charlock (*Raphanus sativus*), milk thistle (*Silybum marianum*), rose clover (*Trifolium hirtum*), soft chess brome (*Bromus hordeaceus*), Tasmanian blue gum (*Eucalyptus globulus*), and tumbleweed (*Salsola tragus*) (Cal-IPC 2020).

3.1.3.5. Habitat Connectivity

According to CDFW, there are no California Essential Habitat Connectivity areas within the BSA. However, Whitehouse Creek and Laguna Creek may be used by native wildlife as a migration corridor, leading east to west toward the Sacramento River and Stone Lakes National Wildlife Refuge. The Project does not anticipate any impoundments or barriers to native wildlife migration within Whitehouse Creek or Laguna Creek.

3.2. Regional Species, Habitats, and Natural Communities of Concern

Plant and animal species are considered to have special-status if they have been listed as such by Federal or State agencies or by one or more special interest groups, such as CNPS. Special-status species are protected under FESA, CESA, or CDFW regulations. Prior to the field surveys, queries of the USFWS, CNDDB, NOAA Fisheries and CNPS databases were conducted to identify species protected under the FESA, CESA or CDFW regulations with potential of occurrence in the Project vicinity. Table 3 contains a comprehensive list of the regional species of special concern as listed by USFWS, CNDDB, NOAA Fisheries or CNPS online databases.

After biological surveys were conducted, each species' specific habitat requirements were compared to actual site conditions and the potential for occurrence was then determined. The queries identified 51 species of special-status plant and wildlife species, 3 of which were identified as present during biological surveys. The species listed below are those determined to be present, determined to have a high potential, or determined to have a low to moderate potential to occur within the BSA. The remaining species listed in Table 3 are presumed absent from the BSA.

<u>Present</u>

- Swainson's hawk (*Buteo swainsoni*)
- White-tailed kite (*Elanus leucurus*)
- Western pond turtle (*Emys marmorata*)

<u>High Potential</u>

- Burrowing owl (*Athena cunicularia*)
- Sanford's arrowhead (*Sagittaria sanfordii*)

<u>Low to Moderate Potential</u>

- Song sparrow "Modesto population" (*Melospiza melodia*)
- Tricolored blackbird (*Agelaius tricolor*)
- Yellow-headed blackbird (*Xanthocephalus xanthocephalus*)
- Vernal pool fairy shrimp (*Branchinecta lynchi*)
- Vernal pool tadpole shrimp (*Lepidurus packardi*)
- Boggs Lake hedge-hyssop (*Gratiola heterosepala*)
- Dwarf downingia (*Downingia pusilla*)
- Legenere (*Legenere limosa*)
- Wolly rose-mallow (*Hibiscus lasiocarpos var. occidentalis*)
- Giant garter snake (GGS) (*Thamnophis gigas*)
- Western spadefoot (*Spea hammondii*)

Table 3: Special Status Species with Potential to Occur in the Project Vicinity

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
Amphibian Species						
California red-legged frog	*Rana draytonii*	Fed: State: CDFW:	T -- SSC	Inhabits lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development and must have access to estivation habitat; estivation occurs late summer-early winter. Breeds from March-July January-July Occurs from elevations near sea level to 5,200 ft.	A	**Presumed Absent:** The BSA does contain potentially suitable permanent deep-water habitat within Laguna Creek. However, the presence of bull frog and predatory fish within Laguna Creek would preclude the species using this habitat. Additionally, the BSA does not contain suitable upland habitat. The nearest recent occurrence is approximately 31 miles from the BSA. Due to the presence of predatory fish and bull frogs, and the distance to presumed extant occurrences the species is presumed absent from the BSA.
California tiger salamander	*Ambystoma californiense*	Fed: State: CDFW:	T T SSC	Inhabits annual grasslands and the grassy understory of Valley-Foothill Hardwood communities. Requires underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding.	A	**Presumed Absent:** The BSA does contain potentially suitable vernal pool habitat. However, the BSA does not contain suitable upland hardwood woodland habitat for the species. The nearest recent occurrence is approximately 15 miles from the BSA, within a conservation bank. Due to the lack of suitable upland habitat and the distance from known extant occurrences, the species is presumed absent from the BSA.
Western spadefoot	*Spea hammondii*	Fed: State: CDFW:	-- -- SSC	Inhabits burrows within grassland and valley foothill hardwood woodland communities. Requires vernal, shallow, temporary pools formed by heavy winter rains for reproduction. Breeds late winter-March.	HP	**Low to Moderate Potential:** The BSA does contain potentially suitable upland estivation, and aquatic vernal pool habitat for the species. The nearest presumed extant occurrence of the species is approximately 10 miles from the BSA. Due to the presence of potentially suitable habitat and the distance to local presumed extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

Bird Species						
bank swallow	*Riparia riparia*	Fed: State: CDFW:	-- T --	A migratory colonial nester inhabiting lowland and riparian habitats west of the deserts during spring - fall. Majority of current breeding populations occur along the Sacramento and Feather rivers in the north Central Valley. Requires vertical banks or cliffs with fine textured/sandy soils for nesting (tunnel and burrow excavations). Nests exclusively near streams, rivers, lakes or the ocean. Breeds May-July.	A	**Presumed Absent:** The BSA does not contain suitable vertical banks or cliffs for nesting, nor does Laguna Creek to the east or west have this type of habitat. The nearest recent presumed extant occurrence is approximately 11 miles north of the BSA along the American River. Due to the lack of suitable habitat and the distance from presumed extant occurrences, the species is presumed absent from the BSA.
burrowing owl	*Athena cunicularia*	Fed: State: CDFW:	-- -- SSC	Species inhabits arid, open areas with sparse vegetation cover such as deserts, abandoned agricultural areas, grasslands, and disturbed open habitats. Requires friable soils for burrow construction (Below 5,300 feet).	HP	**High Potential:** The BSA does contain potential suitable habitat for the species, and mammal burrows in friable soils were observed during the April 4, 2018 biological surveys; however, no species were observed. The nearest recent occurrence is approximately 0.5 mile from the BSA. The species is considered to have a high potential of occurring within the BSA due to the presence of suitable habitat and close proximity to recent occurrences.
California black rail	*Laterallus jamaicensis coturniculus*	Fed: State: CDFW:	-- T FP	A rare yearlong California resident of brackish, and fresh emergent wetlands in delta and coastal locations, including the San Francisco Bay area, Sacramento-San Joaquin Delta, Morro Bay, the Salton Sea, and lower Colorado River; extirpated from San Diego County and the majority of coastal southern California. Occurs in tidal emergent wetlands dominated by pickleweed, in brackish marshes dominated by bulrushes with pickleweed and in freshwater wetlands dominated by bulrushes, cattails, and saltgrass. Species prefers high wetland areas, away from areas experiencing fluctuating water levels. Requires vegetation providing adequate overhead cover for nesting. Eggs are laid March-June.	A	**Presumed Absent:** The BSA does not contain suitable delta or coastal brackish emergent wetlands, and the BSA is not located in the species known range within the San Francisco Bay Area or Sacramento-San Joaquin Delta. The nearest presumed extant occurrence of the species is approximately 7 miles from the BSA within the Stone Lakes National Wildlife Refuge. Due to the lack of suitable habitat delta/coastal wetland habitat and the distance to presumed extant occurrences, the species is presumed absent from the BSA.

Golden eagle	*Aquila chrysaetos*	Fed: State: CDFW:	-- -- FP	Inhabits rolling foothills, mountain areas, sage-juniper flats, and desert communities. Requires open terrain for hunting, often utilizing rolling foothills and mountain terrain, wide arid plateaus deeply cut by streams and canyons, open mountain slopes, and cliffs and rock outcrops, grasslands and early successional stages of forest and shrub habitats. Nests on cliffs of all heights and in large trees in open areas; may reuse previous nest sites. Breeds from late January through August (0-11,500 feet).	A	**Presumed Absent:** The BSA does not contain suitable foothills, mountain areas, sage-juniper flats or desert communities. The nearest extant occurrence of the species is approximately 8 miles from the BSA. Due to the lack of potentially suitable habitat and the distance to known extant occurrences, the species is presumed absent from the BSA.
least bell's vireo	*Vireo bellii pusillus*	Fed: State: CDFW:	E E --	Summer resident of southern California inhabiting low riparian habitats in the vicinity of water and dry river bottoms. Prefers willows, baccharis, mesquite and other low, dense vegetation as nesting sites (below 2000 feet).	A	**Presumed Absent:** The BSA does not contain potentially suitable riparian habitats with willows, baccharis, mesquite or other low, dense vegetation. The nearest known extant occurrence of the species is approximately 13.5 miles from the BSA within the Sacramento/Yolo Bypass. Due to the lack of suitable habitat and distance from known extant occurrences the species is presumed absent from the BSA.
purple martin	*Progne subis*	Fed: State: CDFW:	-- -- SSC	Present in California as a summer migrant, arriving in March and departing by late September. Inhabits valley foothill and montane hardwood/hardwood-conifer, coniferous habitats and riparian habitats. Nests in tall, old, isolated trees or snags in open forest or woodland and in proximity to a body of water. Frequently nests within former woodpecker cavities; may nest in human-made structures such as nesting boxes, under bridges and in culverts. Needs abundant aerial insect prey. Breeds April-August.	A	**Presumed Absent:** The BSA does not contain potentially suitable valley foothill and montane hardwood/hardwood-conifer, coniferous or riparian habitats. The nearest known extant occurrence of the species is approximately 8.5 miles from the BSA. Due to the lack of suitable habitat and distance from known extant occurrences the species is presumed absent from the BSA.
Song sparrow ("Modesto" population)	*Melospiza melodia*	Fed: State: CDFW:	-- -- SSC	An endemic bird found exclusively in the north-central portion of the Central Valley, with highest densities in the Butte Sink and Sacramento-San Joaquin River Delta. The species is usually found in open brushy habitats, along the borders	HP	**Low to Moderate Potential:** The BSA does contain potential suitable habitat for the species, including fresh emergent wetland areas within and adjacent to Laguna Creek. These habitats are moderately dense and are dominated by tules and cattails, which the

				of ponds or streams, abandoned pastures, desert washes, thickets, or woodland edges. In addition, there is a strong affinity for emergent freshwater marshes dominated by tules and cattails, riparian willow thickets, and valley oak forests with a blackberry understory. Breeds from March through August. Nest found in base of shrubs or clumps of grass.		species is known to inhabit for nesting and foraging. The nearest recent occurrence is approximately 5 miles from the BSA within the Stone Lakes National Wildlife Refuge. Due to the presence of potentially suitable nesting and foraging habitat and the proximity to known extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.
Swainson's hawk	*Buteo swainsoni*	Fed: State: CDFW:	-- T --	Inhabits grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, alfalfa or grain fields that support a stable rodent prey base. Breeds March to late August.	HP	**Present:** The BSA does have potential suitable foraging and nesting habitat for the species. The species was observed foraging within the BSA during the April 4, 2018 biological survey. Due to the presence of suitable foraging and nesting habitat, and the observance of the species during the biological survey, the species is considered present within the BSA.
Tricolored blackbird	*Agelaius tricolor*	Fed: State: CDFW:	-- CE SSC	Inhabits freshwater marsh, swamp and wetland communities, but may utilize agricultural or upland habitats that can support large colonies, often in the Central Valley area. Requires dense nesting habitat that is protected from predators, is within 3-5 miles from a suitable foraging area containing insect prey and is within 0.3 miles of open water. Suitable foraging includes wetland, pastureland, rangeland, at dairy farms, and some irrigated croplands (silage, alfalfa, etc.). Nests mid-march - early August, but may extend until October/November in the Sacramento Valley region.	HP	**Low to Moderate Potential:** The BSA does contain potentially suitable nesting and foraging habitat; however, the species was not observed during the April 4, 2018 biological surveys. There are 6 presumed extant occurrences of the species within 5 miles of the BSA. Due to the presence of suitable nesting and foraging habitat and the number of local extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	Fed: State: CDFW:	T E --	Species inhabits riparian forests, along broad, lower flood bottoms of larger river systems. Nests in large blocks of riparian jungles often mixed with cottonwoods. Nesting appears to be preferred in riparian forest habitats with a dense understory; requires water near nesting site. Breeds June- August.	A	**Presumed Absent:** The BSA does not contain suitable dense riparian forest habitat for the species. The nearest presumed extant occurrence is approximately 13.5 miles from the BSA. Due to the lack of suitable habitat and the distance from extant occurrences, the species is presumed absent from the BSA.
White-tailed kite	*Elanus leucurus*	Fed: State: CDFW:	-- -- FP	Inhabits rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Prefers open grasslands, meadows or marshes for foraging close to isolated, dense-topped trees for nesting and perching. Breeds February- October.	HP	**Present:** The BSA does have potential suitable foraging and nesting habitat for the species. The species was observed foraging within the BSA during the April 4, 2018 biological survey. Due to the presence of suitable foraging and nesting habitat, and the observance of the species during the biological survey, the species is considered present within the BSA.
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	Fed: State: CDFW:	-- -- SSC	Occurs primarily as a migrant and summer resident from April to early October. The species almost exclusively nests in marshes with tall emergent vegetation such as tules (Scirpus sp.) or cattails (Typha sp.), in open areas and edges over water at depths typically ranging from 1-4 feet deep. Frequently breeds within marshes edges of lakes, reservoirs, or larger ponds. Breeds from April-July.	HP	**Low to Moderate Potential:** The BSA does contain potential suitable habitat for the species, including fresh emergent wetland areas within and adjacent to Laguna Creek. These habitats are moderately dense and are dominated by tules and cattails, which the species is known to inhabit for nesting and foraging. The nearest recent occurrence is approximately 6 miles from the BSA within the Stone Lakes National Wildlife Refuge. Due to the presence of potentially suitable nesting and foraging habitat and the proximity to known extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.
Fish Species						
Central Valley Steelhead	*Oncorhynchus mykiss irideus*	Fed: State: CDFW:	T -- --	Spawning occurs in small tributaries on coarse gravel beds in riffle areas. Central Valley steelhead are found in the Sacramento River system; the principal remaining wild populations spawn annually in Deer and Mill Creeks in Tehama County, in the lower Yuba River, a small population in the lower Stanislaus River.	A	**Presumed Absent:** The BSA does not contain suitable habitat for the species. The species does not populate Laguna Creek or Whitehouse Creek. Levee barriers from the Sacramento River to Laguna Creek prevent passage of the species.

Chinook salmon – Central Valley spring-run ESU	*Oncorhynchus tshawytscha pop. 6*	Fed: State: CDFW:	T T --	Spring-run Chinook enter the Sacramento-San Joaquin River system to spawn, requiring larger gravel particle size and more water flow through their redds than other salmonids. Remaining runs occur in Butte, Mill, Deer, Antelope, and Beegum Creeks, tributaries to the Sacramento River. Known to occur in Siskiyou and Trinity counties.	A	**Presumed Absent:** The BSA does not contain suitable habitat for the species. The species does not populate Laguna Creek or Whitehouse Creek. Levee barriers from the Sacramento River to Laguna Creek prevent passage of the species.
Chinook salmon – Sacramento River winter-run ESU	*Oncorhynchus tshawytscha pop. 7*	Fed: State: CDFW:	E E --	Winter-run Chinook are currently restricted within the Sacramento River below Keswick dam; species does not spawn in tributaries. Species requires cold water over gravel beds to spawn.	A	**Presumed Absent:** The BSA does not contain suitable habitat for the species. The species does not populate Laguna Creek or Whitehouse Creek. Levee barriers from the Sacramento River to Laguna Creek prevent passage of the species.
Delta smelt	*Hypomesus tanspacificus*	Fed: State: CDFW:	T -- --	Occurs within the Sacramento-San Joaquin Delta and seasonally within the Suisun Bay, Carquinez Strait and San Pablo Bay. Most often occurs in partially saline waters.	A	**Presumed Absent:** The BSA does not contain suitable saline waters for the species, and it was confirmed through CNDDB that the BSA is outside the range of the species.
Longfin smelt	*Spirinchus thaleichthys*	Fed: State: CDFW:	C T SSC	Within California, occurs slightly upstream from Rio Vista (on the Sacramento River in the Delta) including the Cache Slough region and Medford Island (on the San Joaquin River in the Delta) through Suisun Bay and Suisun Marsh, the San Pablo Bay, the main San Francisco Bay, South San Francisco Bay,the Gulf of the Farallones, Humboldt Bay, and the Eel river estuary & local coastal areas. Resides in California and are primarily an anadromous estuarine species that can tolerate salinities ranging from freshwater to nearly pure seawater. Their spatial distribution within a bay or estuary is seasonally variable. Longfin smelt may also make daily migrations; remaining deep during the day and rising to the surface at night.	A	**Presumed Absent:** The BSA does not contain suitable saline waters for the species, and it was confirmed through CNDDB that the BSA is outside the range of the species.

Sacramento perch	*Archoplites interruptus*	Fed: State: CDFW:	-- -- SSC	Inhabits sloughs, lakes, and slow moving rivers of the Central Valley. Prefers turbid lakes, reservoirs and ponds warmed by summer heat and absent of plants; may occasionally occur in clear water among beds of aquatic vegetation. Species tolerates high temperatures, high salinities, high turbidity, and low water clarity. Young require aquatic and overhanging vegetation for cover. Spawns March-August in water temperatures between 64-84°F	A	**Presumed Absent:** The BSA does contain potentially suitable slow-moving creek/river habitat; however, the species is not known to occur within this waterway and the only know extant occurrence is within Lake Greenhaven from 1973. Laguna Creek has no connection with Lake Greenhaven, and no other known populations were identified within the USGS 7.5-minite 9-quadrangles search. Due to the lack of connection to waterbodies of known extant occurrences the species is presumed absent from the BSA.
Sacramento splittail	*Pognichthys macrolepidotus*	Fed: State: CDFW:	-- -- SSC	Historically inhabited low moving rivers, sloughs, and alkaline lakes of the Central Valley; now restricted to the Delta, Suisun Bay and associated marshes. Species is adapted to fluctuating environments with tolerance to water salinities from 10-18 ppt., low oxygen levels (< 1.0 mg/L) and temperatures of 41-75°F. Spawns late February- early July, with a peak in March-April; requires flooded vegetation for spawning activity and protective cover for young.	A	**Presumed Absent:** The BSA does not contain suitable habitat for the species. Laguna Creek is outside the Delta and Suisun Bay extant of the species.
Invertebrate Species						
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	Fed: State: CDFW:	T -- --	Species requires elderberry shrubs as host plants. Typically occurs in moist valley oak woodlands associated with riparian corridors in the lower Sacramento River and upper San Joaquin River drainages. (Sea level-3,000ft)	A	**Presumed Absent:** The BSA does not contain potentially suitable riparian habitat, nor were there any requisite elderberry host shrubs observed within the BSA during the April 4, 2018 biological survey. The nearest presumed extant occurrence of the species is approximately 5.5 miles from the BSA. Due to the lack of potentially suitable riparian habitat or host elderberry shrubs, the species is presumed absent from the BSA.

Vernal pool fairy shrimp	*Branchinecta lynchi*	Fed: State: CDFW:	T -- --	In California, species inhabits portions of Tehama county, south through the Central Valley, and scattered locations in Riverside County and the Coast Ranges. Species is associated with smaller and shallower cool-water vernal pools approximately 6 inches deep and short periods of inundation. In the southernmost extremes of the range, the species occurs in large, deep cool-water pools. Inhabited pools have low to moderate levels of alkalinity and total dissolved solids. The shrimp are temperature sensitive, requiring pools below 50 F to hatch and dying within pools reaching 75 F. Young emerge during cold-weather winter storms.	HP	**Low to Moderate Potential:** The BSA does contain potentially suitable vernal pool habitat for the species. The nearest presumed extant occurrence of the species is approximately 4 miles from the BSA. A protocol level survey (ECORP 2007) was conducted and found no federally-listed crustaceans were found to occur in any of the pools within the BSA. However, two Biological Opinions issued from USFWS on the directly adjacent projects (Laguna Creek Trail – Camden Spur North and South, 2015; and East Lawn Expansion Project, 2012), concurred that even though the no federally-listed crustaceans were found, the project may affect, but is not likely to adversely affect fairy shrimp or tadpole shrimp. Due to the presence of potentially suitable habitat and the distance to known extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.
Vernal pool tadpole shrimp	*Lepidurus packardi*	Fed: State: CDFW:	E -- --	Inhabits vernal pools and swales containing clear to highly turbid waters such as pools located in grass bottomed swales of unplowed grasslands, old alluvial soils underlain by hardpan, and mud-bottomed pools with highly turbid water.	HP	**Low to Moderate Potential:** The BSA does contain potentially suitable vernal pool habitat for the species. The nearest presumed extant occurrence of the species is approximately 4 miles from the BSA. A protocol level survey (ECORP 2007) was conducted and found no federally-listed crustaceans were found to occur in any of the pools within the BSA. However, two Biological Opinions issued from USFWS on the directly adjacent projects (Laguna Creek Trail – Camden Spur North and South, 2015; and East Lawn Expansion Project, 2012), concurred that even though the no federally-listed crustaceans were found, the project may affect, but is not likely to adversely affect fairy shrimp or tadpole shrimp. Due to the presence of potentially suitable habitat and the distance to known extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

Mammal Species						
American badger	*Taxidea taxus*	Fed: State: CDFW:	-- -- SSC	Prefers treeless, dry, open stages of most shrub and herbaceous habitats with friable soils and a supply of rodent prey. Species also inhabits forest glades and meadows, marshes, brushy areas, hot deserts, and mountain meadows. Species maintains burrows within home ranges estimated between 338-1,700 acres, dependent on seasonal activity. Burrows are frequently re-used, but new burrows may be created nightly. Species is somewhat tolerant of human activity, but is sensitive to automobile mortality, trapping, and persistent poisons (up to 12,000 feet).	HP	**Presumed Absent:** The BSA does contain suitable grassland habitat for the species; however, the BSA is surrounded by residential development and badgers are highly susceptible to vehicle mortality. Therefore, it is unlikely the species would use this are for foraging or den sites. The nearest presumed extant occurrence is approximately 8 miles from the BSA. Due to the high density of residential development and distance to recent extant occurrences, the species is presumed absent from the BSA.
Reptile Species						
Giant Garter Snake	*Thamnophis gigas*	Fed: State: CDFW:	T -- SSC	Inhabits marsh, swamp, wetland (including agricultural wetlands), sloughs, ponds, rice fields, low gradient streams and irrigation/drainage canals adjacent to uplands. Ideal habitat contains both shallow and deep water with variations in topography. Species requires adequate water during the active season (April-November), emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat and mammal burrows estivation. Requires grassy banks and openings in waterside vegetation for basking and higher elevation uplands for cover and refuge from flood waters during winter dormant season.	HP	**Low to Moderate Potential:** The BSA does contain potentially suitable permanent aquatic habitat, and upland habitat. The closest known occurrence of the species along Laguna Creek is approximately 1 mile west of the BSA (1987). However, this occurrence is characterized as possibly extirpated. The nearest presumed extant occurrence is approximately 4.3 miles west of the BSA and is separated from the BSA by high density development. Additionally, a Biological Opinion issued from USFWS on the directly adjacent project (Laguna Creek Trail – Camden Spur North and South, 2015), concurred that due to heavy residential development the project is not likely to adversely affect the snake. Due to the presence of potentially suitable habitat and the distance to known extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA, and a Biological Assessment will be prepared for potential impacts to aquatic and upland habitats during the Section 404 permitting process through USACE federal nexus.

Western pond turtle	*Emys marmorata*	Fed: State: CDFW:	-- -- SSC	A fully aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Requires basking sites and suitable upland habitat (sandy banks or grassy open field) for reproduction (sea level to 4,690 feet).	HP	**Present:** The BSA does contain suitable aquatic and upland habitat for the species. The species was observed during the April 24-26, 2018 jurisdictional delineation, at the confluence of Whitehouse Creek and Laguna Creek. Due to the presence of suitable habitat and the observation of the species during the jurisdictional delineation, the species is considered present within the BSA.
Plant Species						
Ahart's dwarf rush	*Juncus leispermus var. aharti*	Fed: State: CNPS:	-- -- 1B.2	An annual herb inhabiting grassland swales, gopher mounds and vernal pool margins of mesic valley and foothill grassland communities. Flowers March – May (98-751 feet).	A	**Presumed Absent:** The BSA does contain potentially suitable grassland and vernal pool habitat; however, the BSA is below the species known elevation range, and the nearest presumed extant occurrence is approximately 10 miles from the BSA. The species is presumed absent from the BSA.
Boggs Lake hedge-hyssop	*Gratiola heterosepala*	Fed: State: CNPS:	-- -- 1B.2	An annual herb inhabiting clay soils and shallow waters of marshes and swamps, lake margins, and vernal pools. Flowers April-August (33-7,792 feet).	HP	**Low to Moderate Potential:** The BSA does contain potentially suitable shallow water and vernal pool habitat. The nearest presumed extant occurrence is approximately 3 miles from the BSA. Due to the presence of potentially suitable habitat and the proximity to the extant occurrence the species has a low to moderate potential to occur within the BSA.
Bolander's water-hemlock	*Cicuta maculata var. bolanderi*	Fed: State: CNPS:	-- -- 2B.2	A perennial herb inhabiting coastal marshes and swamps with fresh or brackish water. Blooms July-September (6-660 feet).	A	**Presumed Absent:** The BSA does not contain suitable coastal marsh or brackish waters, and the nearest presumed extant occurrence is approximately 13 miles from the BSA within the Sacramento Delta. Due to the lack of suitable habitat and distance to presumed extant occurrences the species is presumed absent from the BSA.
bristly sedge	*Carex comosa*	Fed: State: CNPS:	-- -- 2B.1	A perennial herb inhabiting coastal prairies, marshes and swamps along lake margins, and valley foothill grasslands communities. Blooms May-September (0-2,050 feet).	A	**Presumed Absent:** The BSA does not contain suitable coastal prairies, marshes, swamps, or valley foothill grassland communities. The nearest presumed extant occurrence of the species is approximately 7 miles from the BSA. Due to the lack of potentially suitable habitat and the distance to extant populations the species is presumed absent from the BSA.

Delta mudwort	*Limosella australis*	Fed: State CNPS:	-- -- 1B.2	A perennial stoloniferous herb inhabiting low elevation muddy banks of riparian scrub, freshwater or brackish marshes and swamps, and intertidal flats. Flowers May-August (0 - 32feet).	HP	**Presumed Absent:** The BSA does contain suitable freshwater emergent marsh; however, the nearest presumed extant occurrence of the species is approximately 12 miles from the BSA. Due to the distance to extant populations the species is presumed absent from the BSA.
Delta tule pea	*Lathyrus jepsonii var jepsonii*	Fed: State: CNPS:	-- -- 1B.2	A perennial herb inhabiting freshwater and brackish marshes of coastal and estuarine communities. Flowers May - August (0 - 98 feet).	A	**Presumed Absent:** The BSA does not contain suitable coastal and estuarine communities. The nearest presumed extant occurrence of the species is approximately 12 miles from the BSA. Due to the lack of potentially suitable habitat and the distance to extant populations the species is presumed absent from the BSA.
dwarf downingia	*Downingia pusilla*	Fed: State: CNPS:	-- -- 2B.2	An annual herb inhabiting vernal pools and mesic valley and foothill grassland communities. Flowers March-May (3-1,460 feet).	HP	**Low to Moderate Potential:** The BSA does contain potentially suitable vernal pool habitat. The nearest presumed extant occurrence is approximately 2 miles from the BSA. Due to the presence of potentially suitable habitat and the proximity to the extant occurrences the species has a low to moderate potential to occur within the BSA.
Ferris' milk-vetch	*Astragalus tener var. ferrisiae*	Fed: State: CNPS:	-- -- 1B.1	An annual herb inhabiting vernally mesic meadows and seeps and sub-alkaline flats within valley and foothill grassland communities. Known only from six extant occurrences. Flowers April - May (6-246 feet).	A	**Presumed Absent:** The BSA does contain valley grasslands; however, the web soil survey report (NCRS 2018) for the Project does not indicate any of the soils within the BSA to be highly alkaline. Therefore, suitable soils for the species do not exist within the BSA. The nearest presumed extant occurrence is approximately 15 miles from the BSA. Due to the lack of suitable soils and the distance from extant occurrences, the species is presumed absent from the BSA.
Heckard's pepper-grass	*Lepidium latipes var. heckardii*	Fed: State: CNPS:	-- -- 1B.2	An annual herb found in alkaline flats within valley or foothill grasslands. Flowers March-May (0 - 660 feet).	A	**Presumed Absent:** The BSA does contain valley grasslands; however, the web soil survey report (NCRS 2018) for the Project does not indicate any of the soils within the BSA to be highly alkaline. Therefore, suitable soils for the species do not exist within the BSA. The nearest presumed extant occurrence is approximately 7 miles from the BSA. Due to the lack of suitable soils and the

						distance from extant occurrences, the species is presumed absent from the BSA.
legenere	*Legenere limosa*	Fed: State: CNPS:	-- -- 1B.1	An annual herb inhabiting wet areas, vernal pools, and ponds. Flowers May-June (0-2,887 feet).	HP	**Low to Moderate Potential:** The BSA does contain potentially suitable wet areas and vernal pool habitat. The nearest presumed extant occurrence is approximately 1.5 miles from the BSA. Due to the presence of potentially suitable habitat and the proximity to the presumed extant occurrences the species has a low to moderate potential to occur within the BSA.
marsh skullcap	*Scutellaria galericulata*	Fed: State CNPS:	-- -- 2B.2	A perennial rhizomatous herb inhabiting wet sites and streambanks of lower montane coniferous forest, mesic meadows and seeps, and marsh and swamp communities. Flowers June-September (0 -6,889 feet).	A	**Presumed Absent:** The BSA does not contain suitable lower montane coniferous forest or mesic meadow habitat. The nearest presumed extant occurrence of the species is approximately 12 miles from the BSA. Due to the lack of potentially suitable habitat and the distance to extant populations the species is presumed absent from the BSA.
Mason’s lilaeopsis	*Lilaeopsis masonii*	Fed: State: CNPS:	-- -- 1B.2	A perennial rhizomatous herb found exclusively in the Sacramento-San Joaquin River Delta and San Francisco Bay. Found in low elevation freshwater and brackish mashes adjacent to surface water. Flowers June - August (0 - 100 feet).	A	**Presumed Absent:** The BSA is not located within the Sacramento-San Joaquin River Delta or San Francisco Bay area. The nearest presumed extant occurrence of the species is approximately 10 miles from the BSA within the Sacramento Delta channel. Due to the location of the BSA and the distance to extant populations, the species is presumed absent from the BSA.
Northern California black walnut	*Juglans hindsii*	Fed: State: CNPS:	-- -- 1B.1	A deciduous tree inhabiting along streams and slopes within riparian forest and riparian woodland communities. Flowers April-May (0-1,444 feet).	A	**Presumed Absent:** The BSA does not contain suitable riparian forest or woodland communities. The nearest presumed extant populations of the species exist along the Sacramento River, approximately 10 miles from the BSA. Due to the lack of suitable habitat and the distance from extant occurrences, the species is presumed absent from the BSA.

Pappose tarplant	*Centromadia parryi ssp. parryi*	Fed: State: CNPS:	-- -- 1B.2	An annual herb inhabiting chaparral, coastal scrub, meadows, seeps, marshes, swamps (coastal salt), and valley foothill grasslands often with alkaline soils. Flowers May - November (0 - 1377 ft.).	A	**Presumed Absent:** The BSA does contain potentially suitable valley grassland habitat; however, the web soil survey report (NCRS 2018) for the Project does not indicate any of the soils within the BSA to be highly alkaline. Therefore, suitable soils for the species do not exist within the BSA. The nearest presumed extant occurrence is approximately 9 miles from the BSA. Due to the lack of suitable soils and the distance from extant occurrences, the species is presumed absent from the BSA.
Peruvian dodder	*Cuscuta obtusiflora var. glandulosa*	Fed: State: CNPS:	-- -- 2B.2	An annual parasitic vine inhabiting freshwater marsh communities on herbs such as Alternanthera sp., Dalea sp., Lythrum sp., Polygonum sp., and Xanthium sp. Flowers July - October (49-1,640 feet).	HP	**Presumed Absent:** The BSA does contain potentially suitable habitat; however, the species has not been documented since the 1940's within California, of which one occurrence is noted as questionable by CNDDB within approximately 3 miles from the BSA.
Sacramento Orcutt grass	*Orcuttia viscida*	Fed: State: CNPS:	E -- 1B.2	An annual herb inhabiting vernal pools. Flowers April-July (98-328 feet).	A	**Presumed Absent:** The BSA does contain potentially suitable vernal pool habitat; however, the BSA is below the known elevation range of the species. The nearest presumed extant population is approximately 11 miles from the BSA with the species known elevation range. Due to being outside of the species known elevation range, the species is presumed absent from the BSA.
Sanford's arrowhead	*Sagittaria sanfordii*	Fed: State: CNPS:	E -- 1B.2	A perennial rhizomatous herb inhabiting freshwater marshes, swamps, ponds and ditches. Flowers May-October (0-2,132 feet).	HP	**High Potential:** The BSA does contain potentially suitable freshwater marsh and creek channels. The nearest presumed extant occurrence of the species is approximately 1 mile from the BSA. Due to the presence of potentially suitable habitat and the proximity to CNDDB presumed extant occurrences, the species is considered to have a high potential to occur within the BSA.
saline clover	*Trifolium hydrophilum*	Fed: State CNPS:	-- -- 1B.2	An annual herb inhabiting mesic, alkaline soils of salt marsh, marshes and swamps, vernal pools, and valley and foothill grasslands. Flowers April-June (0 - 1,000 feet).	A	**Presumed Absent:** The BSA does contain potentially suitable marsh, vernal pool and valley grassland habitat; however, the web soil survey report (NCRS 2018) for the Project does not indicate any of the soils within the BSA to be highly alkaline. Therefore, suitable

						soils for the species do not exist within the BSA. The nearest presumed extant occurrence is approximately 10 miles from the BSA. Due to the lack of suitable soils and the distance from extant occurrences, the species is presumed absent from the BSA.
side-flowering skullcap	*Scutellaria lateriflora*	Fed: State CNPS:	-- -- 2B.2	A perennial rhizomatous herb inhabiting mesic meadow and seeps and marsh and swamp communities. Known in CA from only three occurrences in the Sacramento-San Joaquin Delta. Flowers July (0-1,640 feet).	A	**Presumed Absent:** The BSA is not located within the Sacramento-San Joaquin River Delta. The nearest presumed extant occurrence of the species is approximately 10 miles from the BSA within the Sacramento Delta channel. Due to the location of the BSA and the distance to extant populations, the species is presumed absent from the BSA.
slender Orcutt grass	*Orcuttia tenuis*	Fed: State CNPS:	E -- --	An annual herb inhabiting vernal pools, often within gravelly soils. Flowers May-October (115-5,774 feet).	A	**Presumed Absent:** The BSA does contain potentially suitable vernal pool habitat; however, the BSA is below the known elevation range of the species. The nearest presumed extant population is approximately 6 miles from the BSA with the species known elevation range. Due to being outside of the species known elevation range, the species is presumed absent from the BSA.
Suisun marsh aster	*Symphyotrichum lentum*	Fed: State CNPS:	-- -- 2B.3	A perennial rhizomatous herb inhabiting wetlands, freshwater marsh, and brackish-marsh communities. Flowers May-November (0-984 feet).	A	**Presumed Absent:** The BSA does contain potentially suitable freshwater marsh and wetland habitat; however, the nearest presumed extant occurrence of the species is approximately 15 miles northwest of the BSA within the Yolo Bypass. Due to the distance of presumed extant occurrences, the species is presumed absent from the BSA.
watershield	*Brasenia schreberi*	Fed: State CNPS:	-- -- 2B.3	A perennial rhizomatous aquatic herb inhabiting ponds, slow streams and freshwater marsh and swamp communities. Flowers June-September (98-7,217 feet).	A	**Presumed Absent:** The BSA does contain potentially suitable vernal pool habitat; however, the BSA is below the known elevation range of the species. The nearest presumed extant population is approximately 8 miles from the BSA with the species known elevation range. Due to being outside of the species known elevation range, the species is presumed absent from the BSA.

woolly rose-mallow	*Hibiscus lasiocarpos var. occidentalis*	Fed: State: CNPS:	-- -- 1B.2	A perennial rhizomatous herb inhabiting freshwater wetlands, wet banks, and marsh communities. Often found in-between riprap on levees. Flowers June-September (0-394 feet).	HP	**Low to Moderate Potential:** The BSA does contain potentially suitable freshwater wetlands and marsh communities. The nearest presumed extant occurrence is within approximately 5 miles of the BSA. Due to the presence of potentially suitable habitat and the distance to extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

Federal Designations (Fed): (FESA, USFWS) **E:** Federally listed, endangered **T:** Federally listed, threatened **D:** Delisted	**State Designations (CA):** (CESA, CDFW) **E:** State-listed, endangered **T:** State-listed, threatened **CE:** State-candidate, endangered **R:** State-designated, rare

Other Designations
CDFW_SSC: CDFW Species of Special Concern
CDFW_FP: CDFW Fully Protected
California Native Plant Society (CNPS) Designations*:*
****Note: according to CNPS (Skinner and Pavlik 1994), plants on Lists 1B and 2 meet definitions for listing as threatened or endangered under Section 1901, Chapter 10 of the California Fish and Game Code. This interpretation is inconsistent with other definitions.***
1A: Plants presumed extinct in California.
1B: Plants rare and endangered in California and throughout their range.
2: Plants rare, threatened, or endangered in California but more common elsewhere in their range.
3: Plants about which need more information; a review list.
Plants 1B, 2, and 3 extension meanings:
_.1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
_.2 Fairly endangered in California (20-80% occurrences threatened)
_.3 Not very endangered in California (<20% of occurrences threatened or no current threats known)

Habitat Potential
Absent [A] - No habitat present and no further work needed.
Habitat Present [HP] - Habitat is, or may be present. The species may be present.
Critical Habitat [CH] – Project is within designated Critical Habitat.

Potential for Occurrence Criteria:
Present: Species was observed on site during a site visit or focused survey.
High: Habitat (including soils and elevation factors) for the species occurs on site and a known occurrence has been recorded within 5 miles of the site.
Low-Moderate: Either low quality habitat (including soils and elevation factors) for the species occurs on site and a known occurrence exists within 5 miles of the site; or suitable habitat strongly associated with the species occurs on site, but no records were found within the database search.
Presumed Absent: Focused surveys were conducted and the species was not found, or species was found within the database search but habitat (including soils and elevation factors) do not exist on site, or the known geographic range of the species does not include the survey area.

Species Table Sources: Babcock 1995, Bennet 2005, CDFW 2020a, CDFW 2020b, CNDDB 2020, CNPS 2020, Mayer 1988, [NMFS 2005, 2012], NRCS 2018, Shuford 2008, [USFWS 2002, 2007a, 2007b, 2009, 2020], Zeiner 1988-1990

Chapter 4. Survey Results and Effects of the Action

4.1. Habitats and Natural Communities of Concern

The BSA lies within the Great Valley floristic province (Jepson eFlora 2020), a biologically diverse ecosystem. Biological surveys and a jurisdictional delineation were conducted to assess natural communities and biological resources within the BSA. Sensitive wildlife species were identified as present during the biological surveys, and the jurisdictional delineation determined jurisdictional waters of the U.S. and state occur within the BSA.

4.1.1. Discussion of Jurisdictional Waters

Potential jurisdictional waters within the BSA were assessed and potential wetland features were evaluated for presence of the following wetland indicators: hydrophytic vegetation, hydric soils and wetland hydrology. Surveys of potential jurisdictional waters were confirmed using aerial imagery and field verification, and followed the guidelines provided in the USACE *Wetland Delineation Manual* (USACE 1987), *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008a), and *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b). Wetlands that exhibit all three wetland indicators are considered waters of the U.S. if they are hydraulically connected to another water of the U.S. Waters of the state can include wetlands that are not hydraulically connected to another water body if they provide habitat for wildlife or special status plant species.

Previous to the current 2018 survey efforts, ECORP Consulting Inc. had performed a wetland delineation for the East Lawn Cemetery Expansion (2006-2007). These delineation results have since expired; however, the mapping efforts from the ECORP delineation were used as reference for aquatic feature locations.

Jurisdictional delineations were conducted by Dokken Engineering biologists, Andrew Dellas and Courtney Owens on April 24 – April 26, 2018 to identify jurisdictional resources present within the BSA. Observed OHWM and wetland features were mapped in the field with a Trimble GeoXT Geoexplorer 6000 Series handheld GPS unit.

4.1.1.1. Jurisdictional Waters Survey Results

Hydrological resources within the BSA include Laguna Creek, Whitehouse Creek, and associated wetland features: emergent marsh, vernal pools, vernal swales, seasonal wetlands, and seasonal wetland swales (Figure 5. Jurisdictional Waters within the BSA). Laguna Creek and Whitehouse Creek are part of the Morrison Creek watershed, and Laguna Creek subwatershed, within the Lower Sacramento River Hydrologic Unit (HUC 6) (Caltrans 2020). Whitehouse Creek flows from east to west and has been redirected around residential developments north of the BSA. Whitehouse Creek then joins with Laguna Creek within the BSA approximately 0.25 miles east of East Stockton Boulevard. Laguna Creek flows east to west travelling approximately 4000 linear feet through the BSA from Camden Lake to East Stockton Boulevard. All wetland and water features were assessed for Federal and State jurisdiction.

<u>Perennial Creeks</u>

The Study Area includes the perennial Laguna Creek and Whitehouse Creek. Whitehouse Creek and Laguna Creek are part of the Morrison Creek watershed, and Laguna Creek subwatershed, within the Lower Sacramento River Hydrologic Unit (HUC 6) (Caltrans 2020). Whitehouse Creek flows from east to west and has been redirected from its natural orientation around residential developments north of the Study Area. Whitehouse Creek then joins with Laguna Creek within the Study Area approximately 0.25 miles east of East Stockton Boulevard. Approximately 1,500 linear feet of Whitehouse Creek is within the Study Area. Laguna Creek flows east to west travelling approximately 4,000 linear feet through the Study Area from Camden Lake to East Stockton Boulevard. Whitehouse Creek and Laguna Creek ultimately make connection with the Sacramento River approximately 6 miles west of the Study Area. Approximately 10.74 acres of the Study Area was delineated as perennial creek.

<u>Vernal Pools</u>
Vernal pools are characterized by seasonal inundation and their potential to support vernal pool species. A wide variety of herbaceous species are associated with this community type, including Italian ryegrass, Mediterranean barley, coyote thistle (*Eryngium* sp.), smooth goldfields (*Lasthenia glaberrima*), Fremont's goldfields (*Lasthenia fremontii*), vernal pool buttercup (*Ranunculus bonariensis var. trisepalus*), and woolly marbles (*Psilocarphus spp.).* Additional species that may be present include Sacramento mint (*Pogogyne zizyphoroides*), hyssop loosestrife (*Lythrum hyssopifolium*), toad rush (*Juncus bufonius*), popcorn flower (*Plagiobothrys spp.),* alkali weed, mayweed, and curly dock. Vernal pool communities have the potential to support special-status vernal pool invertebrates, such as fairy shrimp (*Branchinecta* spp.) and tadpole shrimp (*Lepidurus* spp.). The Study Area includes vernal pool communities. A total of 12 vernal pools were delineated within the Study Area consisting of approximately 0.60 acres.

<u>Vernal Swale</u>
Vernal pools are sometimes connected to each other by small drainages known as vernal swales, forming complexes of vernal pools. Vernal swales differ from vernal pools in that they function distinctly as shallow, seasonal conveyance channels. The typically connect vernal pools or convey shallow seasonal flows down gradual inclines often collecting water in a vernal pool or seasonal wetland. Vernal swales and pools typically share plant species and successive "rim bloom" plant assemblages and soil types (California Open Lands 2020). A total of 2 vernal swale areas were delineated within the Study Area consisting of approximately 0.24 acres.

<u>Seasonal Wetland</u>
Seasonal wetlands are defined as ephemeral wetlands that pond during the rainy season and dry during the summer dry season. This habitat type is dominated by hydrophytic vegetation types of grasses, herbs, and forbs. The seasonal wetland habitat type occurs in the adjacent lands of the Stone Lakes NWR in the northwest quadrant of the Study Area. Seasonal wetlands can provide habitat for vernal pool associates, and habitat for a wide variety of wildlife including song birds, waterfowl, reptiles, and other wildlife species. A total of 20 seasonal wetland features were delineated within the Study Area consisting of approximately 9.47 acres.

<u>Seasonal Wetland Swale</u>
The seasonal swale land cover type is defined as low meandering channels that tend to be saturated long enough to support vegetative associations. Swale features often represent the headwaters of streams, connect seasonal wetlands, and/or drain small watersheds into defined creeks. Swales can be supported by minor groundwater seepage. Swales contain rabbitsfoot grass (*Polypogon monspeliensis*), fireweed (*Epilobium pygmaeum*), fiddle dock (*Rumex pulcher*), and prickleseed buttercup (*Ranunculus muricatus*). Seasonal swales that occur within and between vernal pool complexes are classified as vernal swales. A total of 6 seasonal wetland swale features were delineated within the Study Area consisting of approximately 1.23 acres.

<u>Emergent Marsh</u>

Freshwater emergent marsh wetlands are characterized by erect, rooted herbaceous hydrophytes such as common cattail. Emergent wetlands are flooded frequently enough so that the roots of the vegetation are in an anaerobic environment. On the upper margins of this habitat, saturated or periodically flooded soils support several moist soil plant species including Baltic rush (*Juncus balticus*), tall flatsedge (*Cyperus eragrostis*), smartweed (*Persicaria spp.),* and, on more alkali sites, saltgrass (*Distichlis spicata*). Lower, wetter portions of freshwater emergent wetlands in the Project area are composed of cattails, bulrush, and floating primrose. In the Project area, several freshwater emergent wetlands exist west of Franklin Boulevard. A total of 3 emergent marsh features were delineated within the Study Area consisting of approximately 1.77 acres.

4.1.1.2. PROJECT IMPACTS TO JURISDICTIONAL WATERS

The Project will result in both permanent and temporary effects to jurisdictional waters of the U.S. and state, and CDFW jurisdictional habitats. Permanent effects include areas that will permanently be altered by required fill materials for construction of the access road. Temporary effects include construction areas outside of permanent effects that will be re-contoured to preconstruction conditions and re-vegetated after construction. Permanent and temporary impacts to aquatic features resulting from the proposed Project are shown in **Table 4** and **Figure 6**. A discussion of specific impacts to each aquatic resource type are described below.

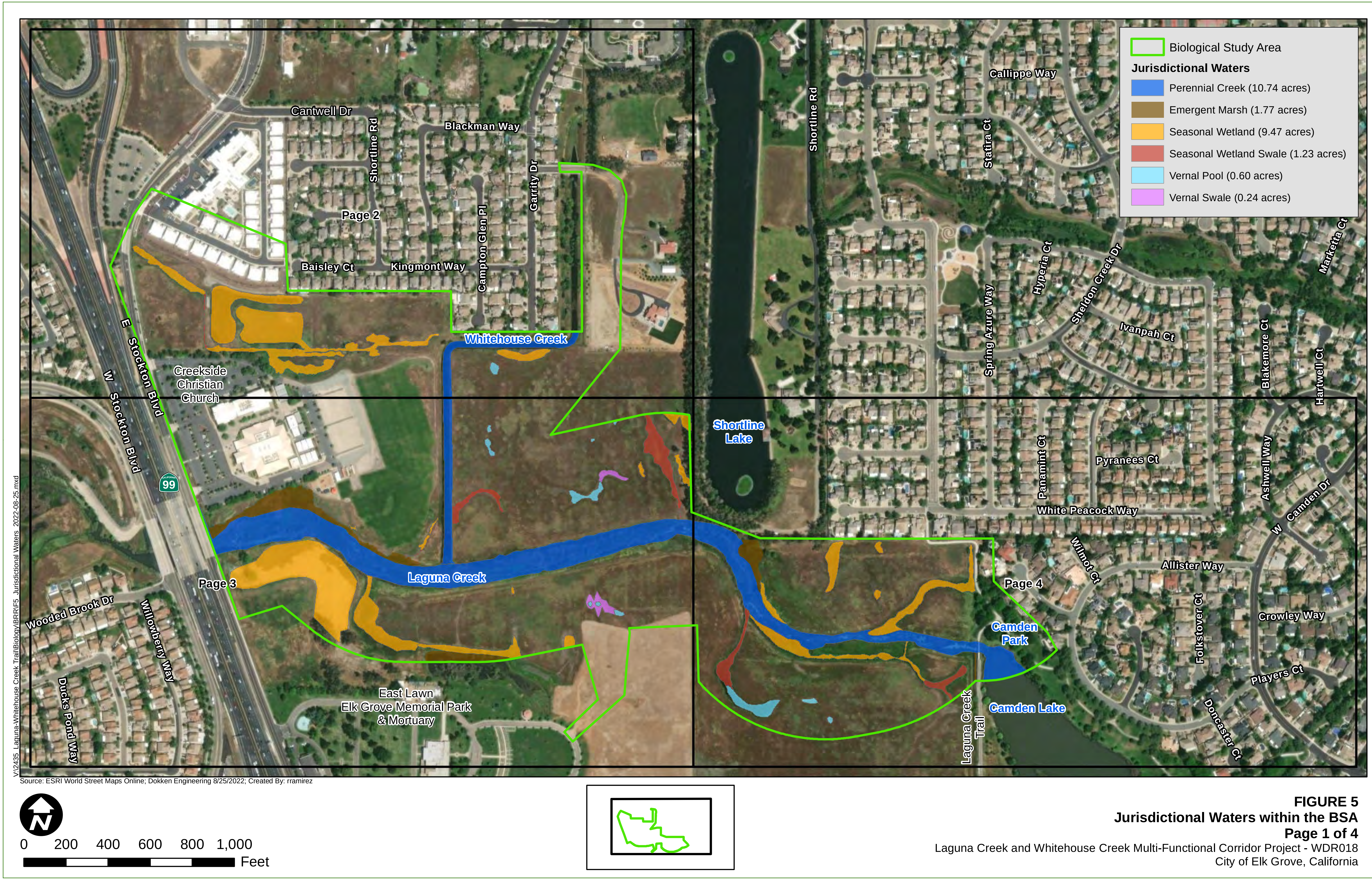
Table 4. Project Effects to Jurisdictional Waters

	Waters of the U.S., State and CDFW Waters	
Jurisdictional Waters	*Permanent Impacts (Acres)*	*Temporary Impacts (Acres)*
Perennial Creeks	0	0
Seasonal Wetlands	1.84	1.71
Seasonal Wetland Swales	0.05	<0.01
Vernal Pools	0	0
Vernal Swales	0	0
Emergent Marsh	0	0
Total	**1.89**	**1.72**

<u>Perennial Creeks</u>

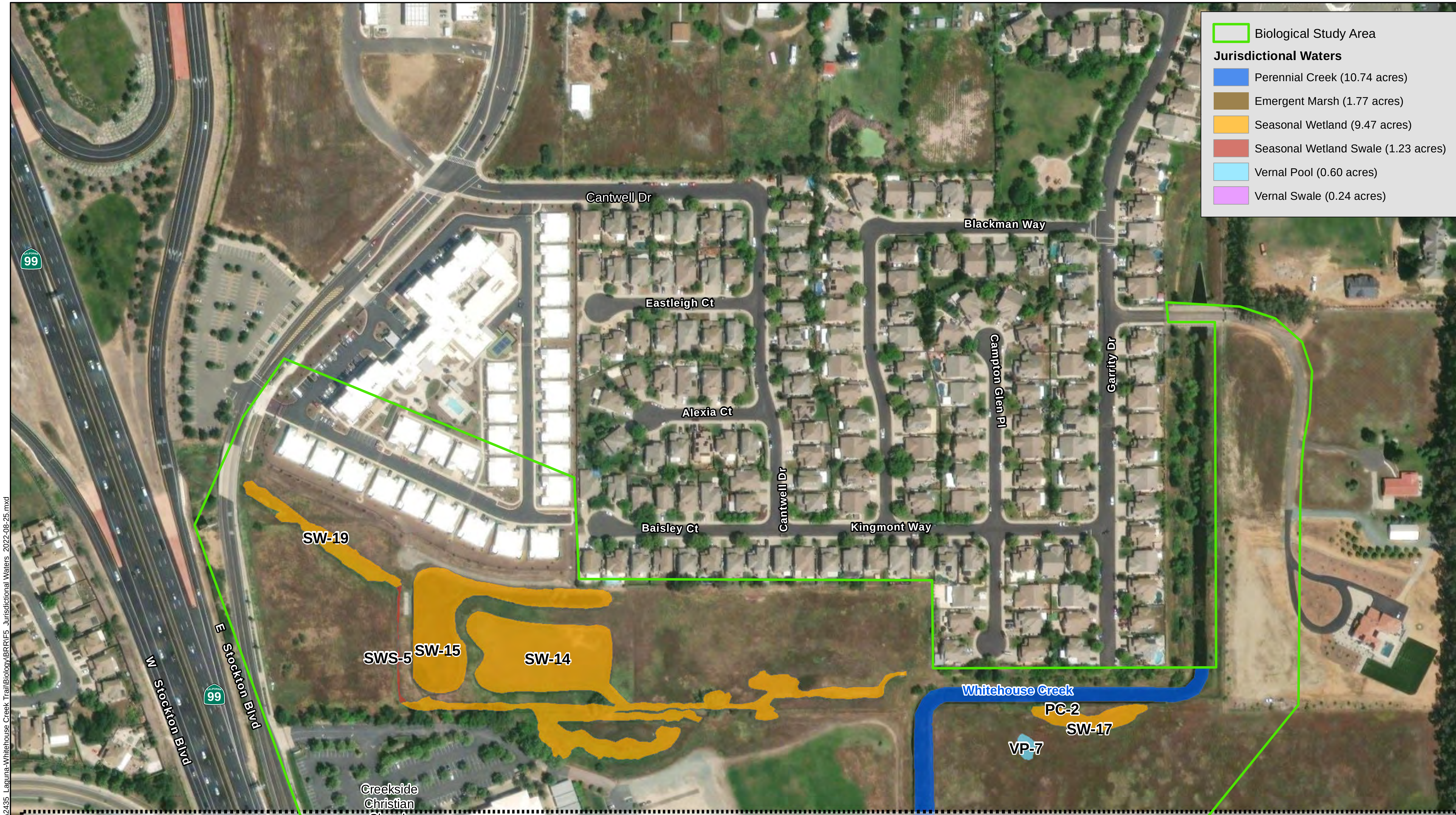
Laguna Creek

The construction of the proposed Project would not result in permanent and temporary impacts to Laguna Creek and Whitehouse Creek, as shown in **Table 4** and **Figure 6**. The Project would not result in temporary or permanent impacts to perennial creek habitat.

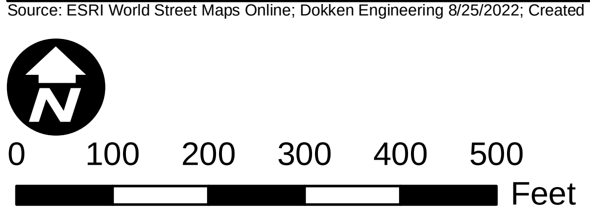


Source: ESRI World Street Maps Online; Dokken Engineering 8/25/2022; Created By: rramirez

FIGURE 5
Jurisdictional Waters within the BSA
Page 1 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California



Source: ESRI World Street Maps Online; Dokken Engineering 8/25/2022; Created By: rramirez



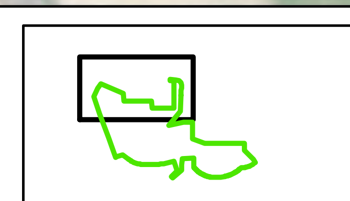


FIGURE 5
Jurisdictional Waters within the BSA
Page 2 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

Source: ESRI World Street Maps Online; Dokken Engineering 8/25/2022; Created By: rramirez

0 100 200 300 400 500 Feet

FIGURE 5
Jurisdictional Waters within the BSA
Page 3 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

Source: ESRI World Street Maps Online; Dokken Engineering 8/25/2022; Created By: rramirez

FIGURE 5
Jurisdictional Waters within the BSA
Page 4 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

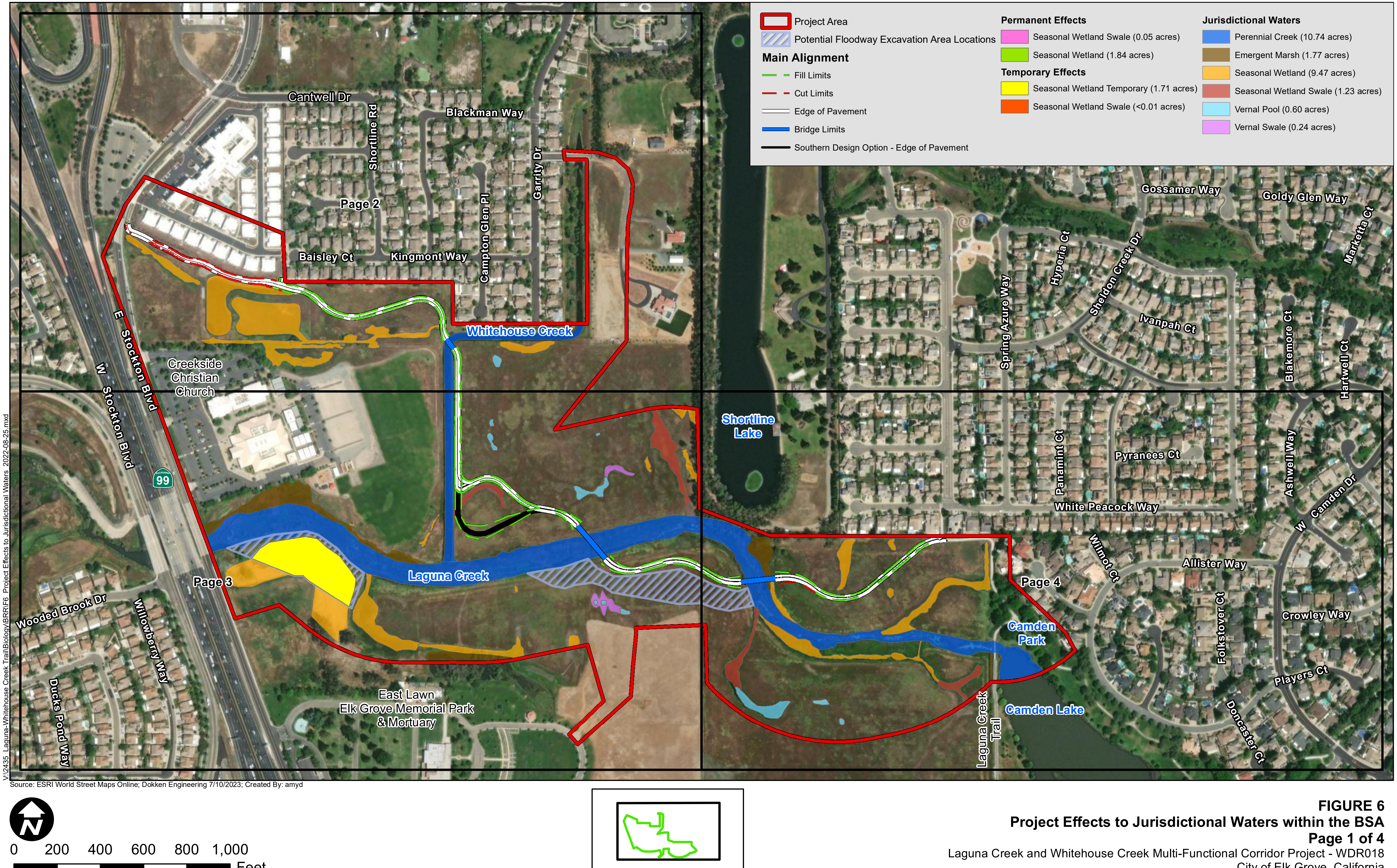


FIGURE 6
Project Effects to Jurisdictional Waters within the BSA
Page 1 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

FIGURE 6
Project Effects to Jurisdictional Waters within the BSA
Page 2 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

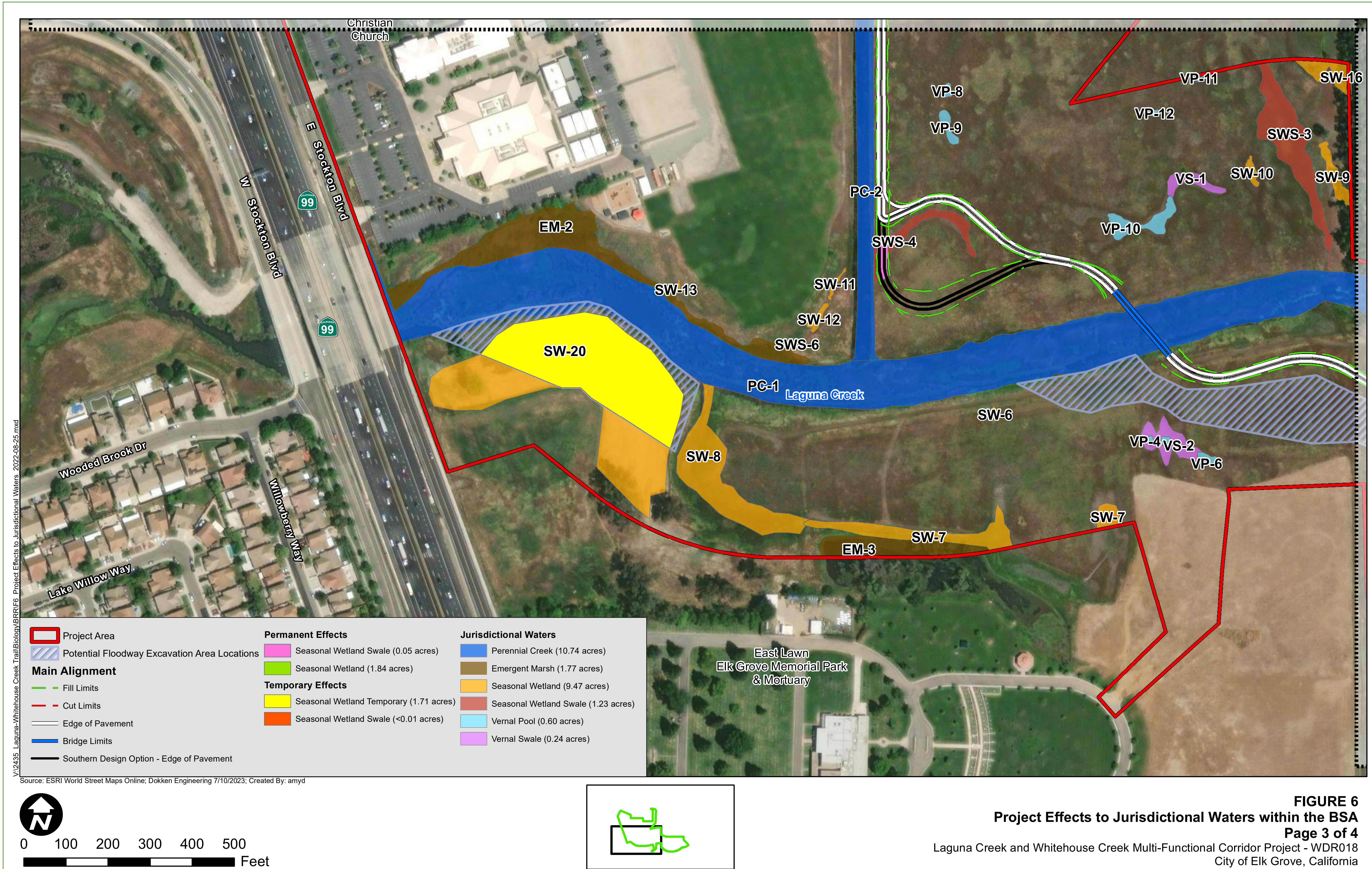
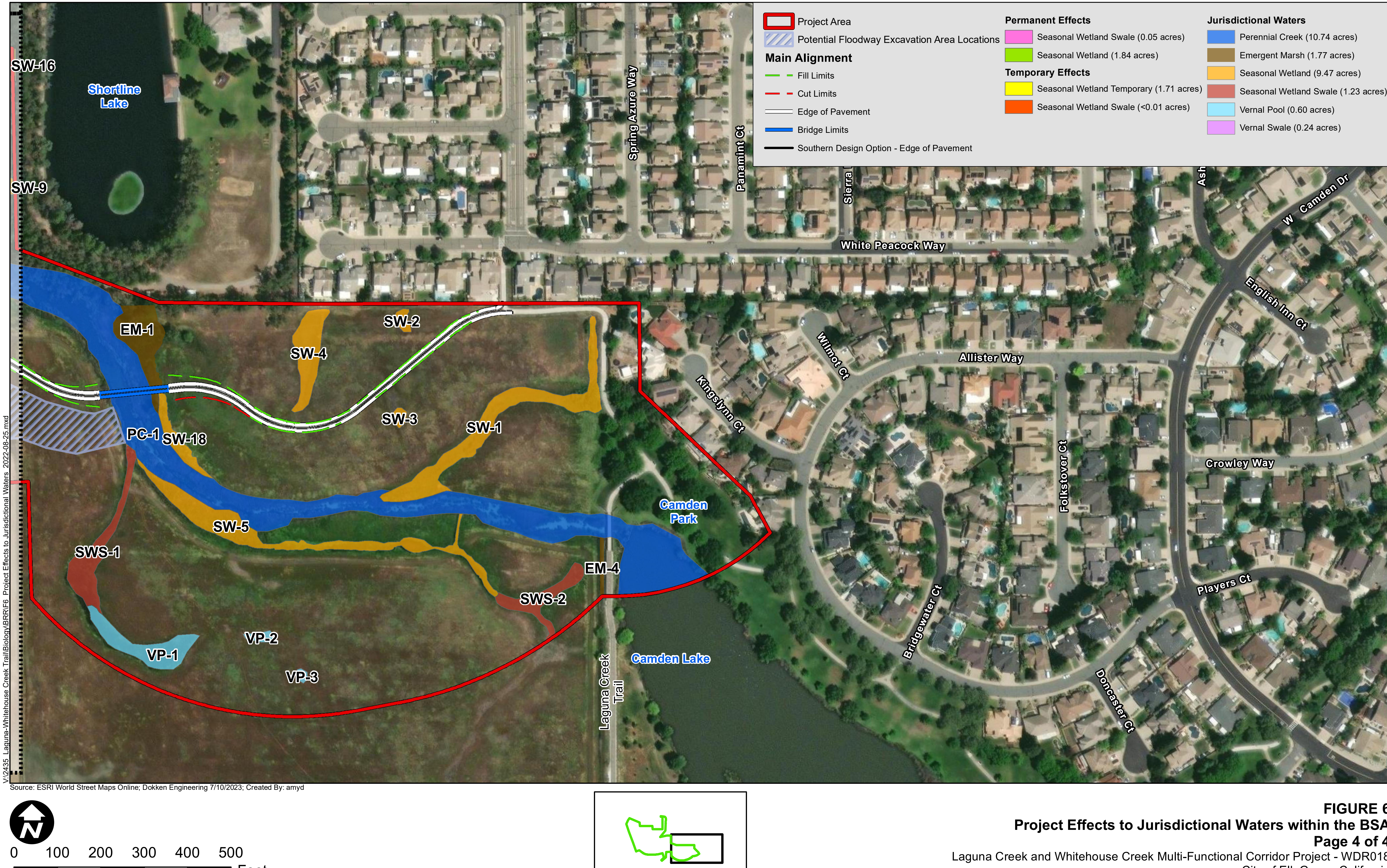


FIGURE 6
Project Effects to Jurisdictional Waters within the BSA
Page 3 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California



Source: ESRI World Street Maps Online; Dokken Engineering 7/10/2023; Created By: amyd

FIGURE 6
Project Effects to Jurisdictional Waters within the BSA
Page 4 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

Vernal Pools and Swales

Direct Impacts

Due to the delicate hydrology of vernal pools, direct impacts to a portion of a vernal pool permanently modify the hydrology of the entire vernal pool and all direct impacts are treated as permanent impacts. However, the proposed Project has been designed to avoid all permanent impacts to vernal pool habitat. Therefore, no permanent direct impacts to vernal pool habitat are anticipated.

Indirect Impacts

Modifications to the micro-watershed (including vernal swales) surrounding vernal pools indirectly affects their long-term hydrology. Indirect impacts may result from changes in on-site hydrology to vernal pools due to the creation of impervious surfaces on impermeable surfaces. These may alter the amount of water entering vernal pools and potentially degrade vernal pool crustacean habitat. After reviewing vernal pools present within the BSA, it was determined that construction of the proposed Project could cause hydrological or biological modifications that could cause indirect effects of vernal pools in the area of construction of the proposed Project. An indirect effects discussion for potential indirect impacts to vernal pool invertebrates is provided in Section 4.3.5.

Seasonal Wetland

The construction of the proposed Project would result in permanent impacts to seasonal wetlands as shown in **Table 4** and **Figure 6**. Approximately 1.84 acres of permanent impacts would occur to seasonal wetland habitat. Approximately 1.71 acres of temporary impacts would occur in addition to permanent impacts that would be temporarily disturbed to facilitate construction of the Project alignment.

Seasonal wetland habitat may be suitable for vernal pool invertebrates and potential permanent direct and indirect impacts to seasonal wetland habitat may be considered impacts to vernal pool invertebrate species. A discussion of both direct and indirect effects to special status vernal pool invertebrates is provided in Section 4.3.5.

Seasonal Wetland Swale

The construction of the proposed Project would result in approximately 0.05 acres of permanent impacts to seasonal wetland swale habitat. However, a minor amount of temporary impacts, approximately <0.01 acres would have temporary effects, as shown in **Table 4** and **Figure 6**.

Emergent Marsh

The construction of the proposed Project would not result in permanent and temporary impacts to emergent marsh habitat, as shown in **Table 4** and **Figure 6**.

4.1.1.3. AVOIDANCE AND MINIMIZATION EFFORTS FOR WATERS

The Project has been designed to minimize temporary and permanent impacts to jurisdictional waters to the maximum extent practicable. Prior to construction, regulatory permits will be obtained from USACE, CDFW, and RWQCB. In addition to all measures specified in these permits, the following Best Management Practices (BMPs) will be incorporated into the design to minimize construction impacts to jurisdictional waters within the BSA and regional water quality. The Project will comply with the following measures:

BIO-1: Prior to the start of construction activities, the Project limits in proximity to jurisdictional waters shall be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking to ensure construction will not further encroach into waters. The Project biologist will periodically inspect the ESA to ensure sensitive locations remain undisturbed.

BIO-2: Contract specifications will include the following BMPs, where applicable, to reduce erosion during construction:

- Implementation of the Project shall require approval of a site-specific Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Program (WPCP) that would implement effective measures to protect water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques;
- Existing vegetation shall be protected in place where feasible to provide an effective form of erosion and sediment control. In locations where this is not feasible, the remaining BMPs listed below shall be implemented;
- Stabilizing materials shall be applied to the soil surface to prevent the movement of dust from exposed soil surfaces on construction sites as a result of wind, traffic, and grading activities;
- Roughening and/or terracing shall be implemented to create unevenness on bare soil through the construction of furrows running across a slope, creation of stair steps, or by utilization of construction equipment to track the soil surface. Surface roughening or terracing reduces erosion potential by decreasing runoff velocities, trapping sediment, and increasing infiltration of water into the soil, and aiding in the establishment of vegetative cover from seed.
- Soil exposure shall be minimized through the use of temporary BMPs, groundcover, and stabilization measures;
- The contractor shall conduct periodic maintenance of erosion- and sediment-control measures.

BIO-3: To conform to water quality requirements, the Project must implement the following:

- Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants shall be a minimum of 100 feet from surface waters. Any necessary equipment washing shall occur where the water cannot flow into surface waters. The Project specifications shall require the contractor to operate under an approved spill prevention and clean-up plan;
- Construction equipment shall not be operated in flowing water;
- Construction work shall be conducted according to site-specific construction plans that minimize the potential for sediment input to waters of the U.S. and State;
- Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life shall be prevented from contaminating the soil or entering surface waters;
- Equipment used in and around surface waters shall be in good working order and free of dripping or leaking contaminants; and,
- Any surplus concrete rubble, asphalt, or other debris from construction shall be taken to an approved disposal site.

BIO-4: All temporarily disturbed areas shall be restored onsite to pre-Project conditions or better prior to Project completion. Where possible, vegetation shall be trimmed rather than fully removed with the guidance of the Project biologist.

4.1.1.4. Compensatory Mitigation for Jurisdictional Waters

The proposed Project will have permanent impacts to waters of the U.S., state, and CDFW waters. Compensatory mitigation for permanent and temporary impacts to waters of the U.S. and State will be determined through waters permitting in coordination through Section 404, Section 401, and Section 1602. Consultation efforts with RWQCB, USACE, and CDFW will occur through this process and final mitigation ratios for impacts to waters of the U.S. and State will be determined.

4.1.1.5. Cumulative Impacts to Jurisdictional Waters

The proposed Project would create new permanent modifications to already heavily modified water feature Whitehouse Creek; which has already been realigned to accommodate residential development and is regularly maintained to preserve water carrying capacity. When viewed within the historical context of realignment and constant disturbance, the Project will result in a comparatively minor impact to this feature. This impact will contribute to the long-term anthropomorphic modification of Whitehouse Creek; but, with the inclusion of compensatory mitigation for Project impacts to jurisdictional waters, no cumulative impacts to jurisdictional waters are anticipated.

The proposed Project would also contribute to minor permanent and temporary alterations to Laguna Creek. The abutments for the new bridges will be constructed outside of the OHWM and bridges have been designed to clear span Laguna Creek. Construction of this new bridges will not contribute to long term cumulative loss of jurisdictional waters, and with the inclusion of compensatory mitigation for Project impacts to jurisdictional waters, no cumulative impacts to jurisdictional waters are anticipated.

The proposed Project would also permanently and temporarily modify seasonal wetlands, and emergent marsh by constructing the Project. However, with the inclusion of compensatory mitigation for Project impacts jurisdictional waters, no cumulative impacts to jurisdictional seasonal wetlands, and emergent marsh habitat is anticipated.

4.2. Special Status Plant Species

Preliminary literature research was conducted to determine the special status plant species with the potential to occur in the vicinity of the Project. A review of CNDDB, CNPS and online databases concluded that 23 special status plant species had the potential to occur within the BSA. Based on preliminary research, aerial reconnaissance, and field surveys of habitat conditions within the BSA, it was determined that 5 special status plant species had a low to high potential to occur within the BSA: Boggs Lake hedge-hyssop (*Gratiola heterospeala*), dwarf downingia (*Downingia pusilla*), legenere (*Legenere limosa*), Sanford’s arrowhead (*Sagittaria sanfordii*), and woolly rose-mallow (*Hibiscus lasiocarpos* var. *occidentalis*). Rare plant surveys were conducted April 24, 2018, April 25, 2018 and April 26, 2018 by Dokken biologists Andrew Dellas and Courtney Owens, as well as June 21, 2018 by Dokken Engineering biologist Andrew Dellas and Scott Salembier. Rare plant surveys included habitat assessments, and focused surveys for special status plant species. No special status plant species were identified during the survey efforts. A Botanical Survey Report has been prepared for the Project (Dokken Engineering 2019, Appendix F).

4.2.1. Discussion of Sensitive Plant Species

Boggs Lake Hedge-Hyssop
Boggs Lake hedge-hyssop (*Gratiola heterosepala*) is not a state or federal listed species, but is a CNPS rare plant rank 1B.2. Boggs Lake hedge-hyssop is an annual herb inhabiting clay soils and shallow waters of marshes and swamps, lake margins, and vernal pools. The species flowers from April-August at elevations ranging from 33-7,792 feet.

Dwarf Downingia
Dwarf downingia (*Downingia pusilla*) is not a state or federal listed species, but is a CNPS rare plant rank 2B.2. Dwarf downingia is an annual herb inhabiting vernal pools and mesic valley and foothill grassland communities. The species flowers from March-May at elevations ranging from 3-1,460 feet.

Legenere
Legenere (*Legenere limosa*) is not a state or federal listed species, but is a CNPS rare plant rank 1B.1. Legenere is an annual herb inhabiting wet areas, vernal pools, and ponds. The species flowers from May-June at elevations ranging from 0-2,887 feet.

Sanford's Arrowhead
Sanford's arrowhead (*Sagittaria sanfordii*) is not a state or federal listed species, but is a CNPS rare plant rank 1B.2. Sanford's arrowhead is a perennial rhizomatous herb inhabiting freshwater marshes, swamps, ponds and ditches. The species flowers from May-October at elevations ranging from 0-2,132 feet.

Wooly Rose-Mallow
Wooly rose-mallow (*Hibiscus lasiocarpos var. occidentalis*) is not a state or federal listed species, but is a CNPS rare plant rank 1B.2. Wooly rose-mallow is a perennial rhizomatous herb inhabiting freshwater wetlands, wet banks, and marsh communities, and is often found in-between riprap on levees. The species flowers from June-September at elevations ranging from 0-394 feet.

4.2.1.1. Special Status Plant Survey Result

Boggs Lake hedge-hyssop
The BSA does contain potentially suitable shallow water and vernal pool habitat. The nearest presumed extant occurrence is approximately 3 miles from the BSA. Due to the presence of potentially suitable habitat and the proximity to the extant occurrence the species has a low to moderate potential to occur within the BSA. However, during the April and June focused rare plant surveys, no specimens of the species were identified within the BSA.

Dwarf Downingia
The BSA does contain potentially suitable vernal pool habitat. The nearest presumed extant occurrence is approximately 2 miles from the BSA. Due to the presence of potentially suitable habitat and the proximity to the extant occurrences the species has a low to moderate potential to occur within the BSA. However, during the April and June focused rare plant surveys, no specimens of the species were identified within the BSA.

Legenere
The BSA does contain potentially suitable wet areas and vernal pool habitat. The nearest presumed extant occurrence is approximately 1.5 miles from the BSA. Due to the presence of potentially suitable habitat and the proximity to the presumed extant occurrences the species has a low to moderate

potential to occur within the BSA. However, during the April and June focused rare plant surveys, no specimens of the species were identified within the BSA.

Sanford's arrowhead
The BSA does contain potentially suitable freshwater marsh and creek channels. The nearest presumed extant occurrence of the species is approximately 1 mile from the BSA. Due to the presence of potentially suitable habitat and the proximity to CNDDB presumed extant occurrences, the species is considered to have a high potential to occur within the BSA. However, during the April and June focused rare plant surveys, no specimens of the species were identified within the BSA.

Woolly rose-mallow
The BSA does contain potentially suitable freshwater wetlands and marsh communities. The nearest presumed extant occurrence is within approximately 5 miles of the BSA. Due to the presence of potentially suitable habitat and the distance to extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA. However, during the April and June focused rare plant surveys, no specimens of the species were identified within the BSA.

4.2.1.2. PROJECT IMPACTS TO SPECIAL STATUS PLANTS

Boggs Lake hedge-hyssop
Boggs lake hedge-hyssop is restricted to shallow wetland and vernal pool habitat. No vernal pool habitat will be directly impacted by the Project; however, approximately 1.84 acres of seasonal wetland habitat would be permanently impacted and approximately 1.71 acres of seasonal wetland habitat would be temporarily impacted by the proposed Project. Pursuant to the recommendations in the *Protocols for Surveying and Evaluating Impacts to Species Status Native Plant Populations and Natural Communities* (CDFW 2018), a single season of negative surveys is not sufficient to determine absence of a species. A second round of rare plant surveys will be conducted during the bloom period prior to construction as described in measure **BIO-5**. With the inclusion of measure **BIO-5** below, no direct impacts to the species are anticipated.

Dwarf downingia
The BSA does contain potentially suitable vernal pool habitat. No vernal pool habitat will be directly impacted by the Project; however, approximately 1.84 acres of seasonal wetland habitat would be permanently impacted and approximately 1.71 acres of seasonal wetland habitat would be temporarily impacted by the proposed Project. Pursuant to the recommendations in the *Protocols for Surveying and Evaluating Impacts to Species Status Native Plant Populations and Natural Communities* (CDFW 2018), a single season of negative surveys is not sufficient to determine absence of a species. A second round of rare plant surveys will be conducted during the bloom period prior to construction as described in measure **BIO-5**. With the inclusion of measure **BIO-5** below, no direct impacts to the species are anticipated.

Legenere
The BSA does contain potentially suitable wet areas and vernal pool habitat. No vernal pool habitat will be directly impacted by the Project; however, approximately 1.84 acres of seasonal wetland habitat would be permanently impacted and approximately 1.71 acres of seasonal wetland habitat would be temporarily impacted by the proposed Project. Pursuant to the recommendations in the *Protocols for Surveying and Evaluating Impacts to Species Status Native Plant Populations and Natural Communities* (CDFW 2018), a single season of negative surveys is not sufficient to determine absence of a species. A second round of rare plant surveys will be conducted during the bloom period prior to construction as described in measure **BIO-5**. With the inclusion of measure **BIO-5** below, no direct impacts to the species are anticipated.

Sanford's arrowhead
The BSA does contain potentially suitable freshwater marsh and creek channels. The project would not impact potentially suitable creek channel habitat or potentially suitable freshwater emergent marsh habitat. Pursuant to the recommendations in the *Protocols for Surveying and Evaluating Impacts to Species Status Native Plant Populations and Natural Communities* (CDFW 2018), a single season of negative surveys is not sufficient to determine absence of a species. A second round of rare plant surveys will be conducted during the bloom period prior to construction as described in measure **BIO-5**. With the inclusion of measure **BIO-5** below, no direct impacts to the species are anticipated.

Woolly rose-mallow
The BSA does contain potentially suitable freshwater wetlands and marsh communities. The project would permanently impact approximately 1.84 acres and temporarily impact approximately 1.71 acres of potentially suitable seasonal wetland habitat. The project would not impact potentially suitable freshwater emergent marsh habitat. Pursuant to the recommendations in the *Protocols for Surveying and Evaluating Impacts to Species Status Native Plant Populations and Natural Communities* (CDFW 2018), a single season of negative surveys is not sufficient to determine absence of a species. A second round of rare plant surveys will be conducted during the bloom period prior to construction as described in measure **BIO-5**. With the inclusion of measure **BIO-5** below, no direct impacts to the species are anticipated.

4.2.2. Avoidance and Minimization Efforts for Special Status Plant Species

BIO-5: A focused rare plant survey shall be conducted during the blooming season of each special status plant species with potential to occur within the Project area prior to the start of construction (Boggs Lake hedge-hyssop, dwarf downingia, legenere, Sanford's arrowhead, and wooly rose-mallow). If rare plants are discovered during these surveys, additional ESA fencing or relocation shall be implemented to avoid and minimize impact to the species. The City will consult with CDFW may be required to determine appropriate buffer distances and/or relocation of species populations.

4.2.3. Compensatory Mitigation for Special Status Plant Species

With the inclusion of measure **BIO-5**, no direct impacts to the special status plant species are anticipated. No compensatory mitigation is proposed at this time. If any special status plant species are discovered within the BSA during the implementation of **BIO-5**, additional compensatory mitigation may be required.

4.2.4. Cumulative Impacts to Special Status Plant Species

With the incorporation of avoidance and minimization measures for special status plant species, and compensatory mitigation for the loss of potentially suitable wetland habitat, no impacts to special status species are anticipated; therefore, no cumulative impacts to special status plant species are anticipated.

4.3. Special Status Wildlife Species

Preliminary literature research was conducted to determine the special status wildlife species with the potential to occur in the vicinity of the Project. A review of CNDDB, USFWS, and NOAA Fisheries online databases concluded that 28 special status wildlife species had the potential to occur within the Project vicinity. Analysis of specific habitat requirements and current and historical occurrences determined the BSA was potentially suitable for following species:

- Swainson's hawk (Buteo swainsoni),
- white-tailed kite (*Elanus leucurus*),
- burrowing owl (*Athena cunicularia*),
- song sparrow "Modesto population" (*Melospiza melodia*),
- tricolored blackbird (*Agelaius tricolor*),
- yellow-headed blackbird (*Xanthocephalus xanthocephalus*),
- vernal pool fairy shrimp (*Branchinecta lynchi*),
- vernal pool tadpole shrimp (*Lepidurus packardi*),
- giant garter snake (*Thamnophis gigas*),
- western pond turtle (Emys marmorata), and
- western spadefoot (*Spea hammondii*).

Field surveys conducted April 4, 2018 and April 24 – April 26, 2018 by Dokken Engineering biologist Andrew Dellas, Scott Salembier, and Courtney Owens, included a habitat assessment, and focused surveys for special status wildlife species. Swainson's hawk, white-tailed kite, and western pond turtle were observed during the field surveys and are considered present within the BSA. No other special status species were observed during the field surveys, but they are still considered to have potential of occurring within the BSA based on presence of potentially suitable habitat and recently documented regional occurrences, as detailed in Table 3 above.

4.3.1. Discussion of Swainson's Hawk

Swainson's hawk is state-listed as threatened. Swainson's hawk migrates annually from wintering areas in South America to breeding locations in northwestern Canada, the western U.S., and Mexico. In California, Swainson's hawks nest throughout the Sacramento Valley in large trees in riparian habitats and in isolated trees in or adjacent to agricultural fields. The breeding season extends from late March through late August, with peak activity from late May through July (England et al. 1997). In the Sacramento Valley, Swainson's hawks forage in large, open agricultural habitats, including alfalfa and hay fields (CDFW 1994). The breeding population in California has declined by an estimated 91% since 1900; this decline is attributed to the loss of riparian nesting habitats and the conversion of native grassland and woodland habitats to agriculture and urban development (CDFW 1994).

4.3.1.1. Swainson's Hawk Survey Results

The BSA does have potential suitable foraging and nesting habitat for the species. The species was observed foraging within the BSA during the April 4, 2018 biological survey. Due to the presence of suitable foraging and nesting habitat, and the observance of the species during the biological survey, the species is considered present within the BSA.

4.3.1.2. Project Impacts to Swainson's Hawk

The Project will permanently remove approximately 6.2 acres of Swainson's hawk valley grassland foraging habitat. However, no trees with current or historic nesting Swainson's hawk sites were observed during the surveys and the only large diameter trees within the BSA would not be impacted by the Project. Further, the Project's proposed pre-construction nesting surveys would ensure no Swainson's hawk nesting trees would be removed during construction; therefore, no impacts to nesting Swainson's hawk are anticipated. With the implementation of Project minimization and avoidance measures, use of Standard BMPs, proposed compensatory mitigation for Swainson's hawk valley grassland foraging habitat, the Project will not result in take of Swainson's hawk. With the avoidance of take, the Project does not anticipate that a CDFW Section 2081 Incidental Take Permit (ITP) for Swainson's hawk will be necessary.

4.3.1.3. SWAINSON'S HAWK AVOIDANCE AND MINIMIZATION EFFORTS

The following protective measure has been incorporated to minimize and avoid impacts to Swainson's hawk:

BIO-6: Should work occur within the Swainson's hawk nesting season (February 1st-August 31st), the Project biologist must conduct a pre-construction nesting survey consistent with survey methods recommended by the Swainson's Hawk Technical Advisory Committee within ¼ mile of the Project and two weeks prior to construction clearing and grubbing activities. Should a nesting Swainson's hawk pair be found within ¼ mile of the Project, the Project biologist will consult with the wildlife agencies for appropriate buffers. The contractor shall not work within the 1/2 mile nesting area until the appropriate buffer is established and is prohibited from conducting work that could disturb the birds (as determined by the Project biologist and in consultation with wildlife agencies) in the buffer area until the Project biologist determines the young have fledged.

4.3.1.4. COMPENSATORY MITIGATION FOR SWAINSON'S HAWK

The following compensatory mitigation measure has been incorporated to compensate for impacts to Swainson's hawk foraging habitat:

BIO-7: Valley grasslands in the Project area are considered Swainson's hawk foraging habitat and are protected under Chapter 16.130 of the City Municipal Code, Swainson's Hawk Impact Mitigation Fees. The City shall mitigate for the permanent loss of Swainson's hawk foraging habitat at a 1:1 ratio. Mitigation can be accomplished through participation in the City of Elk Grove Swainson's Hawk Impact Mitigation Fees Ordinance, other method acceptable to the California Department of Fish and Wildlife, or other method acceptable to the Elk Grove City Council pursuant to Section 16.130.110.

4.3.1.5. CUMULATIVE IMPACTS TO SWAINSON'S HAWK BLACKBIRD

With the implementation of avoidance, minimization, and mitigation measures **BIO-6** and **BIO-7**, the Project will avoid potential effects to Swainson's hawk. No cumulative impacts to the species are anticipated.

4.3.2. Discussion of White-tailed Kite

White-tailed kite is a fully protected species under CFG Code Section 3511. The species has a restricted distribution in the U.S., occurring only in California and western Oregon and along the Texas coast (American Ornithologists' Union 1983). The species is fairly common in California's Central Valley margins with scattered oaks and river bottomlands. White-tailed kites nest in riparian and oak woodlands and forage in nearby grasslands, pastures, agricultural fields, and wetlands. They use nearby treetops for perching and nesting sites. Voles and mice are common prey species.

4.3.2.1. WHITE-TAILED KITE SURVEY RESULTS

The BSA does have potential suitable foraging and nesting habitat for the species. The species was observed foraging within the BSA during the April 4, 2018 biological survey. Due to the presence of suitable foraging and nesting habitat, and the observance of the species during the biological survey, the species is considered present within the BSA.

4.3.2.2. PROJECT IMPACTS TO WHITE-TAILED KITE

The Project will permanently remove approximately 6.2 acres of white-tailed kite valley grassland foraging habitat. However, no trees with current or historic nesting white-tailed kite nesting sites were observed during the surveys and the only potentially suitable nesting trees within the BSA would not be impacted by the Project. Further, the Project's proposed pre-construction nesting surveys (**BIO-8**) would ensure no white-tailed kite nesting trees would be removed during construction; therefore, no impacts to white-tailed kite are anticipated. With the implementation of Project minimization and avoidance measure **BIO-8**, use of Standard BMPs, and proposed compensatory mitigation for Swainson's hawk valley grassland foraging habitat, the Project will not result in direct impacts to white-tailed kite.

4.3.2.3. WHITE-TAILED KITE AVOIDANCE AND MINIMIZATION EFFORTS

In addition to the Swainson's hawk nesting survey listed above, the following preconstruction nesting bird survey measure will be incorporated to minimize and avoid impacts to white-tailed kite and other songbirds.

BIO-8: Vegetation removal or earthwork shall be minimized during the nesting season (February 1st – August 31st). If vegetation removal is required during the nesting season (February 1st – August 31st), a pre-construction nesting bird survey must be conducted within 7 days prior to vegetation removal. Within 2 weeks of the nesting bird survey, all vegetation cleared by the biologist shall be removed by the contractor.

A minimum 100 foot no-disturbance buffer shall be established around any active nest of migratory birds and a minimum 300 foot no-disturbance buffer shall be established around any nesting raptor species. The contractor must immediately stop work in the buffer area until the appropriate buffer is established and is prohibited from conducting work that could disturb the birds (as determined by the Project biologist and in consultation with wildlife agencies) in the buffer area until a qualified biologist determines the young have fledged. A reduced buffer can be established if determined appropriate by the Project biologist and approved by CDFW.

4.3.2.4. COMPENSATORY MITIGATION FOR WHITE-TAILED KITE

With the implementation of the nesting bird survey avoidance and minimization measure **BIO-8**, direct impacts to white-tailed kite are not anticipated. White-tailed kite and Swainson's hawk share foraging habitats and it is anticipated that mitigation for Swainson's hawk valley grassland foraging habitat, as stated in mitigation measure **BIO-7**, will mitigate for the loss of white-tailed kite habitat. Compensatory mitigation specific to this species is not required or proposed at this time.

4.3.2.5. CUMULATIVE IMPACTS TO WHITE-TAILED KITE

With the implementation of avoidance, minimization and mitigation measures, the Project will avoid potential effects to white-tailed kite. No cumulative impacts to the species are anticipated.

4.3.3. Discussion of Burrowing Owl

The burrowing owl is not a state or federally listed species but is a CDFW Species of Special Concern. The burrowing owl inhabits arid, open areas with sparse vegetation cover such as deserts, abandoned agricultural areas, grasslands, and disturbed open habitats. The species requires friable soils for burrow construction and prefers areas on bare, well drained, level to sloping sites. Typically, the species occupies old small mammal burrows, but has been known to utilize pipes, culverts and nest boxes when preferred burrows are absent. Burrowing owls may use a site for breeding, wintering, foraging, and/or migration stopovers. Breeding season takes place from February 1 to August 31 and wintering takes place from September 1 to January 31.and breeds from March to August (CDFW 2012). The burrowing owl is a year-round species of California and occurs throughout the state up to 5,300 feet where appropriate habitat occurs (Zeiner 1988-1990, CNDDB 2020).

4.3.3.1. Burrowing Owl Survey Results

The BSA does contain potential suitable habitat for the species, and mammal burrows were observed during the April 4, 2018 biological surveys; however, no burrowing owl were observed within the BSA. The nearest recent occurrence is approximately 0.5 mile from the BSA. The species is considered to have a high potential of occurring within the BSA due to the presence of suitable habitat and close proximity to recent occurrences.

4.3.3.2. Project Impacts to Burrowing Owl

The Project will permanently remove approximately 6.2 acres of potentially suitable burrowing owl valley grassland foraging and nesting habitat. However, no current or historic burrowing owl nesting sites were observed during the surveys and the only potentially suitable mammal burrows were identified. With the implementation of the **BIO-9** below, use of Standard BMPs, and proposed compensatory mitigation for Swainson's hawk valley grassland foraging habitat, the Project does not anticipate direct impacts to burrowing owl.

4.3.3.3. Burrowing Owl Avoidance and Minimization Efforts

The following protective measures have been incorporated to minimize and avoid impacts to burrowing owl:

BIO-9: The Project biologist must conduct preconstruction surveys consistent with the 2012 CDFW Staff Report on Burrowing Owl Mitigation. If no burrowing owls are detected, no further action for burrowing owl shall be required. If burrowing owls are observed during the preconstruction surveys, consultation with CDFW shall be required to determine appropriate no-work buffer distances, avoidance strategies and/or mitigation for impacted nest sites.

4.3.3.4. Compensatory Mitigation for Burrowing Owl

With the implementation of species-specific avoidance and minimization measure **BIO-8**, direct impacts to burrowing owls are not anticipated. Burrowing owl and Swainson's hawk share foraging habitats and it is anticipated that mitigation for Swainson's hawk valley grassland foraging habitat, as stated in mitigation measures **BIO-7,** will mitigate for the loss of burrowing owl foraging and nesting habitat. If burrowing owls are observed during the preconstruction surveys, coordination and potential compensatory mitigation will be determined through coordination with CDFW. Compensatory mitigation specific to this species is not required or proposed at this time.

4.3.3.5. Cumulative Impacts to Burrowing Owl

With the implementation of species-specific avoidance and minimization measures, the Project will avoid potential effects to burrowing owl. No cumulative impacts to the species are anticipated.

4.3.4. Discussion of Emergent Wetland Nesting Songbirds

Song sparrow (“Modesto” population)
The song sparrow is not a state of federally listed species but is a CDFW Species of Special Concern. The ecological requirements of the species are largely undescribed, but the species is known to have an affinity for emergent freshwater marshes dominated by tules and cattails (Grinnell and Miller 1944). Marshall (1948) described the primary habitat requirements of several subspecies of Song Sparrow in California as being moderately dense vegetation to supply cover for nest sites, a source of standing or running water, semi-open canopies to allow light, and exposed ground or leaf litter for foraging. Habitat loss, fragmentation, and degradation are the primary threats to the species. Nesting season for the species usually begins in April, and most nesters in California are nonmigratory, with other migrants coming from the north (Shuford and Gardali 2008).

Tricolored blackbird
The tricolored blackbird is not a federally listed species but is listed as a CESA threatened species. This species typically nests in freshwater marsh or other areas with dense, emergent vegetation such as dense cattails or tules, thickets of blackberry and willow. However, when preferred nesting is not available the species has been known to nest in grain (triticale), fiddleneck, thistles etc. (University of California Davis 2015, Meese 2008). Most tricolored blackbirds forage within 3 miles of their colony sites and require some source of water in proximity to their colony location. Preferred foraging habitats include crops such as rice, alfalfa, irrigated pastures, and ripening or cut grain fields, as well as annual grasslands, cattle feedlots, and dairies. The species may also forage in remnant native habitats, including wet and dry vernal pools and other seasonal wetlands, riparian scrub habitats, and open marsh borders (Shuford and Gardali 2008).

Yellow-headed blackbird
The yellow-headed blackbird is not a federal or state listed species but is a CDFW Species of Special Concern. Yellow-headed blackbird tend to nest and roost in dense emergent vegetation, feeding primarily on seeds and cultivated grains, while eating insects through the breeding season. Nesting occurs in dense wetlands of cattails and tules and timed to coincide with maximum emergence of aquatic insects. Breeding season typically lasts from mid-April to late July. The species occurs throughout the Central Valley during breeding season and migrates south during the winter months.

4.3.4.1. Emergent Wetland Nesting Songbird Survey Results

Song sparrow (“Modesto” population)
Song sparrow “Modesto” population was not observed during the biological surveys; however, the BSA does contain potential suitable habitat for the species, including fresh emergent wetland areas within and adjacent to Laguna Creek. These habitats are moderately dense and are dominated by tules and cattails, which the species is known to inhabit for nesting and foraging. The nearest recent occurrence is approximately 5 miles from the BSA within the Stone Lakes National Wildlife Refuge. Due to the presence of potentially suitable nesting and foraging habitat and the proximity to known extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

Tricolored Blackbird
Tricolored blackbird was not observed during the biological surveys; however, The BSA does contain potentially suitable nesting and foraging habitat; however, the species was not observed during the April 4, 2018 biological surveys. There are 6 presumed extant occurrences of the species within 5 miles of the BSA. Due to the presence of suitable nesting and foraging habitat and the number of local extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

Yellow-headed blackbird

Yellow-headed blackbird was not observed during the biological surveys; however, The BSA does contain potentially suitable nesting and foraging habitat; however, the BSA does contain potential suitable habitat for the species, including fresh emergent wetland areas within and adjacent to Laguna Creek. These habitats are moderately dense and are dominated by tules and cattails, which the species is known to inhabit for nesting and foraging. The nearest recent occurrence is approximately 6 miles from the BSA within the Stone Lakes National Wildlife Refuge. Due to the presence of potentially suitable nesting and foraging habitat and the proximity to known extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

4.3.4.2. Project Impacts to Emergent Wetland Nesting Songbirds

The proposed Project would construct a multi-functional access road and new bridges along the Project alignment. The Project would not impact potentially suitable freshwater emergent marsh habitat. Additionally, the Project is anticipated to permanently impact approximately 1.84 acres and temporarily impact 1.71 acres of seasonal wetland. These areas are potentially suitable foraging and nesting habitat for the song sparrow “Modesto” population, tricolored blackbird and yellow-headed blackbird. With the implementation of Project minimization and avoidance measures, use of Standard BMPs, proposed compensatory mitigation for impacts to jurisdictional waters, the Project will not result in take of listed or non-listed special status emergent wetland nesting songbirds. With the avoidance of take, the Project does not anticipate that a CDFW Section 2081 ITP for listed or non-listed emergent wetland nesting songbirds will be necessary.

4.3.4.3. Emergent Wetland Nesting Songbirds Avoidance and Minimization Efforts

Avoidance and minimization measures **BIO-1** through **BIO-3** would avoid and minimize for impacts to wetland foraging/nesting habitat, and **BIO-8** would avoid any direct impact to individuals or nests of the species.

4.3.4.4. Compensatory Mitigation for Emergent Wetland Nesting Songbirds

With the implementation of site-specific avoidance and minimization measure **BIO-1** through **BIO-3**, and **BIO-8**, direct impacts to emergent wetland nesting songbirds is not anticipated. Emergent wetland nesting songbirds and GGS share many habitats and it is anticipated that mitigation for jurisdictional waters and GGS will compensate for the loss of emergent wetland nesting songbird’s habitat. Compensatory mitigation specific to these species is not proposed at this time.

4.3.4.5. Cumulative Impacts to Emergent Wetland Nesting Songbirds

With the implementation of site-specific avoidance and minimization measures, as well as compensatory mitigation for jurisdictional waters and GGS habitat, the Project will avoid and reduce potential effects to emergent wetland nesting songbirds. No cumulative impacts to the species are anticipated.

4.3.5. Discussion of Vernal Pool Crustaceans

Vernal Pool Fairy Shrimp

Vernal pool fairy shrimp (*Branchinecta lynchi*) is a federal-listed threatened species. The vernal pool fairy shrimp is a federally threatened species. This species occupies a variety of different vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, and alkaline grassland valley floor pools. In California, species inhabits portions of Tehama county, south through the Central Valley, and scattered locations in Riverside County and the Coast Ranges. Species is associated with smaller and shallower cool-water vernal pools approximately 6 inches deep and short periods of inundation. In the southernmost extremes of the range, the species occurs in large, deep cool-water pools. Inhabited pools have low to moderate levels of alkalinity and total dissolved solids. The shrimp are temperature sensitive, requiring pools below 50 F to hatch and dying within pools reaching 75 F. Young emerge during cold-weather winter storms.

Vernal Pool Tadpole Shrimp
Vernal pool tadpole shrimp (*Lepidurus packardi*) is a federal-listed endangered species. This species inhabits a variety of vernal pools or other seasonally ponded habitats and emerges soon after these habitats become inundated, typically after the first several storm events of the fall/winter season. The shrimp feeds on microscopic organisms and detritus, reaches maturity, and lays eggs for the next wet season. Vernal pool tadpole shrimp are found in the Central Valley from Shasta County to northern Tulare County, and in the central Coast Range from Solano County to Alameda County (USFWS 2005).

4.3.5.1. VERNAL POOL CRUSTACEANS SURVEY RESULTS

Although no crustaceans were identified during the biological surveys, the species does have the potential to occur within the BSA. There are approximately 0.59 acres of vernal pools, 0.24 acres of vernal swales, and 9.47 acres of seasonal wetland within the BSA. Vernal pool crustaceans have the potential to occur within these habitat types; however, a number of seasonal wetlands within the BSA have been determined unsuitable for the species, due to water quality degradation and flowing water regime that would exclude the species from these habitats.

Unsuitable Habitats
Seasonal wetlands and seasonal wetland swales at the northwestern terminus of the BSA (SW-19, SW-15, SW-14, and SWS-5) are noted as detention basins, used as catchments of nuisance irrigation waters and stormwater retention areas for the housing and assisted living developments to the north, and Creekside Christian Church to the south. These areas are highly modified un-natural areas and deliver deleterious chemicals (pesticides, herbicides, and residues) in nuisance irrigation and stormwater runoff into these aquatic resources. Petroleum products, pesticides, herbicides, and other chemicals can be conveyed into the habitats by overland runoff during the rainy season, thereby adversely affecting water quality and altering the water chemistry (e.g., pH), which may make conditions unsuitable for vernal pool crustaceans (USFWS 2007a [Johnson 2005; C. Johnson 2007; Weston et al., 2005; Weston et al. 2006]). Additionally, years of contamination can also lead to highly toxic levels in sediments in addition to annual degradation of water quality (USFWS 2007b [Weston *et al.* 2004; Amweg *et al.* 2005]). Furthermore, as stormwater detention areas, these aquatic resources have un-suitable deep waters (approximately 1.5 to 3-feet deep) and inundation periods are longer, increasing temperatures unsuitable to hatching and persistence of the species (USFWS 2007). Therefore, these seasonal wetland features are considered unsuitable habitats for vernal pool crustaceans, and the species are presumed absent from these features.

In addition, SW-11, SW-12, SW-13, SWS-6, and SWS-4 have water regime fluctuations and flow patterns to and from Laguna Creek and Whitehouse Creek, and therefore, would not provide suitable inundation periods for either vernal pool crustacean species, as well as the potential for increased predation and increased temperatures from perennial creek waters. Therefore, these seasonal wetland features are also considered unsuitable habitats for vernal pool crustaceans, and the species are presumed absent from these features.

Vernal Pool Fairy Shrimp
The BSA does contain potentially suitable vernal pool and seasonal wetland habitat for the species. The nearest presumed extant occurrence of the species is approximately 4 miles from the BSA. A protocol level survey (ECORP 2007) was conducted for the East Lawn Expansion Project and found no federally listed crustaceans to occur in any of the pools within the East Lawn properties within the BSA. Additionally, two Section 7 consultation efforts have occurred within the Project area: Laguna

Creek Trail – Camden Spur North and South, 2015 (a Biological Opinion issued in 2015 by USFWS on the directly adjacent Laguna Creek Trail – Camden Spur North and South Project (Consultation Code: 08ESMF00-2015-F-0302-1); and East Lawn Expansion Project, 2012 (Consultation Code: 08ESMF00-2012-I-0451-1). Both of these consultation efforts concurred that actions within the Project area may affect, but are not likely to adversely affect fairy shrimp or tadpole shrimp. Due to the presence of potentially suitable habitat and the distance to known extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

Vernal Pool Tadpole Shrimp

The BSA does contain potentially suitable vernal pool and seasonal wetland habitat for the species. The nearest presumed extant occurrence of the species is approximately 4 miles from the BSA. A protocol level survey (ECORP 2007) was conducted for the East Lawn Expansion Project and found no federally listed crustaceans were found to occur in any of the pools within the BSA. However, two Letters of Concurrence issued from USFWS on projects directly adjacent (Laguna Creek Trail – Camden Spur North and South, 2015; and East Lawn Expansion Project, 2012), concurred that even though the no federally-listed crustaceans were found, the Project may affect, but is not likely to adversely affect fairy shrimp or tadpole shrimp. Due to the presence of potentially suitable habitat and the distance to known extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

4.3.5.2. PROJECT IMPACTS TO VERNAL POOL CRUSTACEANS

The vernal pool fairy shrimp and vernal pool tadpole shrimp have been grouped together for the purpose of this impact analysis.

The proposed Project has been designed to avoid all permanent and temporary effects to suitable vernal pool crustacean habitat. However, changes to hydrology due to the increase in impervious surfaces may have indirect impacts to hydrology or biological quality in the suitable habitats. In order to minimize changes to hydrology within the Project area, the Project has been designed with water catchment ditches at the bottom of the berms of the multi-functional corridor. These catchment ditches would minimize and avoid changes of increased runoff reaching adjacent suitable habitats and reduce the potential for changes in hydrology or degradation of water quality.

Though hydrology and water quality of suitable habitats are not anticipated to change due to the proposed Project, grading and other soil disturbance in uplands adjacent to these habitats could result in increased sedimentation from dust movement and/or introduction of invasive plant species, thereby reducing the quality of the habitats. The Project is anticipated to have a total of approximately 0.72 acres of indirect effects to potentially suitable vernal pool invertebrate habitat due to grading and construction activities within 250-feet of suitable habitats (Figure 7. Project Effects to Vernal Pool Crustacean Habitat). Avoidance and minimization measures **BIO-1** through **BIO-3** would avoid and minimize impacts to wetland habitats. In addition to any measures pursuant the Project's permitting requirements, avoidance and minimization measures **BIO-10** and **BIO-11** shall be implemented as part of the Project to further avoid and minimize impacts to potentially suitable vernal pool habitat.

4.3.5.3. VERNAL POOL CRUSTACEANS AVOIDANCE AND MINIMIZATION EFFORTS

The following protective measures have been incorporated to minimize and avoid impacts to vernal pool crustaceans:

BIO-10: All suitable vernal pool crustacean habitat adjacent to the project footprint shall be designated as an ESA and protected with ESA fencing. As part of the ESA fencing installation, protective silt fencing shall be installed between the adjacent vernal pool habitat and the construction area limits to prevent accidental disturbance during construction and to protect water quality within the aquatic habitat during construction.

BIO-11: A Worker Environmental Awareness Program (WEAP) shall be implemented to educate construction workers about the presence of sensitive habitat near the Project area and to instruct them on proper avoidance measures.

4.3.5.4. COMPENSATORY MITIGATION FOR VERNAL POOL CRUSTACEANS

Measure **BIO-12** provides options to provide compensatory mitigation of effects to vernal pool crustaceans, including the option of performing protocol-level surveys, or assuming presence of threatened and endangered species. If special-status vernal pool species are found or presence is assumed, compensation is proposed consistent with the USACE *Programmatic Formal Endangered Species Act Consultation on Issuance of 404 Permits for Projects With Relatively Small Effects on Listed Vernal Pool Crustaceans Within the Jurisdiction of the Sacramento Field Office*, dated February 28, 1996. USACE will consult with the USFWS under Section 7 of FESA shall be initiated through federal nexus during USACE Section 404 permitting processes and impacted suitable habitat shall be mitigated for using an acceptable USACE bank credits or in-lie fee.

BIO-12: The proposed Project shall mitigate for potential impacts to vernal pool crustaceans by conducting USFWS protocol-level surveys, or assuming presence of the species in the Project area. Protocol-level surveys for the vernal pool fairy shrimp and vernal pool tadpole shrimp shall occur in suitable habitats occurring in the proposed Project area and within 250 feet of adjacent suitable habitat. If vernal pool fairy shrimp or vernal pool tadpole shrimp are not detected during the protocol-level surveys and if the USFWS concurs that neither species is present, no further mitigation is required. If either of the species is detected during protocol-level surveys or the presence of the species is assumed in lieu of conducting surveys, and proposed activities will result in direct or indirect impacts to potential habitat, the following measures shall be implemented:

1. Formal consultation with the USFWS shall be initiated under Section 7 of the Endangered Species Act. No direct or indirect impacts to suitable habitat for these species shall occur until Incidental Take authorization has been obtained from the USFWS.

2. For every acre of habitat directly or indirectly affected, at least two vernal pool preservation credits shall be dedicated in a USFWS-approved ecosystem preservation bank (2:1 ratio). With USFWS approval, appropriate payment into an in-lieu fee fund or on-site preservation may be used to satisfy this measure.

3. For every acre of habitat directly affected, at least one vernal pool creation credit shall be dedicated in a USFWS-approved habitat mitigation bank (1:1 ratio). With USFWS approval, appropriate payment into an in-lieu fee fund, on-site creation, or off-site creation may be used to satisfy this measure.

4.3.5.5. CUMULATIVE IMPACTS TO VERNAL POOL CRUSTACEANS

With the implementation of species-specific avoidance, minimization, and mitigation measures, the Project will not contribute to cumulative impacts in the region. No cumulative impacts to the viability of the population of

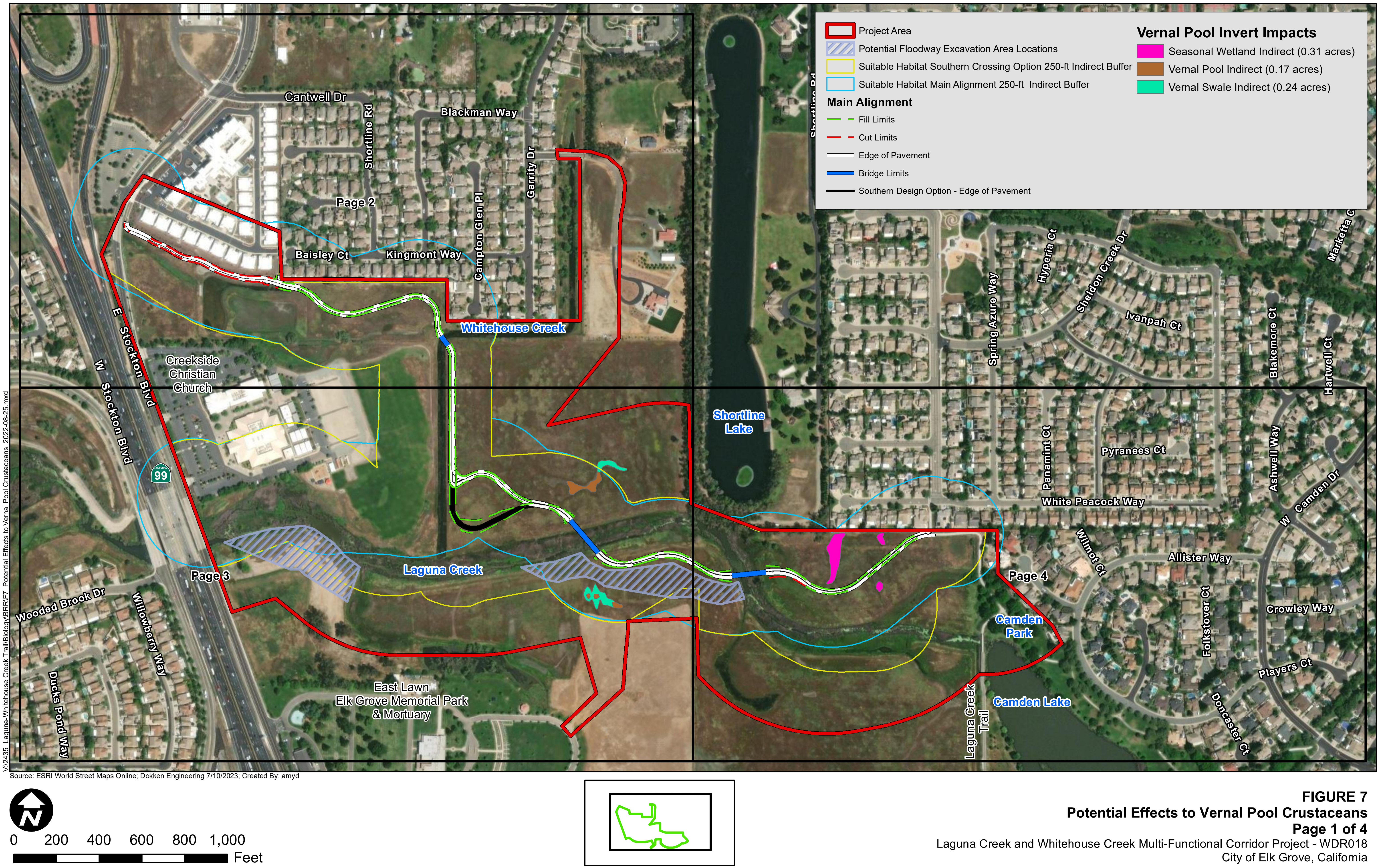
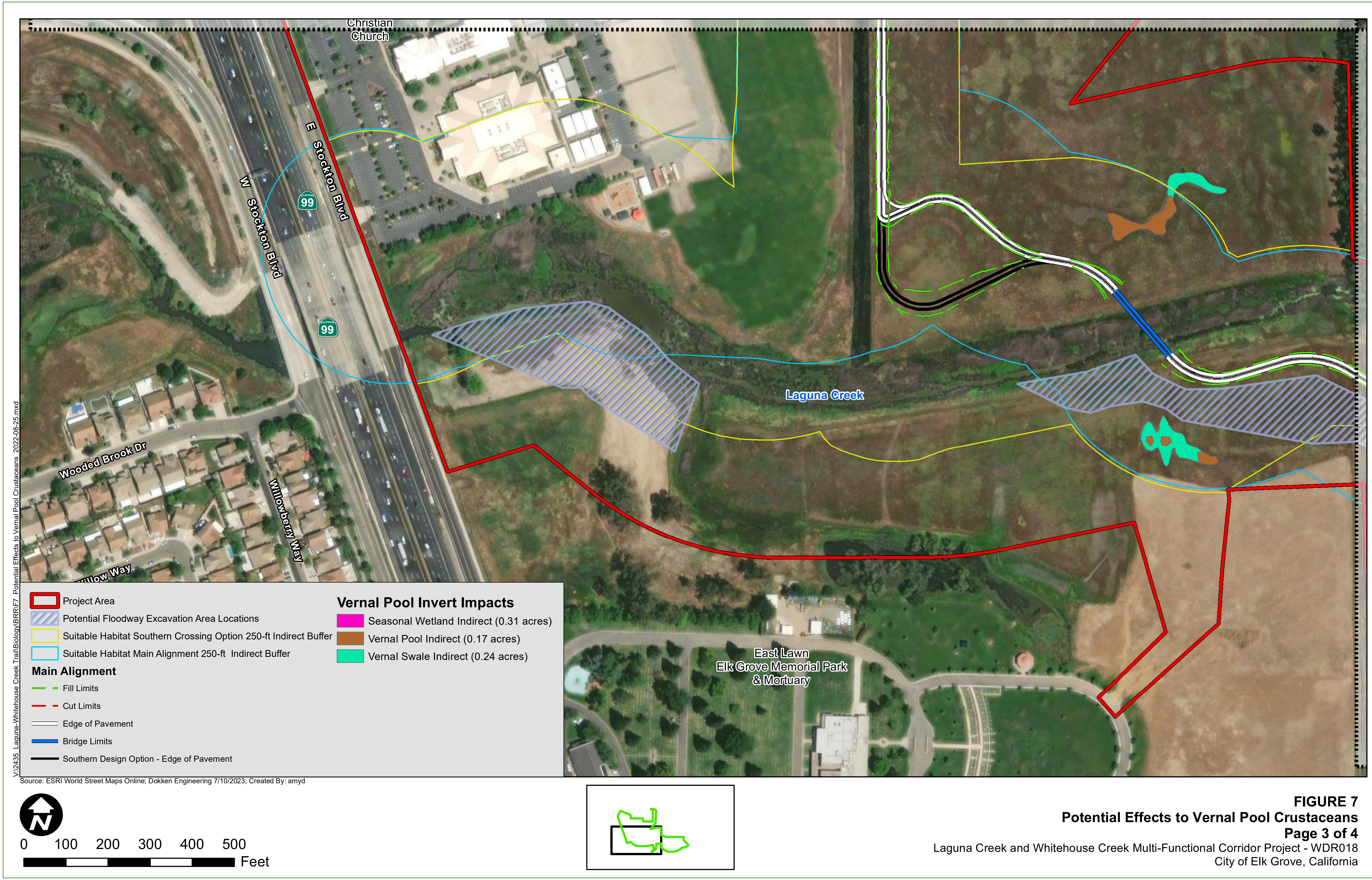


FIGURE 7
Potential Effects to Vernal Pool Crustaceans
Page 1 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

FIGURE 7
Potential Effects to Vernal Pool Crustaceans
Page 2 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California



Source: ESRI World Street Maps Online; Dokken Engineering 7/10/2023; Created By: amyd

FIGURE 7
Potential Effects to Vernal Pool Crustaceans
Page 3 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

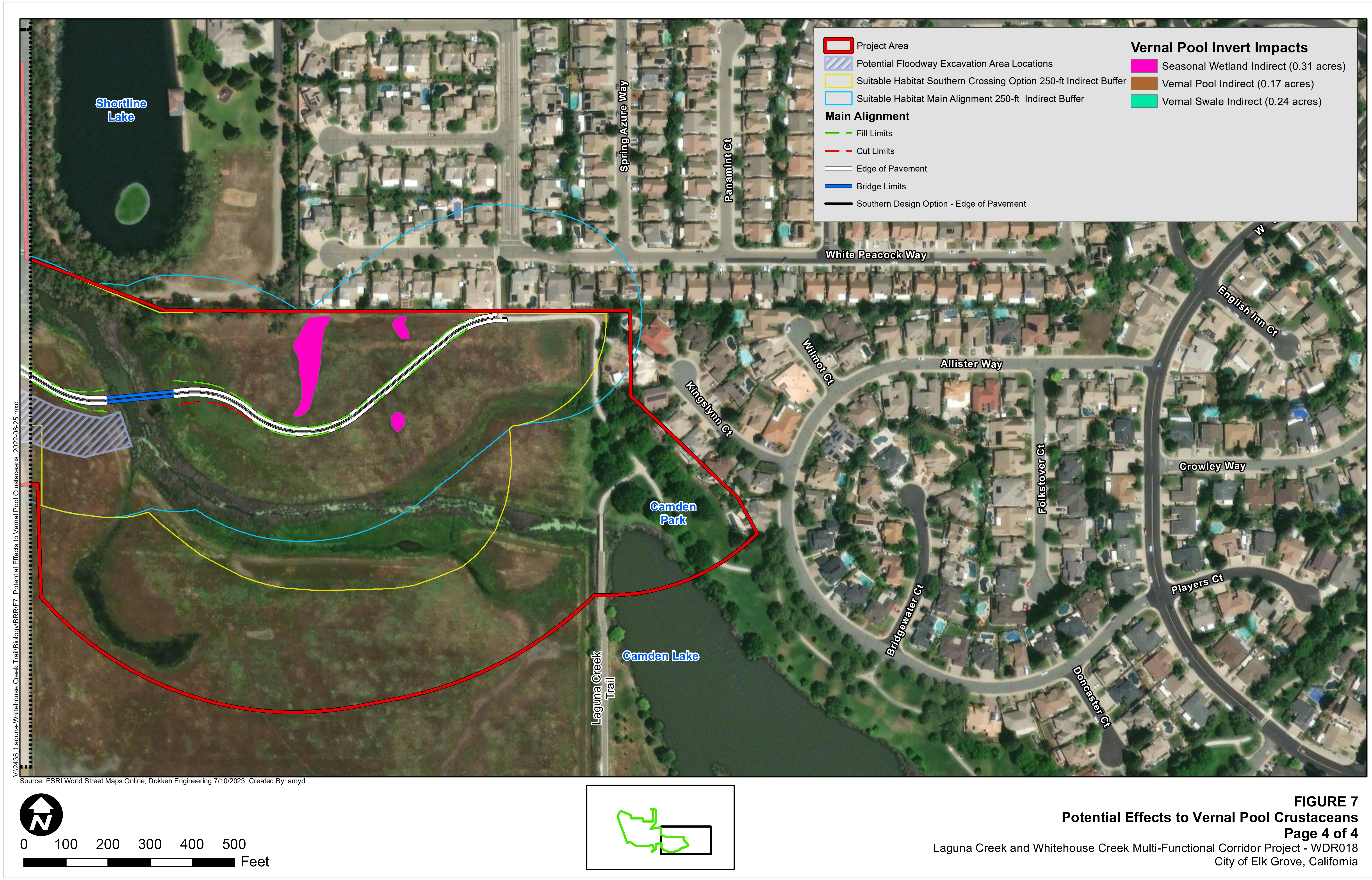


FIGURE 7
Potential Effects to Vernal Pool Crustaceans
Page 4 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

4.3.6. Discussion of Western Pond Turtle

The western pond turtle (WPT) is not a State or Federally listed species but is a CDFW Species of Special Concern. WPTs are native to the west coast and are found from Baja California, Mexico north through Klickitat County, Washington. The WPT is a fully aquatic turtle, inhabiting ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. The species requires suitable basking sites such as logs, rocks and exposed banks and associated upland habitat consisting of sandy banks or grassy open fields for reproduction. The species is omnivorous, consuming aquatic wildlife and vegetation. The WPT is known to hibernate underwater beneath a muddy bottom in colder climates and reproduce from March to August (Zeiner 1990). Nests are generally found in flat areas with low vegetation and dry, hard soil.

4.3.6.1. Western Pond Turtle Survey Results

The BSA does contain suitable aquatic and upland habitat for the species. The species was observed during the April 24-26, 2018 jurisdictional delineation, at the confluence of Whitehouse Creek and Laguna Creek. Due to the presence of suitable habitat and the observation of the species during the jurisdictional delineation, the species is considered present within the BSA.

4.3.6.2. Project Impacts to Western Pond Turtle

The proposed Project would construct a multi-functional access road and new bridges along the Project alignment. The Project is anticipated to permanently impact approximately 0.05 acres of aquatic habitat and approximately 3.72 acres of upland habitat. Additionally, the Project is anticipated to have temporary impacts to approximately 1.72 acres of aquatic habitat, and approximately 1.43 acres of upland habitat. With the implementation of the species-specific avoidance and minimization measures identified below, no direct impacts to WPT are anticipated.

4.3.6.3. Western Pond Turtle Avoidance and Minimization Efforts

The following measures have been incorporated to minimize and avoid impacts to WPTs:

BIO-13: To avoid impacts to western pond turtles, the Project biologist will conduct a pre-construction survey of the Laguna Creek, Whitehouse Creek, and adjacent banks and upland habitats within the Project area. Surveys shall be conducted no more than 24 hours prior to onset of construction. If a turtle is located within the construction area, a qualified biologist will capture the turtle and relocate it to an appropriate habitat a safe distance from the construction site.

BIO-14: If water pumps are used to dewater the Project Area, pump intakes shall be screened and equipped with an energy dissipater to protect aquatic species. The energy dissipater should be large enough to reduce approach velocity to 0.33 feet per second or less, and be enclosed with ½ inch metal screen. The surface area of the energy dissipater shall be determined by dividing the maximum diverted flow, by the allowable approach velocity (example: 1.0 ft^3 per second/ 0.33 feet per second = 3.0 ft^2 surface area).

4.3.6.4. Compensatory Mitigation for Western Pond Turtle

With the implementation of site-specific avoidance and minimization measure **BIO-13** and **BIO-14**, direct impacts to WPTs are not anticipated. The Project will avoid potential impacts to the WPT; compensatory mitigation for impacts to the species is not required or proposed at this time.

4.3.6.5. CUMULATIVE IMPACTS TO WESTERN POND TURTLE

With the implementation of site-specific avoidance and minimization measures, the Project will avoid potential effects to WPTs. No cumulative impacts to the species are anticipated.

4.3.7. Discussion of Western Spadefoot

The western spadefoot is not a state or federally listed species but is a CDFW Species of Special Concern. In California, the species is distributed throughout the Central Valley; along the Coast Ranges in Monterey, San Luis Obispo, and Santa Barbara counties; and in Southern California south of the Transverse Mountains and west of the Peninsular Mountains. Western spadefoot inhabits woodlands and grasslands and is almost entirely terrestrial, only entering water to breed in vernal pools January through May after which the female deposits eggs on emergent vegetation before returning to land. Their diet consists of a variety of insects and earthworms. Western spadefoot estivate through the dry season underground and remain dormant until winter rains soften soils and refill vernal pools (CDFW 2020b).

4.3.7.1. WESTERN SPADEFOOT SURVEY RESULTS

The BSA does contain potentially suitable upland estivation, and aquatic vernal pool habitat for the species. The only recent presumed extant occurrence of the species is approximately 10 miles from the BSA. Due to the presence of potentially suitable habitat and the distance to local presumed extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

4.3.7.2. PROJECT IMPACTS TO WESTERN SPADEFOOT

The proposed Project would construct a multi-functional access road and new bridges along the Project alignment. The Project is not anticipated to permanently impact potentially suitable vernal pool habitat. However, the Project does anticipate approximately 1.84 acres of permanent impacts to potentially suitable wetland habitat, and 3.72 acres of upland habitat. Additionally, the Project is anticipated to have temporary impacts to approximately 1.71 acres of wetland habitat, and approximately 1.43 acres of upland habitat. Furthermore, the Project may contribute to indirect impacts to approximately 0.72 acres of potentially suitable vernal pool and seasonal wetland habitat due to changes in hydrology and/or biophysical conditions of these potentially suitable habitats. With the implementation of the species-specific avoidance and minimization measures identified below, no direct impacts to western spadefoot are anticipated.

4.3.7.3. WESTERN SPADEFOOT AVOIDANCE AND MINIMIZATION EFFORTS

The following measures have been incorporated to minimize and avoid impacts to western spadefoot:

BIO-15: If suitable habitat for western spadefoot toad is to be removed from October through April, a Project biologist shall conduct a preconstruction survey for this species within 50 feet of suitable habitat that is proposed to be impacted. The survey shall be conducted a maximum of one week prior to removal of suitable breeding habitat.

If no spadefoot toads are detected during the survey, no further measures are required. If this species is observed on-site, the Project biologist shall move it to suitable habitat in a safe location outside of the construction zone.

If western spadefoot toads are detected during the preconstruction survey, the Project biologist shall be on-site during initiation of construction activities within 50 feet of suitable habitats and shall provide WEAP training to all personnel working within 50 feet of suitable habitats.

In the event that a western spadefoot toad is observed within an active construction zone, the contractor shall temporarily halt construction activities until a Project biologist has moved the toad to a safe location, within similar habitat, outside of the construction zone.

BIO-16: To allow western spadefoot and other subterranean wildlife enough time to escape initial clearing and grubbing activities, equipment used during initial clearing and grubbing in annual grassland or wetland habitats shall be operated at speeds no greater than 3 miles per hour.

4.3.7.4. COMPENSATORY MITIGATION FOR WESTERN SPADEFOOT

With the implementation of site-specific avoidance and minimization measure **BIO-15** and **BIO-16**, direct impacts to WPTs are not anticipated; therefore, compensatory mitigation for impacts to the species is not required or proposed at this time.

4.3.7.5. CUMULATIVE IMPACTS TO WESTERN SPADEFOOT

With the implementation of site-specific avoidance and minimization measures, the Project will avoid potential effects to western spadefoot. No cumulative impacts to the species are anticipated.

4.3.8. Discussion of Giant Garter Snake

GGS is a federally listed threatened species. GGS is one of the largest garter snakes and is endemic to the wetlands within the Sacramento and San Joaquin valleys. GGS inhabits marshes, sloughs, ponds, small lakes, low gradient streams, and other waterways and agricultural wetlands, such as irrigation and drainage canals and rice fields, and the adjacent uplands (USFWS 2017). GGS feed on small aquatic animals such as fish, tadpoles, and frogs. Essential habitat components for GGS consist of: Wetlands with adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; emergent herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; upland habitat with grassy banks and openings in waterside vegetation for basking; and higher elevation uplands for escape cover (vegetation, burrows) and underground refugia (crevices and small mammal burrows) (Hanson 1980). The GGS breeding season extends through March and April, and females give birth to live young from late July through early September (Hansen and Hansen 1990). At birth, young disperse into dense cover and typically double in size by one year of age, while sexual maturity average three years in males and five years for females. According to studies of marked snakes in the Natomas Basin, snakes moved about 0.25-0.5 miles per day (Hansen and Brode 1993). GGS typically inhabit small mammal burrows for winter dormancy, escape and cover, and also as refuge from extreme heat during their active period. Burrows are typically close to wetland or water sources; however, GGS have been documented using burrows as far as 820 feet from the edge of marsh habitat.

4.3.8.1. GIANT GARTER SNAKE SURVEY RESULTS

On March 6, 2020, GGS specialist Eric Hansen performed a GGS habitat assessment within the project area (Appendix G). During the 2020 survey, Mr. Hansen identified and classified potential GGS habitat within the Project area. According to Mr. Hansen's results, habitat surrounding Laguna Creek is deemed suitable habitat due to a combination of features capable of supporting a permanent population of GGS and adjacent to this suitable habitat is Whitehouse Creek, which is marginal at best. Although the landscape surrounding Laguna Creek is considered suitable, landscape changes and urban development that has taken place in the surrounding area since the last CNDDB record of occurrence may reduce the likelihood of GGS persistence in the region. However, patterns of contemporary occupancy and distribution of GGS is this region remain relatively unexplored, and intensive sampling has not been conducted to my knowledge since prior to 2000. Therefore, the aquatic and upland habitats within the BSA are considered potentially suitable habitat for the species.

The closest known occurrence of the species along Laguna Creek is approximately 1 mile west of the BSA (1987). However, this occurrence is characterized as possibly extirpated. The nearest presumed extant occurrence is approximately 4.3 miles west of the BSA and is separated from the BSA by high density development.

In addition to the 2020 survey, a Biological Opinion issued in 2015 by USFWS on the directly adjacent Laguna Creek Trail – Camden Spur North and South Project (Consultation Code: 08ESMF00-2015-F-0302-1), concurred that due to heavy residential development the project is not likely to adversely affect the snake. Due to the presence of potentially suitable habitat and the distance to known extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

4.3.8.2. PROJECT IMPACTS TO GIANT GARTER SNAKE

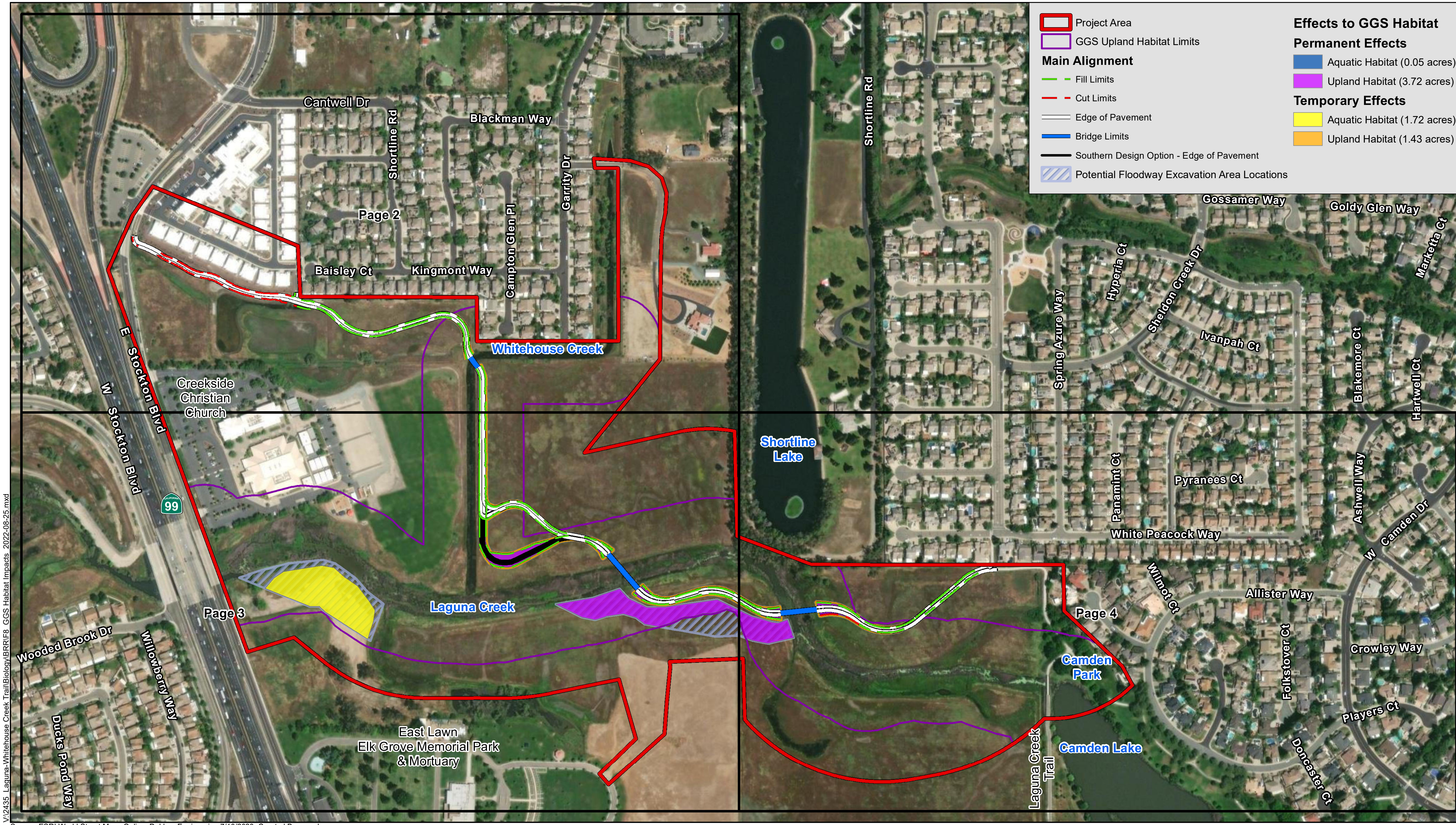
The proposed Project is anticipated to result in temporary and permanent impacts to GGS habitat (Table 5. Project Effects to GGS Habitat; Figure 7. Project Effects to GGS Habitat).

Anticipated temporary effects to GGS habitat would be due to disturbance of approximately 1.43 acres of upland habitat, and 1.72 acres of aquatic habitat. Temporary effects to upland habitat would include vegetation clearing, regrading, staging, access, and other construction activities. These activities are likely to remove vegetative cover and potential basking sites necessary for thermoregulation within the grassland areas adjacent to Laguna Creek and Whitehouse Creek. However, these upland habitats would only be temporarily affected and would be revegetated with native species as part of Project restoration requirements. No temporary effects to aquatic habitat are anticipated.

The proposed Project would result in permanent effects to GGS habitat due to the loss of approximately, 3.72 acres of upland habitat, and 0.05 acres of aquatic habitat (Table 5. Project Effects to GGS Habitat; Figure 8. Project Effects to GGS Habitat). Direct permanent effects would occur due to the placement of fill and the construction of the access road and bridges. Permanent effects to upland habitat would include removal of the grassland dispersal and cover habitat for the new alignment access roadway and bridge abutments. Permanent effects to aquatic habitat would include the removal and filling of marsh and wetland habitat adjacent to Laguna Creek.

Table 5. Project Effects to GGS Habitat

Giant Garter Snake Habitat Type	Temporary Effects (ac)	Permanent Effects (ac)
Upland Habitat	1.43	3.72
Aquatic Habitat	1.72	0.05
Total Habitat	**3.15**	**3.77**



Source: ESRI World Street Maps Online; Dokken Engineering 7/10/2023; Created By: amyd

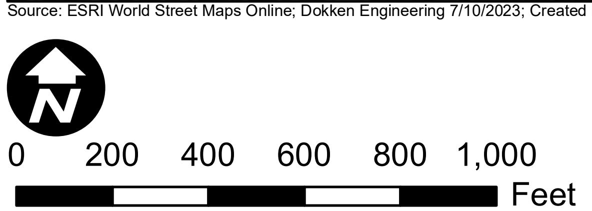


FIGURE 8
GGS Habitat Impacts
Page 1 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

FIGURE 8
GGS Habitat Impacts
Page 2 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

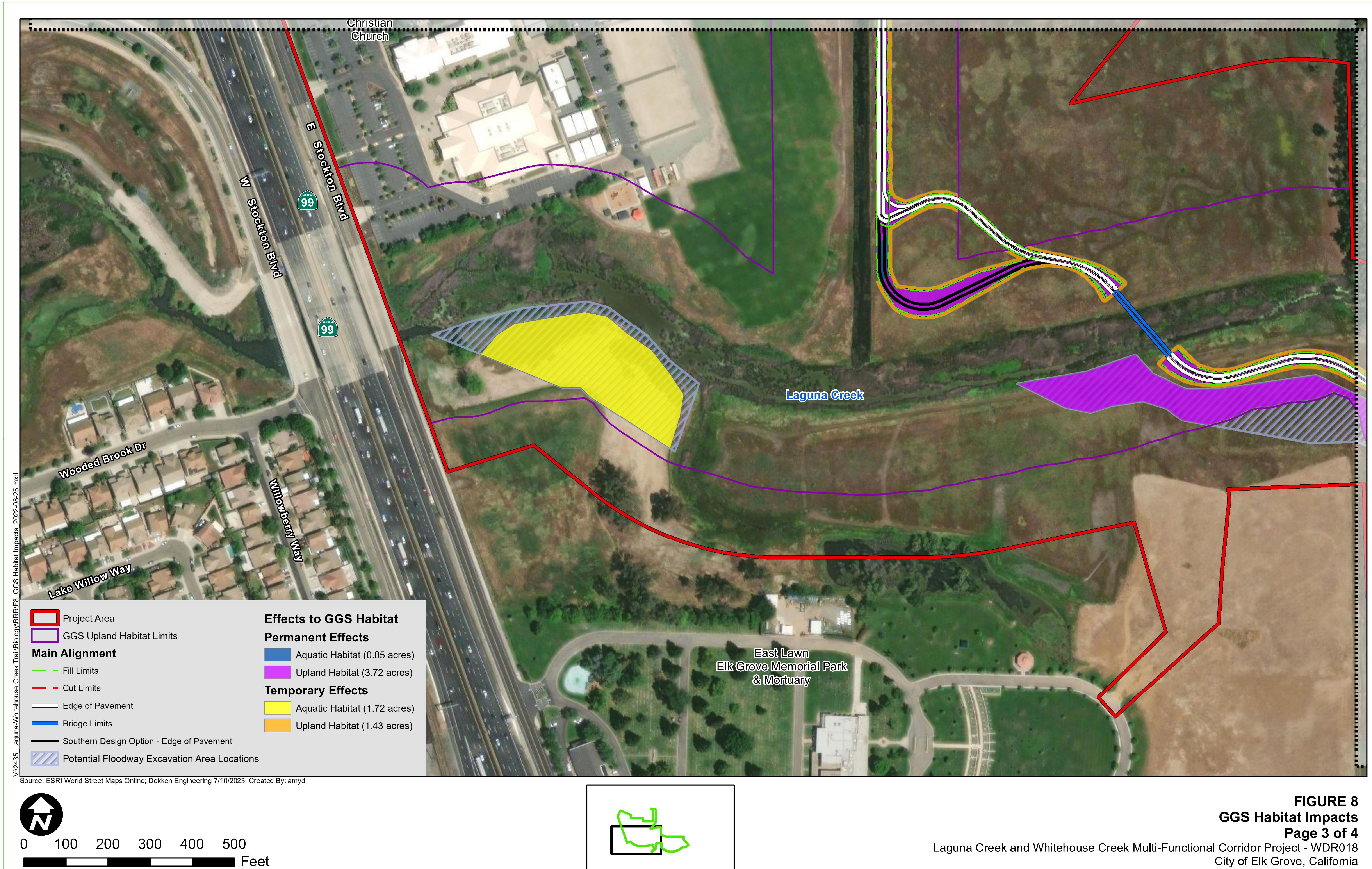
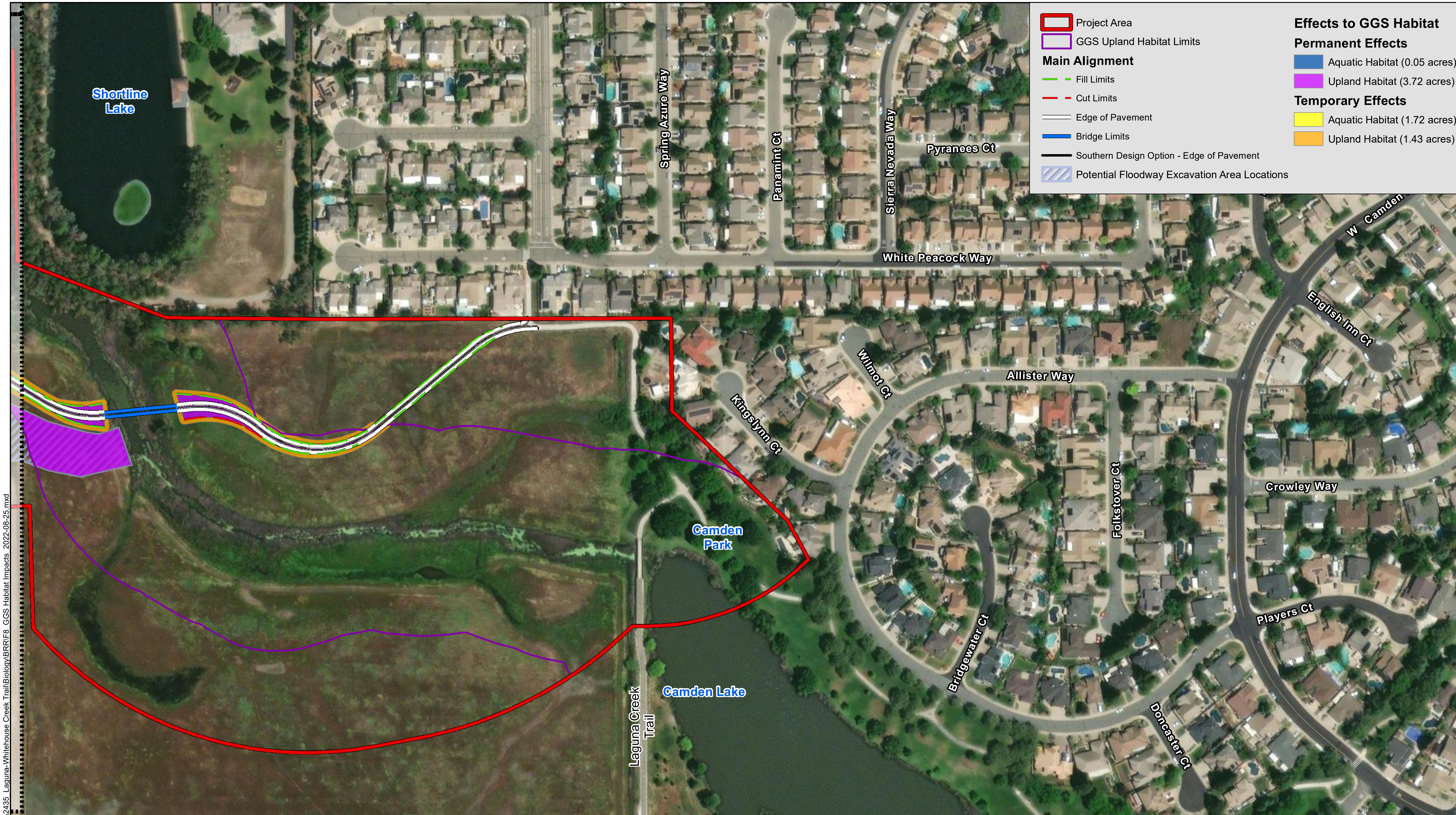


FIGURE 8
GGS Habitat Impacts
Page 3 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California



V:\2435_Laguna-Whitehouse Creek Trail\Biology\BRRIF8_GGS Habitat Impacts_2022-08-25.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 7/10/2023; Created By: amyd

0 100 200 300 400 500 Feet

FIGURE 8
GGS Habitat Impacts
Page 4 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

The proposed Project would result in permanent and temporary effects to GGS habitat; however, the closest known occurrence of the snake in the CNDDB along Laguna Creek is approximately 1 river mile west of the Project area, with another 1 mile beyond. The two occurrences are characterized as possibly extirpated in CNDDB due to heavy residential development in the area. The closest known extant occurrence of the snake in CNDDB along Laguna Creek is approximately 5.4 river miles from the Project area. Additionally, in May 2015, the USFWS issued a Biological Opinion (08ESMF00-2015-F-0302-1) on the Laguna Creek Trail – Camden Spur (North and South) Project, determining a may affect, not likely to adversely affect the GGS. The Camden Spur project is a connecting access point for the proposed Project, and the Project would be within this same planning area of Laguna Creek. Through implementation of avoidance, minimization and mitigation measures for jurisdictional waters, the Project does not anticipate to adversely affect the GGS and through USACE Section 7 consultation would request a letter of concurrence with a likely to affect, not likely to adversely affect determination.

4.3.8.3. Giant Garter Snake Avoidance and Minimization Efforts

The proposed Project cannot avoid affecting potentially suitable GGS aquatic and upland habitat. The following measures have been incorporated into the Project design to minimize potential Project effects to GGS.

BIO-17: Construction activity within habitat should be conducted between May 1st and October 1st. This is the active period for giant garter snakes and direct mortality is lessened, because snakes are expected to actively move and avoid danger. Between October 2 and April 30 contact the U.S. Fish and Wildlife Service Sacramento Office to determine if additional measures are necessary to minimize and avoid take.

BIO-18: Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided giant garter snake habitat within or adjacent to the Project area as Environmentally Sensitive Areas. The area should be avoided by all construction personnel.

BIO-19: Tightly woven erosion control matting (mesh size less than 0.25 inch) or similar material shall be used for erosion control and other purposes at the project site to ensure that snakes are not trapped or become entangled by the erosion control material. The edge of the material shall be buried in the ground to prevent snakes from crawling underneath the material. The use of plastic, monofilament, jute, or similar erosion control netting with mesh sizes larger than 0.25 inch that could entangle snakes will be prohibited.

BIO-20: Construction personnel must receive worker environmental awareness training. Awareness training shall be given by the Project biologist(s) who have experience in giant garter snake natural history. This training instructs workers to recognize giant garter snake and their habitat(s).

BIO-21: 24-hours prior to construction activities, the Project area should be surveyed for giant garter snakes. Survey of the Project area should be repeated if a lapse in construction activity of two weeks or greater has occurred. If a snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. Report any sightings and any incidental take to the U.S. Fish and Wildlife Service Sacramento Office immediately by telephone at (916) 414-6600

BIO-22: Any dewatered habitat must remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling of the dewatered habitat.

BIO-23: After completion of construction activities, remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work includes, as applicable, activities such as replanting species removed from banks or replanting emergent vegetation in the active channel.

4.3.8.4. COMPENSATORY MITIGATION FOR GIANT GARTER SNAKE

Section 7 consultation with USFWS for potential impacts to GGS will occur through federal nexus with the USACE during the CWA Section 404 permitting process. Compensatory mitigation measure **BIO-24** provides options for compensatory mitigation determined during the permitting process and USACE Section 7 consultation with USFWS.

BIO-24: The proposed Project shall mitigate for potential impacts to giant garter snake by one of the following compensatory mitigation strategies:

1. The City shall provide all necessary compensatory mitigation requirements pursuant Section 7 consultation with the USFWS through federal nexus with USACE during Clean Water Act Section 404 permitting process.

2. The City will compensate for the loss of giant garter snake habitat with purchase of required mitigation credits at a USFWS and CDFW approved mitigation bank to offset permanent and temporary impacts. Temporary impacts shall be compensated at 1:1 ratio, and permanent impacts to upland and aquatic GGS habitat shall be compensated at 3:1. Acreages may be adjusted during final design, which would change the total acres of mitigation, but the ratios must stay the same.

4.3.8.5. CUMULATIVE IMPACTS TO GIANT GARTER SNAKE

With the implementation of site-specific avoidance and minimization measures, the Project will avoid potential effects to GGS. No cumulative impacts to the species are anticipated.

4.4. Migratory Birds

Native birds, protected under the MBTA and similar provisions under CFG Code, have the potential to nest within the BSAs and the Project area. To avoid and minimize potential impacts to migratory birds, the following avoidance and minimization measures shall be implemented.

4.4.1. Avoidance and Minimization Measures

With the inclusion of avoidance and minimization measure **BIO-7** discussed in Section 4.3.2., no impacts to migratory birds protected under the MBTA are anticipated.

Chapter 5. Conclusions and Regulatory Determination

5.1. Federal Endangered Species Act Consultation Summary

Vernal Pool Crustaceans

Federally-listed threatened vernal pool fairy shrimp, and federally-listed endangered vernal pool tadpole shrimp were not observed during the biological surveys; however, due to the fact that the proposed project occurs within the range of both species and potentially suitable habitat for the species is present within the BSA, the species does have the potential to occur within the BSA. Direct impacts to vernal pool crustaceans will be avoided; however, indirect impacts to potentially suitable vernal pool crustacean habitat may occur. With the implementation of measures discussed in section 4.1.1.3 and 4.3.5.3; and through Project design avoidance of vernal pool habitat any potential impacts would be reduced to the greatest extent practicable. Prior to completion of the environmental review process, USACE will initiate and complete Section 7 Consultation with USFWS for potential Project related impacts to the species during the Clean Water Act Section 404 permitting process. In compliance with FESA, any additional avoidance and minimization measures or mitigation efforts resulting from the consultation process will be incorporated into the Project design. Considering the avoidance of direct impacts to vernal pool habitat, and only potential indirect effects, it is anticipated that the Project may affect, but is not likely to adversely affect vernal pool fairy shrimp or vernal pool tadpole shrimp.

Giant Garter Snake

Federally-listed threatened GGS was not observed during biological surveys; however, the species has potential to occur within the BSA due to presence of suitable habitat and recent documented regional occurrences. Direct impacts to GGS will be avoided to the greatest extent practicable through the implementation of measures discussed in section 4.3.8.3; however, the Project will involve removal of GGS habitat. Prior to the completion of the environmental review process, USACE will initiate and complete Section 7 Consultation with USFWS for potential Project related impacts to the species during the Clean Water Act Section 404 permitting process. In compliance with FESA, any additional avoidance and minimization measures or mitigation efforts resulting from the consultation process will be incorporated into the Project design. Considering the scale of impact and presumed extirpation of the species within the Project area, it is anticipated that the Project may affect, but is not likely to adversely affect GGS.

5.2. Essential Fish Habitat Consultation Summary

No essential fish habitat is present within the Project limits. No essential fish habitat consultation is required.

5.3. California Endangered Species Act Consultation Summary

Swainson's hawk (State listed as threatened), tricolored blackbird (State listed as threatened), and GGS (State listed as threatened), are considered to have potential of occurring within the BSA. With the inclusion of avoidance and minimization measures, no direct impacts to GGS, Swainson's hawk, or tricolored blackbird are anticipated.

Swainson's Hawk

Swainson's hawk is a State listed threatened species that is known to occur within the Project vicinity. However, the Project vicinity has a lack of suitable nesting habitat, no nesting sites were observed during the biological survey, and no nesting trees with Swainson's hawk will be removed. Considering no Swainson's hawk nesting trees will be removed, the implementation of Project minimization and avoidance measures, use of Standard BMPs, and proposed compensatory mitigation for Swainson's hawk valley grassland foraging habitat, the Project will not result in take of Swainson's hawk. With the avoidance of take, the Project does not anticipate that a CDFW Section 2081 ITP for Swainson's hawk will be necessary. No impacts to the Swainson's hawk are anticipated and further coordination with CDFW under CESA for the species is not required at this time.

Tricolored blackbird

The tricolored blackbird is listed under CESA as a threatened species. This species typically nests in freshwater marsh or other areas with dense, emergent vegetation such as dense cattails or tules, thickets of blackberry and willow. The species or nests were not observed during biological surveys or wetland delineations. With the implementation of Project avoidance and minimization measures (pre-construction nesting bird surveys), and compensatory mitigation for impacts to wetland habitats, the Project does not anticipate take of tricolored blackbird. With the avoidance of take, the Project does not anticipate that a CDFW Section 2081 ITP for tricolored blackbird will be necessary.

Giant Garter Snake

USACE will consult with USFWS through the Section 7 process of FESA for Project related impacts to GGS. The result of this consultation will be a letter of concurrence (Informal Consultation) or BO (Formal Consultation) written by USFWS which specifies conservation measures and includes an incidental take statement for the Project. The statement will include the amount or extent of the take, avoidance/minimization measures, and compensatory mitigation to minimize the take. If CDFW finds that the incidental take statement in the letter of concurrence or BO is consistent with CESA, a consistency determination may be issued under section 2080.1 of the FGC. If CDFW finds that the letter of concurrence or BO is not consistent with CESA, a separate IPT may be required under section 2081(b) of the FGC.

5.4. Wetlands and Other Waters Coordination Summary

The Project will permanently affect a total of approximately 0.40 acres of waters of the United States, state and CDFW jurisdiction. In additional, the Project will have temporary effects to 0.79 acres of waters of the United States, state and CDFW waters.

Prior to work within these areas, the Project will obtain a CWA Section 404 Nationwide Permit from USACE, Section 401 Water Quality Certification from the RWQCB for discharge into state waters, and Section 1600 Streambed Alteration Agreement from CDFW for impacts to waters and wildlife habitat. Because ground disturbance associated with the Project will exceed one acre in size, the Project will be required to obtain a Section 402 Notice of Intent under the National Pollutant Discharge Elimination System from the RWQCB.

5.5. Invasive Species

The following protective measures will be included in the Project plans to ensure that invasive species are not introduced or spread:

BIO-25: Prior to arrival at the Project site and prior to leaving the Project site, construction equipment that may contain invasive plants and/or seeds must be cleaned to reduce the spreading of noxious weeds.

BIO-26: All hydro seed and plant mixes must consist of a biologist approved seed mix.

5.6. Other

5.6.1. Local Wildlife

To prevent harm to local wildlife, the Project will implement the following measures:

BIO-27: The contractor must not use herbicides to control invasive, exotic plants or apply rodenticides during construction.

BIO-28: The contractor must dispose of all food-related trash in closed containers and must remove it from the Project area each day during construction. Construction personnel must not feed or attract wildlife to the Project area.

5.6.2. Migratory Bird Treaty Act

Native birds, protected under MBTA and similar provisions under CFG Code, currently nest or have the potential to nest within the BSA and the Project impact area. During biological surveys, habitat for nesting birds was identified within the BSA. Avoidance and minimization measure **BIO-7** stated in Section 4.3.2 has been incorporated into the Project design to minimize potential impact to migratory birds.

Chapter 6. References

American Ornithologists' Union. 1983. Checklist of North American Birds. 6th ed. Lawrence, KS: Allen Press.

Babcock 1995. Home Range and Habitat use of Breeding Swainson's Hawks in the Sacramento Valley of California.

Barry, S. J. 1995. Vernal Pools on California's Annual Grasslands. Rangelands 17(5):173–175. Available at: <https://journals.uair.arizona.edu/index.php/rangelands/article/view/11264/10537>

Calflora. 2020. Information on wild California plants for conservation, education and appreciation. Available at: calflora.org

CDFW. 2020a. CWHR Life History Accounts and Range Maps. Available at: <http://www.dfg.ca.gov/biogeodata/cwhr/cawildlife.aspx>

CDFW. 2020b. The California Wildlife Habitat Relationship Classification Scheme. Available at: <http://www.dfg.ca.gov/biogeodata/cwhr/wildlife_habitats.asp#Tree>

CDFW. 2018. "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. *"Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*. CDFW, March 2018.

CDFW. 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843 >

CDFW. 1994. Staff Report regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California. Available at: <https://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html>

California Department of Transportation (Caltrans). 2020. Caltrans Water Quality Planning Tool. Available at: <http://svctenvims.dot.ca.gov/wqpt/wqpt.aspx>

California Invasive Plant Council. 2020. The Cal-IPC Inventory. Available at: <https://www.cal-ipc.org/plants/inventory/>

CNDDB. 2020. California Natural Diversity Database, Rarefind 5. Available at:<http://www.dfg.ca.gov/biogeodata/cnddb/>

California Open Lands. 2020. Conserved Lands. Available at: <http://www.californiaopenlands.org/conserved-habitats.html>

City of Elk Grove. 2019. City of Elk Grove General Plan. Available at: <http://www.elkgrovecity.org/city_hall/departments_divisions/planning/land_use_regulations/general_plan_and_community_plans> (accessed 10/15/2019).

City of Elk Grove. 2020. Swainson’s Hawk Program. Available at: <http://www.elkgrovecity.org/city_hall/departments_divisions/planning/resources_and_policies/swainsons_hawk_program>

CNPS, Rare Plant Program.2020. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Available at: <http://www.rareplants.cnps.org> (accessed 10/15/2019).

England, A.S., M.J. Bechard, and C.S. Houston. 1997. Swainson’s Hawk (*Buteo swainsoni*). In: A. Poole and F. Gill (eds.), The Birds of North America, No. 265. The Academy of Natural Sci., Philadelphia, PA, and The American Ornithologists’ Union, Washington, D.C.

Grinnell, J., and Miller, A. H. 1944. The distribution of the birds of California. Pac. Coast Avifauna 27.

Hanson, C.E. 1980. Western aquatic garter snakes in central California: an ecological and evolutionary perspective. Master of Arts these, California State University, Fresno, California.

Hansen, C.E. 1986. Status of the giant garter snake *Thamnophis couchi gigas* (Fitch) in the southern Sacramento Valley during 1986: Final report prepared for the California Department of Fish and Game, Sacramento, California, Standard Agreement no. C-1433, 31 p.

Hansen, C.E. 1988. Review of the status of the giant garter snake (*Thamnophis couchii gigas*) and its supporting habitat during 1986–1987: Final report prepared for the California Department of Fish and Game, Sacramento, California, Contract C-2060, 31 p.

Hansen,C.E. 2020. Giant gartersnake (Thamnophis gigas) Habitat Assessment on the City of Elk Grove’s Laguna Creek / Whitehouse Creek Trail Project, Sacramento County, California.

Hansen, C. E. and J. M. Brode. 1993. Results of relocating canal habitat of the giant garter snake (Thamnophis gigas) during widening of State Route 99/70 in Sacramento and Sutter counties, California. Final report for Caltrans Interagency Agreement 03E325 (FG7550)(FY87/88-91-92). Unpublished. 36 pp.

Hickman, James C. 1996. The Jepson Manual, Higher Plants of California. University of California Press. Berkley, CA.

Jepson Eflora. 2020. Jepson eFlora: Geographic subdivisions. Available at: <http://ucjeps.berkeley.edu/eflora/geography.html>

Marshall, J. T., Jr. 1948. Ecologic races of Song Sparrows in the San Francisco Bay Region. Part I. Habitat and abundance. Condor 50:193–215.

Meese, Robert J, Ph.D. 2008. Detection, Monitoring, and Fates of Tricolored Blackbird Colonies in 2008 in the Central Valley of California. Available at: <http://tricolor.ice.ucdavis.edu/node/4602>

Natural Resources Conservation Service (NRCS). 2018. Custom Soil Resource Report for Sacramento County, California – WDR018-LCWC. Available at: <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx> (accessed 5/21/2018).

National Marines Fisheries Service (NMFS). 2019. California Species List Tools. Available at: http://www.westcoast.fisheries.noaa.gov/maps_data/california_species_list_tools.htm (accessed 10/15/2019).

RWQCB. 2018. Storm Water Program – MS4 Municipal Permits. Available at: <https://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/>

Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentVersionID=19850>

University of California, Davis. 2016. Tricolored Blackbird Portal. Information Center for the Environment, University of California, Davis. Available at: <http://tricolor.ice.ucdavis.edu/>

U.S. Climate Data. 2020. U.S. Climate Data-Sacramento, California. Available at: <http://www.usclimatedata.com/climate/sacramento/california/united-states/usca1197>

USACE- Environmental Laboratory. 1987. Wetlands Delineation Manual Wetlands Research Program Technical Report Y-87-1, Final Report, January 1987, Waterways Experiment Station, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199. Available at: <http://el.erdc.usace.army.mil/elpubs/pdf/wlman87.pdf>.

USACE. 2007. Regulatory Branch (SPK-2004-00629). Approved Jurisdictional Delineation for the East Lawn Expansion Project.

USACE. 2008a. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual. U.S. Army Corps of Engineers – Engineering Research and Development Center.

USACE. 2008b. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). U.S Army Corps of Engineers – Engineering Research and Development Center. Wetlands Regulatory Assistance Program.

USACE. 2016. Arid West 2016 Regional Wetland Plant List. Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. *The National Wetland Plant List*: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X. Available at: <http://wetland-plants.usace. army.mil/>

USDA. 2007. Ecological Subregions: Sections and Subsections for the conterminous United States. Available at: <https://www.fs.usda.gov/treesearch/pubs/48672>

USFWS. 2020. Official Species List: Sacramento Fish and Wildlife Office. Available at: <http://www.fws.gov/sacramento/>

USFWS. 2017. Recovery Plan for the Giant Garter Snake (Thamnophis gigas). U.S Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. Vii + 71 pp.

USFWS. 2007a. Vernal Pool Tadpole Shrimp (*Lepidurus packardi*) 5 Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service. Sacramento Fish and Wildlife Office. Sacramento, California. September 2007.

USFWS. 2007a. Vernal Pool Fairy Shrimp (*Branchinecta lynchi*) 5 Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service. Sacramento Fish and Wildlife Office. Sacramento, California. September 2007.

USFWS. 2005. Endangered and Threatened Wildlife and Plants; Final Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants in California and Southern Oregon; Evaluation of Economic Exclusions From August 2003 Final Designation. Sacramento Fish and Wildlife Office. Available at <http://www.gpo.gov/fdsys/pkg/FR-2005-08-11/pdf/05-15569.pdf#page=1>

U.S. Fish and Wildlife Service and California Department of Fish and Game. Tricolored Blackbird status update and management guidelines. 97-099. Sacramento, CA.: E.C. Beedy and W.J. Hamilton III. 1997.

Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. CDFW, Sacramento, California.

Appendix A USFWS Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: April 22, 2020
Consultation Code: 08ESMF00-2017-SLI-0085
Event Code: 08ESMF00-2020-E-05206
Project Name: Laguna Creek Trail Project

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2017-SLI-0085

Event Code: 08ESMF00-2020-E-05206

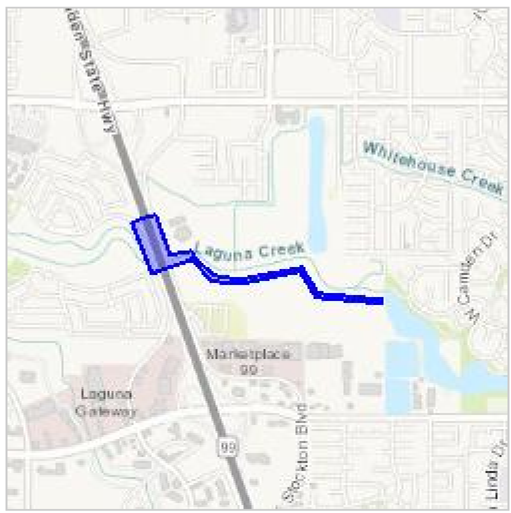
Project Name: Laguna Creek Trail Project

Project Type: RECREATION CONSTRUCTION / MAINTENANCE

Project Description: Construction of new 4,100 long trail segment and bridge to close the gap between the Whitehouse Creek Trail and Laguna Creek Trail

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/38.43078237010417N121.39794668712466W



Counties: Sacramento, CA

Endangered Species Act Species

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Reptiles

NAME	STATUS
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850 Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Appendix B CNDDB Species List

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Florin (3812144) OR Elk Grove (3812143) OR Sacramento East (3812154) OR Sacramento West (3812155) OR Galt (3812133) OR Bruceville (3812134) OR Courtland (3812135) OR Carmichael (3812153) OR Clarksburg (3812145))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Ahart's dwarf rush *Juncus leiospermus var. ahartii*	PMJUN011L1	None	None	G2T1	S1	1B.2
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
bank swallow *Riparia riparia*	ABPAU08010	None	Threatened	G5	S2	
black-crowned night heron *Nycticorax nycticorax*	ABNGA11010	None	None	G5	S4	
Boggs Lake hedge-hyssop *Gratiola heterosepala*	PDSCR0R060	None	Endangered	G2	S2	1B.2
Bolander's water-hemlock *Cicuta maculata var. bolanderi*	PDAPI0M051	None	None	G5T4T5	S2?	2B.1
bristly sedge *Carex comosa*	PMCYP032Y0	None	None	G5	S2	2B.1
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S3	SSC
California black rail *Laterallus jamaicensis coturniculus*	ABNME03041	None	Threatened	G3G4T1	S1	FP
California linderiella *Linderiella occidentalis*	ICBRA06010	None	None	G2G3	S2S3	
California tiger salamander *Ambystoma californiense*	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
chinook salmon - Central Valley spring-run ESU *Oncorhynchus tshawytscha pop. 6*	AFCHA0205A	Threatened	Threatened	G5	S1	
chinook salmon - Sacramento River winter-run ESU *Oncorhynchus tshawytscha pop. 7*	AFCHA0205B	Endangered	Endangered	G5	S1	
Coastal and Valley Freshwater Marsh *Coastal and Valley Freshwater Marsh*	CTT52410CA	None	None	G3	S2.1	
Cooper's hawk *Accipiter cooperii*	ABNKC12040	None	None	G5	S4	WL
Crotch bumble bee *Bombus crotchii*	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	
Delta mudwort *Limosella australis*	PDSCR10030	None	None	G4G5	S2	2B.1
Delta tule pea *Lathyrus jepsonii var. jepsonii*	PDFAB250D2	None	None	G5T2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
double-crested cormorant *Phalacrocorax auritus*	ABNFD01020	None	None	G5	S4	WL
dwarf downingia *Downingia pusilla*	PDCAM060C0	None	None	GU	S2	2B.2
Elderberry Savanna *Elderberry Savanna*	CTT63440CA	None	None	G2	S2.1	
Ferris' milk-vetch *Astragalus tener var. ferrisiae*	PDFAB0F8R3	None	None	G2T1	S1	1B.1
ferruginous hawk *Buteo regalis*	ABNKC19120	None	None	G4	S3S4	WL
giant gartersnake *Thamnophis gigas*	ARADB36150	Threatened	Threatened	G2	S2	
golden eagle *Aquila chrysaetos*	ABNKC22010	None	None	G5	S3	FP
great blue heron *Ardea herodias*	ABNGA04010	None	None	G5	S4	
great egret *Ardea alba*	ABNGA04040	None	None	G5	S4	
Great Valley Cottonwood Riparian Forest *Great Valley Cottonwood Riparian Forest*	CTT61410CA	None	None	G2	S2.1	
Great Valley Mixed Riparian Forest *Great Valley Mixed Riparian Forest*	CTT61420CA	None	None	G2	S2.2	
Great Valley Valley Oak Riparian Forest *Great Valley Valley Oak Riparian Forest*	CTT61430CA	None	None	G1	S1.1	
hairy water flea *Dumontia oregonensis*	ICBRA23010	None	None	G1G3	S1	
Heckard's pepper-grass *Lepidium latipes var. heckardii*	PDBRA1M0K1	None	None	G4T1	S1	1B.2
hoary bat *Lasiurus cinereus*	AMACC05030	None	None	G5	S4	
least Bell's vireo *Vireo bellii pusillus*	ABPBW01114	Endangered	Endangered	G5T2	S2	
legenere *Legenere limosa*	PDCAM0C010	None	None	G2	S2	1B.1
longfin smelt *Spirinchus thaleichthys*	AFCHB03010	Candidate	Threatened	G5	S1	
marsh skullcap *Scutellaria galericulata*	PDLAM1U0J0	None	None	G5	S2	2B.2
Mason's lilaeopsis *Lilaeopsis masonii*	PDAPI19030	None	Rare	G2	S2	1B.1
merlin *Falco columbarius*	ABNKD06030	None	None	G5	S3S4	WL

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
midvalley fairy shrimp *Branchinecta mesovallensis*	ICBRA03150	None	None	G2	S2S3	
Northern Hardpan Vernal Pool *Northern Hardpan Vernal Pool*	CTT44110CA	None	None	G3	S3.1	
pappose tarplant *Centromadia parryi ssp. parryi*	PDAST4R0P2	None	None	G3T2	S2	1B.2
Peruvian dodder *Cuscuta obtusiflora var. glandulosa*	PDCUS01111	None	None	G5T4?	SH	2B.2
purple martin *Progne subis*	ABPAU01010	None	None	G5	S3	SSC
Ricksecker's water scavenger beetle *Hydrochara rickseckeri*	IICOL5V010	None	None	G2?	S2?	
Sacramento Orcutt grass *Orcuttia viscida*	PMPOA4G070	Endangered	Endangered	G1	S1	1B.1
Sacramento perch *Archoplites interruptus*	AFCQB07010	None	None	G2G3	S1	SSC
Sacramento splittail *Pogonichthys macrolepidotus*	AFCJB34020	None	None	GNR	S3	SSC
Sacramento Valley tiger beetle *Cicindela hirticollis abrupta*	IICOL02106	None	None	G5TH	SH	
saline clover *Trifolium hydrophilum*	PDFAB400R5	None	None	G2	S2	1B.2
Sanford's arrowhead *Sagittaria sanfordii*	PMALI040Q0	None	None	G3	S3	1B.2
side-flowering skullcap *Scutellaria lateriflora*	PDLAM1U0Q0	None	None	G5	S2	2B.2
slender Orcutt grass *Orcuttia tenuis*	PMPOA4G050	Threatened	Endangered	G2	S2	1B.1
song sparrow ("Modesto" population) *Melospiza melodia*	ABPBXA3010	None	None	G5	S3?	SSC
steelhead - Central Valley DPS *Oncorhynchus mykiss irideus pop. 11*	AFCHA0209K	Threatened	None	G5T2Q	S2	
Suisun Marsh aster *Symphyotrichum lentum*	PDASTE8470	None	None	G2	S2	1B.2
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S3	
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T2	S2	
Valley Oak Woodland *Valley Oak Woodland*	CTT71130CA	None	None	G3	S2.1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	
vernal pool tadpole shrimp *Lepidurus packardi*	ICBRA10010	Endangered	None	G4	S3S4	
watershield *Brasenia schreberi*	PDCAB01010	None	None	G5	S3	2B.3
western pond turtle *Emys marmorata*	ARAAD02030	None	None	G3G4	S3	SSC
western spadefoot *Spea hammondii*	AAABF02020	None	None	G3	S3	SSC
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
white-tailed kite *Elanus leucurus*	ABNKC06010	None	None	G5	S3S4	FP
woolly rose-mallow *Hibiscus lasiocarpos var. occidentalis*	PDMAL0H0R3	None	None	G5T3	S3	1B.2
yellow-headed blackbird *Xanthocephalus xanthocephalus*	ABPBXB3010	None	None	G5	S3	SSC

Record Count: 69

Appendix C NOAA Fisheries Species List

Andrew Dellas

From: Andrew Dellas
Sent: Wednesday, April 22, 2020 9:39 AM
To: nmfswcrca.specieslist@noaa.gov
Subject: Laguna Creek/Whitehouse Creek Multi-Functional Corridor Project

Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project
City of Elk Grove

Quad Name **Florin**
Quad Number **38121-D4**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) - **X**
SRWR Chinook Salmon ESU (E) - **X**
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - **X**
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH - **X**
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds
See list at left and consult the NMFS Long Beach office
562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Andrew Dellas, M.S.
Associate Environmental Planner / Biologist
Dokken Engineering
Phone: 916.858.0642
Email: adellas@dokkenengineering.com
110 Blue Ravine Road, Suite 200 | Folsom, CA 95630

Appendix D CNPS Species List

CNPS California Native Plant Society

Inventory of Rare and Endangered Plants

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

22 matches found. *Click on scientific name for details*

Search Criteria

California Rare Plant Rank is one of [1A, 1B, 2A, 2B, 3], Found in Quads 3812154, 3812155, 3812153, 3812144, 3812143, 3812135 3812134 and 3812133;

Modify Search Criteria Export to Excel Modify Columns Modify Sort Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Astragalus tener var. ferrisiae	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	1B.1	S1	G2T1
Brasenia schreberi	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	Jun-Sep	2B.3	S3	G5
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	2B.1	S2	G5
Centromadia parryi ssp. parryi	pappose tarplant	Asteraceae	annual herb	May-Nov	1B.2	S2	G3T2
Cicuta maculata var. bolanderi	Bolander's water-hemlock	Apiaceae	perennial herb	Jul-Sep	2B.1	S2?	G5T4T5
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	Convolvulaceae	annual vine (parasitic)	Jul-Oct	2B.2	SH	G5T4?
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2	S2	GU
Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	Apr-Aug	1B.2	S2	G2
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Juglans hindsii	Northern California black walnut	Juglandaceae	perennial deciduous tree	Apr-May	1B.1	S1	G1
Juncus leiospermus var. ahartii	Ahart's dwarf rush	Juncaceae	annual herb	Mar-May	1B.2	S1	G2T1
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	May-Jul(Aug-Sep)	1B.2	S2	G5T2
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
Lepidium latipes var. heckardii	Heckard's pepper-grass	Brassicaceae	annual herb	Mar-May	1B.2	S1	G4T1
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	1B.1	S2	G2
Orcuttia tenuis	slender Orcutt grass	Poaceae	annual herb	May-Sep(Oct)	1B.1	S2	G2
Orcuttia viscida	Sacramento Orcutt grass	Poaceae	annual herb	Apr-Jul(Sep)	1B.1	S1	G1
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3
Scutellaria galericulata	marsh skullcap	Lamiaceae	perennial rhizomatous herb	Jun-Sep	2B.2	S2	G5
Scutellaria lateriflora	side-flowering skullcap	Lamiaceae	perennial rhizomatous herb	Jul-Sep	2B.2	S2	G5
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2	S2	G2
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	1B.2	S2	G2

Suggested Citation

California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 22 April 2020].

Appendix E Representative Photographs


Representative Photograph 1. View of seasonal wetland (SW-14) (Waters of the U.S.). View is facing southeast.


Representative Photograph 2. View of seasonal wetland (SW-14) (Waters of the U.S.). View is facing east.

Representative Photograph 3. View of Seasonal Wetland Swale (SWS-5) (Waters of the U.S.). View is facing north.

Representative Photograph 4. View of Whitehouse Creek (Waters of the U.S.). View is facing southeast.

Representative Photograph 5. View of Vernal Pool (VP-7) (Waters of the U.S.). View is facing west.

Representative Photograph 6. View of Emergent Marsh (EM-1) (Waters of the U.S.). View is facing northwest.


Representative Photograph 7. View of Laguna Creek (Waters of the U.S.). View is facing east.


Representative Photograph 8. View of Laguna Creek (Waters of the U.S.). View is facing north toward Shortline Lake.

Representative Photograph 9. View of Seasonal Wetland Swale (SWS-1) in foreground and Vernal Pool (VP-1) in background (both Waters of the U.S.). View is facing south.

Representative Photograph 10. View of Seasonal Wetland (SW-8) (Waters of the U.S.). View is facing southeast.

Appendix F Botanical Survey Report

BOTANICAL SURVEY REPORT

Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project
October 2019

Prepared By:
Dokken Engineering
110 Blue Ravine Road, Suite 200
Folsom, California 95630
(916) 858-0642

Prepared For:
California Department of Fish and Wildlife
Region 2 – North Central Region
1701 Nimbus Road
Rancho Cordova, California 95670
(916) 358-2912

Executive Summary

The City of Elk Grove (City) is proposing to construct the Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project (Project) located within the City in Sacramento County, California (**Appendix A – Project Vicinity and Project Location Maps**). The proposed Project will involve construction of a 2.2-mile long multi-functional corridor along the banks and within the floodplain of Laguna and Whitehouse Creeks, located between East Stockton Boulevard and Camden Park and will result in impacts to Waters of the U.S.

Prior to field work, literature research was conducted through the United States Fish and Wildlife Service (USFWS) Species List (USFWS 2018), California Department of Fish and Wildlife (CDFW) *California Natural Diversity Database* (CNDDB) (CDFW 2018), the California Native Plant Society (CNPS 2018) *Electronic Inventory of Rare and Endangered Plants* (**Appendix B: Species Lists**) to identify habitats and special-status species having the potential to occur within the BSA. General biological surveys and habitat assessments were conducted on April 4, 2018 which identified suitable habitat for five (5) special status plant species within the BSA. Additional botanical plant surveys were conducted on April 24-26 and June 21, 2018. Botanical field surveys were conducted following the methods outlined in the most recent CDFW *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (2018). Botanical surveys were conducted in the field at times when plants were both evident and identifiable, during flowering and fruiting stages according to the rare plants blooming periods (Jepson eFlora 2018). This included multiple visits in early, mid and late season to capture the floristic diversity within the Biological Study Area (BSA) and to determine if special status plants were present. No adverse conditions within the BSA were identified and all surveys were conducted during appropriate weather and temperature conditions. The following is a list of survey dates and field surveys present:

- April 4, 2018 – Andrew Dellas and Scott Salembier
- April 24th, 25th, and 26th, 2018 –Andrew Dellas and Courtney Owens, and;
- June 21st, 2018 – Andrew Dellas and Scott Salembier.

Sensitive natural communities were identified within the BSA and included: vernal pools, seasonal wetlands, and emergent marsh communities. These areas were identified during habitat assessments; however, none of the special status plants were identified within these or any other natural communities within the BSA. The Project will provide Best Management Practices (BMPs), and avoidance and minimization measures to reduce any chance for impacts to special status plants within the BSA.

Table of Contents

Acronyms and Abbreviations

BSA	Biological Study Area
Cal-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
IS/MND	Initial Study/Mitigated Negative Declaration
NEPA	National Environmental Policy Act
NRCS	National Resource Conservation Service
OHWM	Ordinary High Water Mark
USFWS	United States Fish and Wildlife Service

Chapter 1. Introduction

The proposed Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project (Project) is located within the City of Elk Grove, Sacramento County, California (**Appendix A – Project Vicinity and Project Location Maps**).

The Survey Area for this botanical Survey Report includes all areas within the Biological Study Area (BSA). Prior to field surveys, the BSA was defined as the proposed project impact area and a 250-foot buffer from the City's existing floodway easement to accommodate the design and facilitate construction.

The BSA encompasses approximately 125 acres and includes approximately 4,000 linear feet of Laguna Creek from East Stockton Boulevard to Camden Lake. The BSA is approximately 4,300 feet (0.8 miles) from east to west and approximately 1,700 feet (0.33 miles) from north to south. The western terminus of the Project is at Creekside Christian Church at 8939 E. Stockton Boulevard, Elk Grove, California 95624, and the eastern terminus is the current end of the Laguna Creek bike path near the intersection of Beckington Drive and White Peacock Way.

The purpose of this report is to identify and describe natural communities and botanical resources within the BSA, and provide botanical survey results to determine potential Project effects to special status plant species. During the development of California Environmental Quality Act (CEQA) environmental studies and the Initial Study with Proposed Mitigated Negative Declaration (IS/MND) potential Project impacts will also be identified and evaluated. The IS/MND is anticipated for approval August 2018.

This report facilitates efforts to:

1. Avoid or minimize impacts to special status plant species and sensitive natural habitats project design process.
2. Document potential special status plant species that may occur within the Project BSA.
3. Provide results of botanical survey efforts within the BSA.

1.1 Project Description

The Project would be constructed in two phases. Phase I of the Project would include construction of a maintenance access road (paved with no striping) from the existing Laguna Creek Trial multi-use corridor, located south of the intersection of Beckington Drive and White Peacock Way, to a connection at East Stockton Boulevard approximately 750 feet south of the intersection of East Stockton Boulevard and Cantwell Drive. The maintenance access road would be constructed above the 10-year flood plain to provide City maintenance crews accessibility to Laguna and Whitehouse Creeks, especially during storm events. The maintenance access road would consist of 12 to 16 feet of pavement with unpaved shoulders ranging from 2 to 3 feet, and where determined feasible, single span concrete slab bridges providing necessary access across Laguna and Whitehouse Creeks.

Phase II of the Project would consist of converting the maintenance access road into a Class 1 multi-use trail corridor connection between the Camden Park and East Stockton Boulevard, with striping and trail amenities incorporated as necessary. Phase II of the Project would complete a gap within the trail system in accordance with the City's Bicycle, Pedestrian, and Trails Master Plan.

A future phase, Phase III, may be constructed which would preserve, rehabilitate, and enhance the creeks and adjacent wetlands; however, Phase 3 is not part of this Project and will be subject to environmental review at a later time. Permanent right-of-way acquisitions and temporary construction easements are needed where the multi-functional corridor passes through privately-owned parcels.

This Project is funded through the City's Storm Drainage Master Plan and is subject to compliance with the California Environmental Quality Act (CEQA). The lead agency for CEQA compliance is the City. The Project is also subject to compliance with the National Environmental Policy Act (NEPA) due to anticipated federal permitting through the U.S. Army Corps of Engineers federal nexus during the Clean Water Act Section 404 permitting process for project impacts to waters of the U.S.

1.1.1. Purpose

The proposed project would construct approximately 2.2 miles of multi-function corridor to provide maintenance access within the City's floodway easement along Laguna Creek. Additionally, as part of Phase 2 of the Project, the maintenance access road would develop and link a disconnected section of the Laguna Creek Trail system.

1.1.2. Need

The Project is needed to provide maintenance access to the reaches of Laguna Creek and Whitehouse Creek from East Stockton Boulevard to the Camden Park.

1.2. Description of the Existing Physical and Biological Conditions

The following sections discuss ecological conditions of the region and biological resources present within the BSA.

1.2.1. Physical Conditions

1.2.1.1. Topography

The BSA is within the USGS Elk Grove 7 ½ Minute Quadrangle. The Project area occurs within a single distinct topographic region of valley floor. The topograph4y of the valley floor consists of low-elevation fluvial plains formed on nonmarine sedimentary rock with gently rolling terrain located on the Sacramento valley floor. The BSA occurs between the approximate elevations of 45-50 feet above mean sea level.

1.2.1.2. Soils

The Natural Resource Conservation Service (NRCS) Custom Soil Resource Report for the Project (NRCS 2018 – **Appendix A. NRCS Report**) identifies soils within the BSA as:

- Bruella sandy loam, 0 to 2 percent slopes (13.5%)
- Dierssen sandy clay loam, drain, 0 to 2 percent slopes (6.0%)
- Madera loam, 0 to 2 percent slopes (8.5%)
- San Joaquin silt loam, leveled, 0 to 1 percent slopes (9.6%)
- San Joaquin silt loam, 0 to 3 percent slopes (62.4%)

1.2.1.3. Hydrological Resources

Hydrological resources within the BSA include Laguna Creek, Whitehouse Creek, and associated wetland features: vernal pools, vernal swales, seasonal wetlands, seasonal wetland swales, and emergent marsh. Laguna Creek and Whitehouse Creek are part of the Morrison Creek watershed, and Laguna Creek subwatershed, within the Lower Sacramento River Hydrologic Unit (HUC 6) (Caltrans 2018). Whitehouse Creek flows from east to west and has been redirected around residential developments north of the BSA. Whitehouse Creek then joins with Laguna Creek within the BSA approximately 0.25 miles east of East Stockton Boulevard. Laguna Creek flows east to west travelling approximately 4000 linear feet through the BSA from Camden Lake to East Stockton Boulevard. All wetland and water features were assessed for Federal and State jurisdiction.

1.2.2. Biological Conditions in the Biological Study Area

The BSA is dominated by undisturbed annual grassland areas and aquatic habitats. Land use within the BSA is designated as low- and medium-density residential and institutional. The BSA is currently zoned as "Agricultural Residential 5-acre min (AR-5) and is surrounded by "Low Density Residential" (RD-4) and "Shopping Center" (SC) according to the City's General Plan, as amended (City of Elk Grove 2016). Dominant land cover and vegetative communities within the BSA consist of disturbed/urban, annual grassland, eucalyptus, freshwater pond, perennial creeks, vernal pools, vernal swales, seasonal wetlands, seasonal wetland swales, and emergent marsh (**Appendix A. Waters and Vegetation Communities within the BSA**).

1.2.2.1. Vegetation Communities

Disturbed/Urban
The disturbed/urban land cover type is defined as areas that have been subject to previous or ongoing disturbances such as along roadsides, trails, and parking lots. Mowed, scraped or graded land, and gravel areas would be included in this land cover type. Disturbed land cover type is vegetated with diverse weedy flora. Vascular plant species associated with these areas typically include Johnson grass (*Sorghum halepense*), Canadian horseweed (*Conyza canadensis*), milk thistle (*Silybum marianum*), yellow-star thistle (*Centaurea solstitialis*), and field bindweed (*Convolvulus arvensis*).

Annual Grassland
The Project area is dominated by annual grassland areas. The annual grasslands throughout the rural landscape consist of varying non-native species including wild oat (*Avena* sp.), Italian rye grass (*Festuca perennis*), prickly lettuce (*Lactuca serriola*), and others. These annual grasslands within the BSA are typically used for hay production and are disturbed annually from this process.

Eucalyptus
The Project area has one area of eucalyptus habitat surrounding Shortline Lake. The eucalyptus stand is composed of Tasmanian blue gum (*Eucalyptus globulus*), a Cal-IPC listed invasive species. In most cases, eucalyptus forms a dense stand with a closed canopy, and are planted in rows for wind protection or dense groves for hardwood production. This stand appears to have been planted for wind protection for the Shortline Lake properties. The habitat is a monotypic stand of eucalyptus with little to no shrubby understory.

Freshwater Pond
The BSA includes a portion of Shortline Lake as freshwater pond habitat. This habitat his highly managed but the Shortline Lake properties, which use the pond as a water skiing course. Shortline Lake is a human-made excavated unnatural water body, managed to prevent algae and wetland vegetation from growing.

Perennial Creeks

A portion of the BSA includes Whitehouse Creek and Laguna Creek. The streams and creeks habitat type is defined as the average wetted area within the intermittent, seasonal and perennial linear water features such as rivers, streams, creeks, jurisdictional ditches & canals and drainages (continuous, ephemeral and intermittent). Habitat types typically found immediately adjacent to the stream and creek habitat include mixed riparian woodland, mixed riparian scrub, valley oak woodland, seasonal wetland, seasonal wetland swales, freshwater marsh, and valley grassland habitats.

Vernal Pool

Vernal pools are characterized by seasonal inundation and their potential to support vernal pool species. A wide variety of herbaceous species are associated with this community type, including Italian ryegrass, Mediterranean barley, coyote thistle (Eryngium spp.), smooth goldfields (Lasthenia glaberrima), Fremont's goldfields (*Lasthenia fremontii*), vernal pool buttercup (*Ranunculus bonariensis var. trisepalus*), and woolly marbles (*Psilocarphus spp.).* Additional species that may be present include Sacramento mint (Pogogyne zizyphoroides), hyssop loosestrife (*Lythrum hyssopifolium*), toad rush (*Juncus bufonius*), popcorn flower (*Plagiobothrys spp.),* alkali weed, mayweed, and curly dock. Vernal pool communities have the potential to support special-status vernal pool invertebrates, such as fairy shrimp (*Branchinecta* spp.) and tadpole shrimp (*Lepidurus* spp.).

Vernal Swale

Vernal pools are sometimes connected to each other by small drainages known as vernal swales, forming complexes of vernal pools. Vernal swales differ from vernal pools in that they function distinctly as shallow, seasonal conveyance channels. The typically connect vernal pools or convey shallow seasonal flows down gradual inclines often collecting water in a vernal pool or seasonal wetland. Vernal swales and pools typically share plant species and successive "rim bloom" plant assemblages and soil types (California Open Lands 2018).

Seasonal Wetland

Seasonal wetlands are defined as ephemeral wetlands that pond during the rainy season and dry during the summer dry season. This habitat type is dominated by hydrophytic vegetation types of grasses, herbs, and forbs. The seasonal wetland habitat type occurs in the adjacent lands of the Stone Lakes NWR in the northwest quadrant of the BSA. Seasonal wetlands can provide habitat for vernal pool associates, and habitat for a wide variety of wildlife including song birds, waterfowl, reptiles, and other wildlife species.

Seasonal Wetland Swale

The seasonal swale land cover type is defined as low meandering channels that tend to be saturated long enough to support vegetative associations. Swale features often represent the headwaters of streams, connect seasonal wetlands, and/or drain small watersheds into defined creeks. Swales can be supported by minor groundwater seepage. Swales contain rabbitsfoot grass (*Polypogon monspeliensis*), fireweed (*Epilobium pygmaeum*), fiddle dock (*Rumex pulcher*), and prickleseed buttercup (*Ranunculus muricatus*). Seasonal swales that occur within and between vernal pool complexes are classified as vernal swales.

Emergent Marsh

Freshwater emergent wetlands are characterized by erect, rooted herbaceous hydrophytes such as common cattail. Emergent wetlands are flooded frequently enough so that the roots of the vegetation are in an anaerobic environment. On the upper margins of this habitat, saturated or periodically flooded soils support several moist soil plant species including Baltic rush (*Juncus* *balticus*), tall flatsedge, smartweed (*Persicaria spp.),* and, on more alkali sites, saltgrass (*Distichlis spicata*). Lower, wetter portions of freshwater emergent wetlands in the Project area are composed of cattails, bulrush, and floating primrose. In the Project area, several freshwater emergent wetlands exist west of Franklin Boulevard.

Freshwater marshes are among the most productive wildlife habitats in California. Many species rely on freshwater marshes for their entire life cycle. The rare giant garter snake uses these wetlands as its primary habitat. Slow-moving waters provide important resting and foraging habitats for migratory water birds such as the mallard (*Anas platyrhynchos*) and cinnamon teal (*Anas cyanoptera*). Wetlands also provide habitat for the American coot (*Fulica americana*), great blue heron (*Ardea herodias*), great egret (*Ardea alba*), and black phoebe (*Sayornis nigricans*).

Chapter 2. Methods

Prior to field work, literature research was conducted through the United States Fish and Wildlife Service (USFWS) Species List (USFWS 2018), California Department of Fish and Wildlife (CDFW) *California Natural Diversity Database* (CNDDB) (CDFW 2018), the California Native Plant Society (CNPS 2018) *Electronic Inventory of Rare and Endangered Plants* (**Appendix B: Species Lists**) to identify habitats and special-status species having the potential to occur within the BSA. General biological surveys and habitat assessments were conducted on April 4, 2018 which identified suitable habitat for five (5) special status plant species within the BSA. Additional botanical plant surveys were conducted on April 24-26 and June 21, 2018. Botanical field surveys were conducted following the methods outlined in the most recent CDFW *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (2018). Botanical surveys were conducted in the field at times when plants were both evident and identifiable, during flowering and fruiting stages according to the rare plants blooming periods (Jepson eFlora 2018). This included multiple visits in early, mid and late season to capture the floristic diversity within the BSA and to determine if special status plants were present. No adverse conditions within the BSA were identified and all surveys were conducted during appropriate weather and temperature conditions. The following is a list of survey dates and field surveys present:

- April 4, 2018 – Andrew Dellas and Scott Salembier
- April 24th, 25th, and 26th, 2018 –Andrew Dellas and Courtney Owens, and;
- June 21st, 2018 – Andrew Dellas and Scott Salembier.

Chapter 3. Results

Preliminary literature research was conducted to determine the special status plant species with the potential to occur in the vicinity of the project. A review of USFWS, CNDDB, and CNPS online databases concluded that 23 special status plant species, within a the 9 Quad USGS 7.5-minute Quadrangle search area, had the potential to occur within the BSA. Based on preliminary research, aerial reconnaissance, and habitat assessments within the BSA, it was determined that 5 special status plant species had a low to high potential to occur within the BSA: Boggs Lake hedge-hyssop (*Gratiola heterospeala*), dwarf downingia (*Downingia pusilla*), legenere (*Legenere limosa*), Sanford's arrowhead (*Sagittaria sanfordii*), and woolly rose-mallow (*Hibiscus lasiocarpos* var. *occidentalis*). Table 1 below provides a list of all plant species identified within the BSA. Table 2 provides a list each of the rare or special status plant species, status, general habitat requirements, and potential the determined potential for each species to occur within the BSA. Below is a discussion of sensitive plant species with the potential to occur within the BSA, potential project impacts, and avoidance and minimization measures proposed for the Project.

Discussion of Sensitive Plant Species

BOGGS LAKE HEDGE-HYSSOP

Boggs Lake hedge-hyssop (*Gratiola heterosepala*) is not a state or federal listed species, but is a CNPS rare plant rank 1B.2. Boggs Lake hedge-hyssop is an annual herb inhabiting clay soils and shallow waters of marshes and swamps, lake margins, and vernal pools. The species flowers from April-August at elevations ranging from 33-7,792 feet.

DWARF DOWNINGIA

Dwarf downingia (*Downingia pusilla*) is not a state or federal listed species, but is a CNPS rare plant rank 2B.2. Dwarf downingia is an annual herb inhabiting vernal pools and mesic valley and foothill grassland communities. The species flowers from March-May at elevations ranging from 3-1,460 feet.

LEGENERE

Legenere (*Legenere limosa*) is not a state or federal listed species, but is a CNPS rare plant rank 1B.1. Legenere is an annual herb inhabiting wet areas, vernal pools, and ponds. The species flowers from May-June at elevations ranging from 0-2,887 feet.

SANFORD'S ARROWHEAD

Sanford's arrowhead (*Sagittaria sanfordii*) is not a state or federal listed species, but is a CNPS rare plant rank 1B.2. Sanford's arrowhead is a perennial rhizomatous herb inhabiting freshwater marshes, swamps, ponds and ditches. The species flowers from May-October at elevations ranging from 0-2,132 feet.

WOOLLY ROSE-MALLOW

Wooly rose-mallow (*Hibiscus lasiocarpos var. occidentalis*) is not a state or federal listed species, but is a CNPS rare plant rank 1B.2. Wooly rose-mallow is a perennial rhizomatous herb inhabiting freshwater wetlands, wet banks, and marsh communities, and is often found in-between riprap on levees. The species flowers from June-September at elevations ranging from 0-394 feet

Table 1: Plant Species Observed within the BSA

Common Name	Scientific Name	Native (N)/ Non-native (X)
black mustard	*Brassica nigra*	X (Invasive)[1]
blue dicks	*Dichelostemma capitatum*	N
broadleaf cattail	*Typha latifolia*	N
bullthistle	*Cirsium vulgare*	X (Invasive)[1]
California brome	*Bromus carinatus*	N
California bulrush	*Schoenoplectus californicus*	N
California manroot	*Marah fabacea*	N
California poppy	*Eschscholzia californica*	N
California Wild Rose	*Rosa californica*	N
Canary Island pine	*Pinus canariensis*	X
carpet clover	*Trifolium monanthum*	N
Chinese pistache	*Pistacia chinensis*	X
Chinese privet	*Ligustrum sinense*	X
Chinese Tallow	*Triadica sebifera*	X (Invasive)[1]
Cichory	*Cichorium intybus*	X
coast redwood	*Sequoia sempervirens*	N
common fiddleneck	*Amsinckia intermedia*	N
common lippia	*Phyla nodiflora*	N
common smartweed	*Persicaria hydropiperoides*	X
common Sow-thistle	*Sonchus oleraceus*	X
common Spike-rush	*Eleocharis palustris*	N
common stork's-bill	*Erodium cicutarium*	X (Invasive)
common tarweed	*Centromadia pungens*	N
coyote brush	*Baccharis pilularis*	N
coyote-thistle	*Eryngium castrense*	N
curled dock	*Rumex crispus*	X (Invasive)
curvepod yellowcress	*Rorippa curvisiliqua*	N
cut-leaved crane's-bill	*Geranium dissectum*	X (Invasive)
Dallis grass	*Paspalum diatatum*	X
english plantain	*Plantago lanceolata*	X (invasive)
field sedge	*Carex praegracilis*	N
floating primerose-willow	*Ludwigia peploides*	N
fountain grass	*Pennisetum setaceum*	X (Invasive)[1]
foxtail Barley	*Hordeum murinum*	X (Invasive)[1]
Fremont cottonwood	*Populus fremontii*	N
French lavender	*Lavandula stoechas*	X
Goodding's willow	*Salix gooddingii*	N
hairy hawkbit	*Leontodon saxatilis*	X
hairy vetch	*Vicia villosa ssp. villosa*	X
harvest brodiaea	*Brodiaea elegans*	N

* CNPS sensitive
[1] California Invasive Plant Council (Cal-IPC) Moderate or High invasive rating
[2] Sacramento County Agricultural Commission High or Watch list rating
[3] California Department of Food and Agriculture (CDFA) List C rating

Common Name	Scientific Name	Native (N)/ Non-native (X)
Himalayan Blackberry	*Rubus armeniacus*	X (Invasive)[1]
Hyssop loosestrife	*Lythrum hyssopifolia*	X (Invasive)
interior live oak	*Quercus wislizeni*	N
Italian Ryegrass	*Lolium multiflorum*	X (Invasive)[1]
Italian thistle	*Carduus pycnocephalus*	X (Invasive)[1,3]
jointed charlock	*Raphanus sativus*	X (Invasive)
little quaking-grass	*Briza minor*	X
London plane tree	*Platanus hispanica*	X
lupine sp.	*Lupinus*	N
Mediterranean barley	*Hordeum marinum gussoneanum*	X (Invasive)[1]
medusa head	*Taeniatherum caput-medusae*	X (Invasive)[1,2,3]
Mexican Fan Palm	*washingtonia robusta*	X (Invasive)[1]
milk thistle	*Silybum marianum*	X (Invasive)[1]
Muehlenberg's Centaury	*Zeltnera muehlenbergii*	N
narrow leaf milkweed	*Asclepias fascicularis*	N
narrowleaf willow	*Salix exigua*	N
Pacific poison oak	*Toxicodendron diversilobum*	N
pennyroyal	*Mentha pulegium*	X (Invasive)[1]
purple owl's-clover	*Castilleja exserta exserta*	N
ripgut brome	*Bromus diandrus*	X (Invasive)[1,3]
rose Clover	*Trifolium hirtum*	X (invasive)
rough cocklebur	*Xanthium strumarium*	N
scarlet oak	*Quercus coccinea*	X
small six-weeks grass	*Vulpia microstachys*	N
soft chess brome	*Bromus hordeaceus*	X (invasive)
Spikeweed	*Centromedia fitchii*	N
spreading Rush	*Juncus patens*	N
sturdy sedge	*Carex alma*	N
sweet fennel	*Foeniculum vulgare*	X (Invasive)[1]
tall flatsedge	*Cyperus eragrostis*	N
Tasmanian blue gum	*Eucalyptus globulus*	X (invasive)
tumbleweed	*Salsola tragus*	X (invasive)
valley oak	*Quercus lobata*	N
vernal pool buttercup	*Ranunculus bonariensis trisepalus*	
wall bedstraw	*Galium parisiense*	X
watercress	*Nasturtium officinale*	N
Western redbud	*Cercis occidentalis*	N
White stemmed filaree	*Erodium brachycarpum*	X
wild pea	*Pisum sativum elatius*	X
wildoats	*Avena fatua*	X (Invasive)[1]
yellow starthistle	*Centaurea solstitialis*	X (Invasive)[1,2,3]

* CNPS sensitive
[1] California Invasive Plant Council (Cal-IPC) Moderate or High invasive rating
[2] Sacramento County Agricultural Commission High or Watch list rating
[3] California Department of Food and Agriculture (CDFA) List C rating

Table 2. Special Status Species with Potential to Occur in the Project Vicinity

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
Plant Species						
Ahart's dwarf rush	*Juncus leispermus var. aharti*	Fed: State: CNPS:	-- -- 1B.2	An annual herb inhabiting grassland swales, gopher mounds and vernal pool margins of mesic valley and foothill grassland communities. Flowers March – May (98-751 feet).	HP	**Presumed Absent:** The BSA does contain potentially suitable grassland and vernal pool habitat; however, the BSA is below the species known elevation range, and the nearest presumed extant occurrence is approximately 10 miles from the BSA. The species is presumed absent from the BSA.
Boggs Lake hedge-hyssop	*Gratiola heterosepala*	Fed: State: CNPS:	-- -- 1B.2	An annual herb inhabiting clay soils and shallow waters of marshes and swamps, lake margins, and vernal pools. Flowers April-August (33-7,792 feet).	HP	**Low to Moderate Potential:** The BSA does contain potentially suitable shallow water and vernal pool habitat. The nearest presumed extant occurrence is approximately 3 miles from the BSA. Due to the presence of potentially suitable habitat and the proximity to the extant occurrence the species has a low to moderate potential to occur within the BSA.
Bolander's water-hemlock	*Cicuta maculata var. bolanderi*	Fed: State: CNPS:	-- -- 2B.2	A perennial herb inhabiting coastal marshes and swamps with fresh or brackish water. Blooms July-September (6-660 feet).	A	**Presumed Absent:** The BSA does not contain suitable coastal marsh or brackish waters, and the nearest presumed extant occurrence is approximately 13 miles from the BSA within the Sacramento Delta. Due to the lack of suitable habitat and distance to presumed extant occurrences the species is presumed absent from the BSA.
bristly sedge	*Carex comosa*	Fed: State: CNPS:	-- -- 2B.1	A perennial herb inhabiting coastal prairies, marshes and swamps along lake margins, and valley foothill grasslands communities. Blooms May-September (0-2,050 feet).	A	**Presumed Absent:** The BSA does not contain suitable coastal prairies, marshes, swamps, or valley foothill grassland communities. The nearest presumed extant occurrence of the species is approximately 7 miles from the BSA. Due to the lack of potentially suitable habitat and the distance to extant populations the species is presumed absent from the BSA.
Delta mudwort	*Limosella australis*	Fed: State CNPS:	-- -- 1B.2	A perennial stoloniferous herb inhabiting low elevation muddy banks of riparian scrub, freshwater or brackish marshes and swamps, and intertidal flats. Flowers May-August (0 - 32feet).	HP	**Presumed Absent:** The BSA does contain suitable freshwater emergent marsh; however, the nearest presumed extant occurrence of the species is approximately 12 miles from the BSA. Due to the distance

						to extant populations the species is presumed absent from the BSA.
Delta tule pea	*Lathyrus jepsonii var jepsonii*	Fed: State: CNPS:	-- -- 1B.2	A perennial herb inhabiting freshwater and brackish marshes of coastal and estuarine communities. Flowers May - August (0 - 98 feet).	A	**Presumed Absent:** The BSA does not contain suitable coastal and estuarine communities. The nearest presumed extant occurrence of the species is approximately 12 miles from the BSA. Due to the lack of potentially suitable habitat and the distance to extant populations the species is presumed absent from the BSA.
dwarf downingia	*Downingia pusilla*	Fed: State: CNPS:	-- -- 2B.2	An annual herb inhabiting vernal pools and mesic valley and foothill grassland communities. Flowers March-May (3-1,460 feet).	HP	**Low to Moderate Potential:** The BSA does contain potentially suitable vernal pool habitat. The nearest presumed extant occurrence is approximately 2 miles from the BSA. Due to the presence of potentially suitable habitat and the proximity to the extant occurrences the species has a low to moderate potential to occur within the BSA.
Ferris' milk-vetch	*Astragalus tener var. ferrisiae*	Fed: State: CNPS:	-- -- 1B.1	An annual herb inhabiting vernally mesic meadows and seeps and sub-alkaline flats within valley and foothill grassland communities. Known only from six extant occurrences. Flowers April - May (6-246 feet).	A	**Presumed Absent:** The BSA does contain valley grasslands; however, the web soil survey report (NCRS 2018) for the Project does not indicate any of the soils within the BSA to be highly alkaline. Therefore, suitable soils for the species do not exist within the BSA. The nearest presumed extant occurrence is approximately 15 miles from the BSA. Due to the lack of suitable soils and the distance from extant occurrences, the species is presumed absent from the BSA.
Heckard's pepper-grass	*Lepidium latipes var. heckardii*	Fed: State: CNPS:	-- -- 1B.2	An annual herb found in alkaline flats within valley or foothill grasslands. Flowers March-May (0 - 660 feet).	A	**Presumed Absent:** The BSA does contain valley grasslands; however, the web soil survey report (NCRS 2018) for the Project does not indicate any of the soils within the BSA to be highly alkaline. Therefore, suitable soils for the species do not exist within the BSA. The nearest presumed extant occurrence is approximately 7 miles from the BSA. Due to the lack of suitable soils and the distance from extant occurrences, the species is presumed absent from the BSA.

legenere	*Legenere limosa*	Fed: State: CNPS:	-- -- 1B.1	An annual herb inhabiting wet areas, vernal pools, and ponds. Flowers May-June (0-2,887 feet).	HP	**Low to Moderate Potential:** The BSA does contain potentially suitable wet areas and vernal pool habitat. The nearest presumed extant occurrence is approximately 1.5 miles from the BSA. Due to the presence of potentially suitable habitat and the proximity to the presumed extant occurrences the species has a low to moderate potential to occur within the BSA.
marsh skullcap	*Scutellaria galericulata*	Fed: State CNPS:	-- -- 2B.2	A perennial rhizomatous herb inhabiting wet sites and streambanks of lower montane coniferous forest, mesic meadows and seeps, and marsh and swamp communities. Flowers June-September (0 -6,889 feet).	A	**Presumed Absent:** The BSA does not contain suitable lower montane coniferous forest or mesic meadow habitat. The nearest presumed extant occurrence of the species is approximately 12 miles from the BSA. Due to the lack of potentially suitable habitat and the distance to extant populations the species is presumed absent from the BSA.
Mason’s lilaeopsis	*Lilaeopsis masonii*	Fed: State: CNPS:	-- -- 1B.2	A perennial rhizomatous herb found exclusively in the Sacramento-San Joaquin River Delta and San Francisco Bay. Found in low elevation freshwater and brackish mashes adjacent to surface water. Flowers June - August (0 - 100 feet).	HP	**Presumed Absent:** The BSA is not located within the Sacramento-San Joaquin River Delta or San Francisco Bay area. The nearest presumed extant occurrence of the species is approximately 10 miles from the BSA within the Sacramento Delta channel. Due to the location of the BSA and the distance to extant populations, the species is presumed absent from the BSA.
Northern California black walnut	*Juglans hindsii*	Fed: State: CNPS:	-- -- 1B.1	A deciduous tree inhabiting along streams and slopes within riparian forest and riparian woodland communities. Flowers April-May (0-1,444 feet).	A	**Presumed Absent:** The BSA does not contain suitable riparian forest or woodland communities. The nearest presumed extant populations of the species exist along the Sacramento River, approximately 10 miles from the BSA. Due to the lack of suitable habitat and the distance from extant occurrences, the species is presumed absent from the BSA.
Pappose tarplant	*Centromadia parryi ssp. parryi*	Fed: State: CNPS:	-- -- 1B.2	An annual herb inhabiting chaparral, coastal scrub, meadows, seeps, marshes, swamps (coastal salt), and valley foothill grasslands often with alkaline soils. Flowers May - November (0 - 1377 ft.).	A	**Presumed Absent:** The BSA does contain potentially suitable valley grassland habitat; however, the web soil survey report (NCRS 2018) for the Project does not indicate any of the soils within the BSA to be highly alkaline. Therefore, suitable soils for the species do not exist within the BSA. The nearest presumed extant occurrence is approximately 9 miles from the BSA. Due to

						the lack of suitable soils and the distance from extant occurrences, the species is presumed absent from the BSA.
Peruvian dodder	*Cuscuta obtusiflora var. glandulosa*	Fed: State: CNPS:	-- -- 2B.2	An annual parasitic vine inhabiting freshwater marsh communities on herbs such as Alternanthera sp., Dalea sp., Lythrum sp., Polygonum sp., and Xanthium sp. Flowers July - October (49-1,640 feet).	HP	**Presumed Absent:** The BSA does contain potentially suitable habitat; however, the species has not been documented since the 1940's within California, of which one occurrence is noted as questionable by CNDDB within approximately 3 miles from the BSA.
Sacramento Orcutt grass	*Orcuttia viscida*	Fed: State: CNPS:	E -- 1B.2	An annual herb inhabiting vernal pools. Flowers April-July (98-328 feet).	A	**Presumed Absent:** The BSA does contain potentially suitable vernal pool habitat; however, the BSA is below the known elevation range of the species. The nearest presumed extant population is approximately 11 miles from the BSA with the species known elevation range. Due to being outside of the species known elevation range, the species is presumed absent from the BSA.
Sanford's arrowhead	*Sagittaria sanfordii*	Fed: State: CNPS:	E -- 1B.2	A perennial rhizomatous herb inhabiting freshwater marshes, swamps, ponds and ditches. Flowers May-October (0-2,132 feet).	HP	**High Potential:** The BSA does contain potentially suitable freshwater marsh and creek channels. The nearest presumed extant occurrence of the species is approximately 1 mile from the BSA. Due to the presence of potentially suitable habitat and the proximity to CNDDB presumed extant occurrences, the species is considered to have a high potential to occur within the BSA.
saline clover	*Trifolium hydrophilum*	Fed: State CNPS:	-- -- 1B.2	An annual herb inhabiting mesic, alkaline soils of salt marsh, marshes and swamps, vernal pools, and valley and foothill grasslands. Flowers April-June (0 - 1,000 feet).	A	**Presumed Absent:** The BSA does contain potentially suitable marsh, vernal pool and valley grassland habitat; however, the web soil survey report (NCRS 2018) for the Project does not indicate any of the soils within the BSA to be highly alkaline. Therefore, suitable soils for the species do not exist within the BSA. The nearest presumed extant occurrence is approximately 10 miles from the BSA. Due to the lack of suitable soils and the distance from extant occurrences, the species is presumed absent from the BSA.
side-flowering skullcap	*Scutellaria lateriflora*	Fed: State	-- --	A perennial rhizomatous herb inhabiting mesic meadow and seeps and marsh	HP	**Presumed Absent:** The BSA is not located within the Sacramento-San Joaquin River

		CNPS:	2B.2	and swamp communities. Known in CA from only three occurrences in the Sacramento-San Joaquin Delta. Flowers July (0-1,640 feet).		Delta. The nearest presumed extant occurrence of the species is approximately 10 miles from the BSA within the Sacramento Delta channel. Due to the location of the BSA and the distance to extant populations, the species is presumed absent from the BSA.
slender Orcutt grass	*Orcuttia tenuis*	Fed: State CNPS:	E -- --	An annual herb inhabiting vernal pools, often within gravelly soils. Flowers May-October (115-5,774 feet).	HP	**Presumed Absent:** The BSA does contain potentially suitable vernal pool habitat; however, the BSA is below the known elevation range of the species. The nearest presumed extant population is approximately 6 miles from the BSA with the species known elevation range. Due to being outside of the species known elevation range, the species is presumed absent from the BSA.
Suisun marsh aster	*Symphyotrichum lentum*	Fed: State CNPS:	-- -- 2B.3	A perennial rhizomatous herb inhabiting wetlands, freshwater marsh, and brackish-marsh communities. Flowers May-November (0-984 feet).	HP	**Presumed Absent:** The BSA does contain potentially suitable freshwater marsh and wetland habitat; however, the nearest presumed extant occurrence of the species is approximately 15 miles northwest of the BSA within the Yolo Bypass. Due to the distance of presumed extant occurrences, the species is presumed absent from the BSA.
watershield	*Brasenia schreberi*	Fed: State CNPS:	-- -- 2B.3	A perennial rhizomatous aquatic herb inhabiting ponds, slow streams and freshwater marsh and swamp communities. Flowers June-September (98-7,217 feet).	A	**Presumed Absent:** The BSA does contain potentially suitable vernal pool habitat; however, the BSA is below the known elevation range of the species. The nearest presumed extant population is approximately 8 miles from the BSA with the species known elevation range. Due to being outside of the species known elevation range, the species is presumed absent from the BSA.
woolly rose-mallow	*Hibiscus lasiocarpos var. occidentalis*	Fed: State: CNPS:	-- -- 1B.2	A perennial rhizomatous herb inhabiting freshwater wetlands, wet banks, and marsh communities. Often found in-between riprap on levees. Flowers June-September (0-394 feet).	HP	**Low to Moderate Potential:** The BSA does contain potentially suitable freshwater wetlands and marsh communities. The nearest presumed extant occurrence is within approximately 5 miles of the BSA. Due to the presence of potentially suitable habitat and the distance to extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA.

Project Impacts to Special Status Plants

BOGGS LAKE HEDGE-HYSSOP

The BSA does contain potentially suitable shallow water and vernal pool habitat. The nearest presumed extant occurrence is approximately 3 miles from the BSA. Due to the presence of potentially suitable habitat and the proximity to the extant occurrence the species has a low to moderate potential to occur within the BSA. No observations of the species were recorded during the botanical surveys on April 4, April 24-April 26, 2018 and June 21, 2018. Pursuant to the recommendations in the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (2018), a single season of negative surveys is not sufficient to determine absence of a species. A second round of rare plant surveys will be conducted during the bloom period prior to construction as described in the avoidance and minimization measures below. No direct impacts to the species are anticipated.

DWARF DOWNINGIA

The BSA does contain potentially suitable vernal pool habitat. The nearest presumed extant occurrence is approximately 2 miles from the BSA. Due to the presence of potentially suitable habitat and the proximity to the extant occurrences the species has a low to moderate potential to occur within the BSA. No observations of the species were recorded during the botanical surveys on April 4, April 24-April 26, 2018 and June 21, 2018. Pursuant to the recommendations in the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (2018), a single season of negative surveys is not sufficient to determine absence of a species. A second round of rare plant surveys will be conducted during the bloom period prior to construction as described in the avoidance and minimization measures below. No direct impacts to the species are anticipated.

LEGENERE

The BSA does contain potentially suitable wet areas and vernal pool habitat. The nearest presumed extant occurrence is approximately 1.5 miles from the BSA. Due to the presence of potentially suitable habitat and the proximity to the presumed extant occurrences the species has a low to moderate potential to occur within the BSA. No observations of the species were recorded during the botanical surveys on April 4, April 24-April 26, 2018 and June 21, 2018. Pursuant to the recommendations in the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (2018), a single season of negative surveys is not sufficient to determine absence of a species. A second round of rare plant surveys will be conducted during the bloom period prior to construction as described in the avoidance and minimization measures below. No direct impacts to the species are anticipated.

SANFORD'S ARROWHEAD

The BSA does contain potentially suitable freshwater marsh and creek channels. The nearest presumed extant occurrence of the species is approximately 1 mile from the BSA. Due to the presence of potentially suitable habitat and the proximity to CNDDB presumed extant occurrences, the species is considered to have a high potential to occur within the BSA. No observations of the species were recorded during the botanical surveys on April 4, April 24-April 26, 2018 and June 21, 2018. Pursuant to the recommendations in the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (2018), a single season of negative surveys is not sufficient to determine absence of a species. A second round of rare plant surveys will be conducted during the bloom period prior to construction as described in the avoidance and minimization measures below. No direct impacts to the species are anticipated.

WOOLLY ROSE-MALLOW

The BSA does contain potentially suitable freshwater wetlands and marsh communities. The nearest presumed extant occurrence is within approximately 5 miles of the BSA. Due to the presence of potentially suitable habitat and the distance to extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA. No observations of the species were recorded during the botanical surveys on April 4, April 24-April 26, 2018 and June 21, 2018. Pursuant to the recommendations in the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (2018), a single season of negative surveys is not sufficient to determine absence of a species. A second round of rare plant surveys will be conducted during the bloom period prior to construction as described in the avoidance and minimization measures below. No direct impacts to the species are anticipated.

Avoidance and Minimization Efforts for Special Status Plant Species

All of the special status plant species with the potential to occur within the BSA are associated with aquatic natural communities within the BSA (vernal pools, seasonal wetlands, marsh, and perennial creeks). With the incorporation of project construction Best Management Practices (BMPs) as described in the Biological Resources Report and IS/MND for the Project, no direct impacts to special status plant species are anticipated. The following is a list of avoidance and minimization measures for potential impacts to aquatic features and special status plant species.

BIO-1: Prior to the start of construction activities, the project limits in proximity to jurisdictional waters must be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking to ensure construction will not further encroach into waters. The project biologist will periodically inspect the ESA to ensure sensitive locations remain undisturbed.

BIO-2: Contract specifications will include the following BMPs, where applicable, to reduce erosion during construction:

- Implementation of the project will require approval of a site-specific Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Program (WPCP) that would implement effective measures to protect water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques;
- Existing vegetation will be protected in place where feasible to provide an effective form of erosion and sediment control;
- Stabilizing materials will be applied to the soil surface to prevent the movement of dust from exposed soil surfaces on construction sites as a result of wind, traffic, and grading activities;
- Roughening and/or terracing will be implemented to create unevenness on bare soil through the construction of furrows running across a slope, creation of stair steps, or by utilization of construction equipment to track the soil surface. Surface roughening or terracing reduces erosion potential by decreasing runoff velocities, trapping sediment, and increasing infiltration of water into the soil, and aiding in the establishment of vegetative cover from seed.
- Soil exposure must be minimized through the use of temporary BMPs, groundcover, and stabilization measures;

- The contractor must conduct periodic maintenance of erosion- and sediment-control measures.

BIO-3: To conform to water quality requirements, the project must implement the following:

- Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants must be a minimum of 100 feet from surface waters. Any necessary equipment washing must occur where the water cannot flow into surface waters. The project specifications will require the contractor to operate under an approved spill prevention and clean-up plan;
- Construction equipment will not be operated in flowing water;
- Construction work must be conducted according to site-specific construction plans that minimize the potential for sediment input to waters of the U.S. and State;
- Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life must be prevented from contaminating the soil or entering surface waters;
- Equipment used in and around surface waters must be in good working order and free of dripping or leaking contaminants; and,
- Any surplus concrete rubble, asphalt, or other debris from construction must be taken to an approved disposal site.

BIO-4: All temporarily disturbed areas will be restored onsite to pre-project conditions or better prior to project completion. Where possible, vegetation will be trimmed rather than fully removed with the guidance of the project biologist.

BIO-5: A focused rare plant survey will be conducted during the blooming season of each special status plant species with potential to occur within the project area prior to the start of construction (Boggs Lake hedge-hyssop, dwarf downingia, legenere, Sanford's arrowhead, and wooly rose-mallow). If rare plants are discovered during these surveys, additional ESA fencing or relocation will be implemented to avoid and minimize impact to the species. Coordination with CDFW may be required to determine appropriate buffer distances and/or relocation of species populations.

Chapter 5. References

Calflora. 2019. Information on wild California plants for conservation, education and appreciation. Available at: calflora.org (accessed 10/15/2019).

CDFW. 2018. "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. *“Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*. CDFW, March 2018.

City of Elk Grove. 2019. City of Elk Grove General Plan. Available at: <http://www.elkgrovecity.org/city_hall/departments_divisions/planning/land_use_regulations/general_plan_and_community_plans> (accessed 10/15/2019).

California Department of Transportation (Caltrans). 2018. Caltrans Water Quality Planning Tool. Available at: <http://svctenvims.dot.ca.gov/wqpt/wqpt.aspx> (accessed 5/21/2018).

California Invasive Plant Council. 2019. The Cal-IPC Inventory. Available at: <https://www.cal-ipc.org/plants/inventory/> (accessed 10/15/2019).

CNDDB. 2019. California Natural Diversity Database, Rarefind 5. Available at:<http://www.dfg.ca.gov/biogeodata/cnddb/> (accessed 10/15/2019).

CNPS, Rare Plant Program.2019. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Available at: <http://www.rareplants.cnps.org> (accessed 10/15/2019).

Jepson Eflora. 2018. Jepson eFlora: Geographic subdivisions. Available at: <http://ucjeps.berkeley.edu/eflora/geography.html> (accessed 4/15/2018).

Natural Resources Conservation Service (NRCS). 2018. Custom Soil Resource Report for Sacramento County, California – WDR018-LCWC. Available at: <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx> (accessed 5/21/2018).

USDA. 2007. Ecological Subregions: Sections and Subsections for the conterminous United States. Available at: <https://www.fs.usda.gov/treesearch/pubs/48672> (accessed 4/16/2018).

USFWS. 2019. Official Species List: Sacramento Fish and Wildlife Office. Available at: <http://www.fws.gov/sacramento/> (accessed 10/15/2019).

Appendix A - Supporting Materials

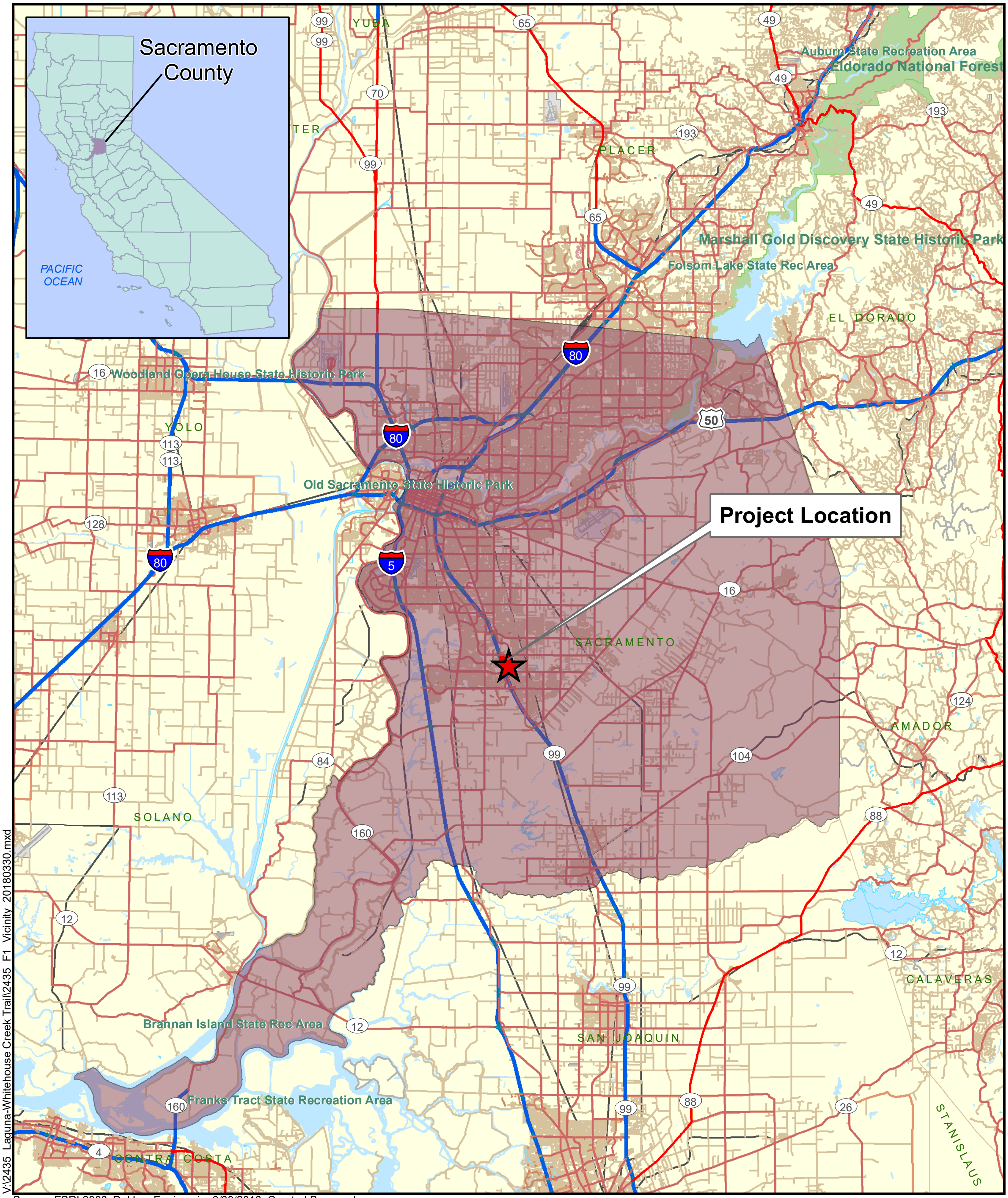
Vicinity Map

Location Map

Topographic Map

NRCS Report

Waters and Vegetation Communities Map

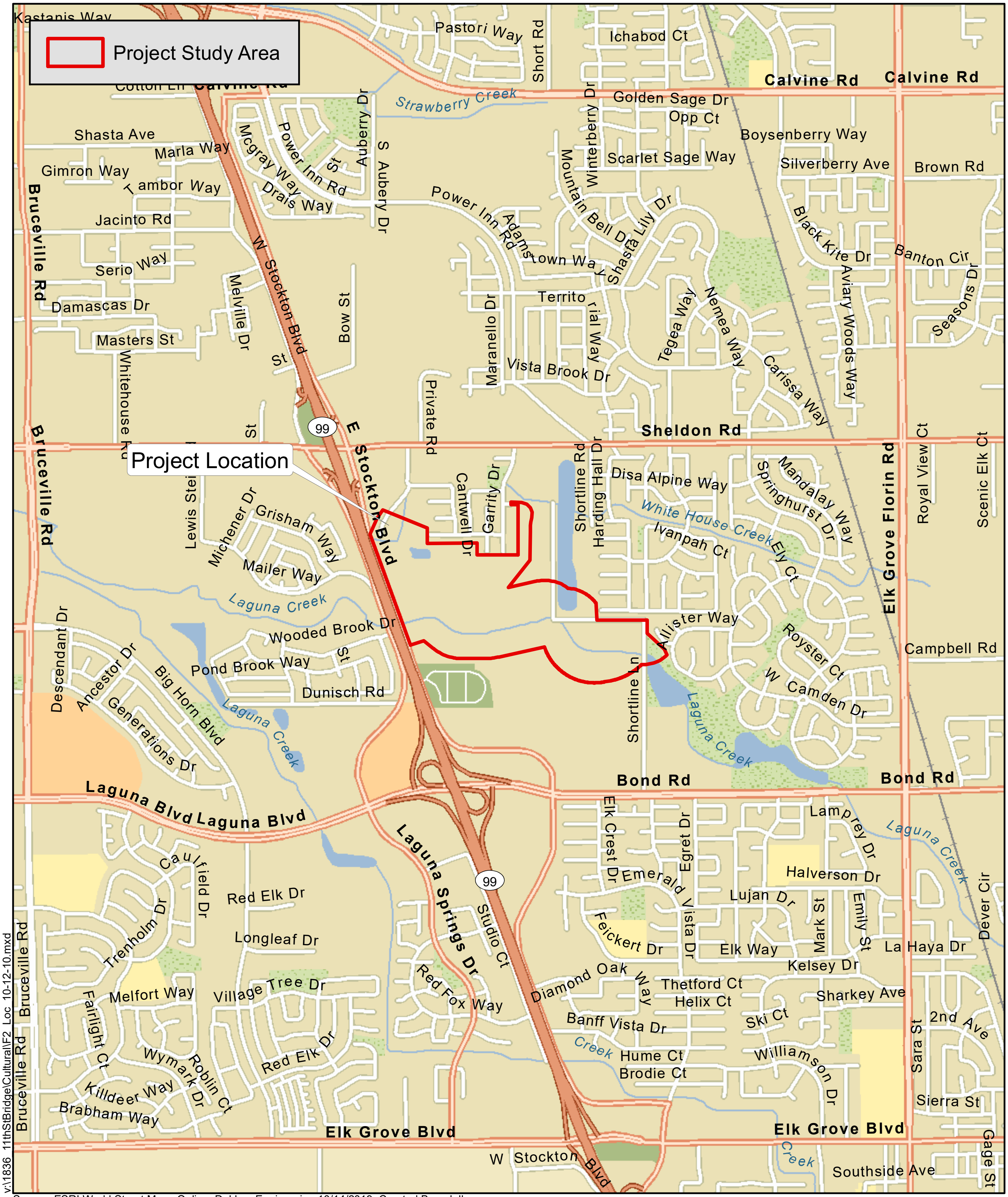


Source: ESRI 2008; Dokken Engineering3/30/2018; Created By: amyd

Project Vicinity

Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, Sacramento County, California

0 5 10 15 Miles



Source: ESRI World Street Maps Online; Dokken Engineering 10/14/2019; Created By: adellas

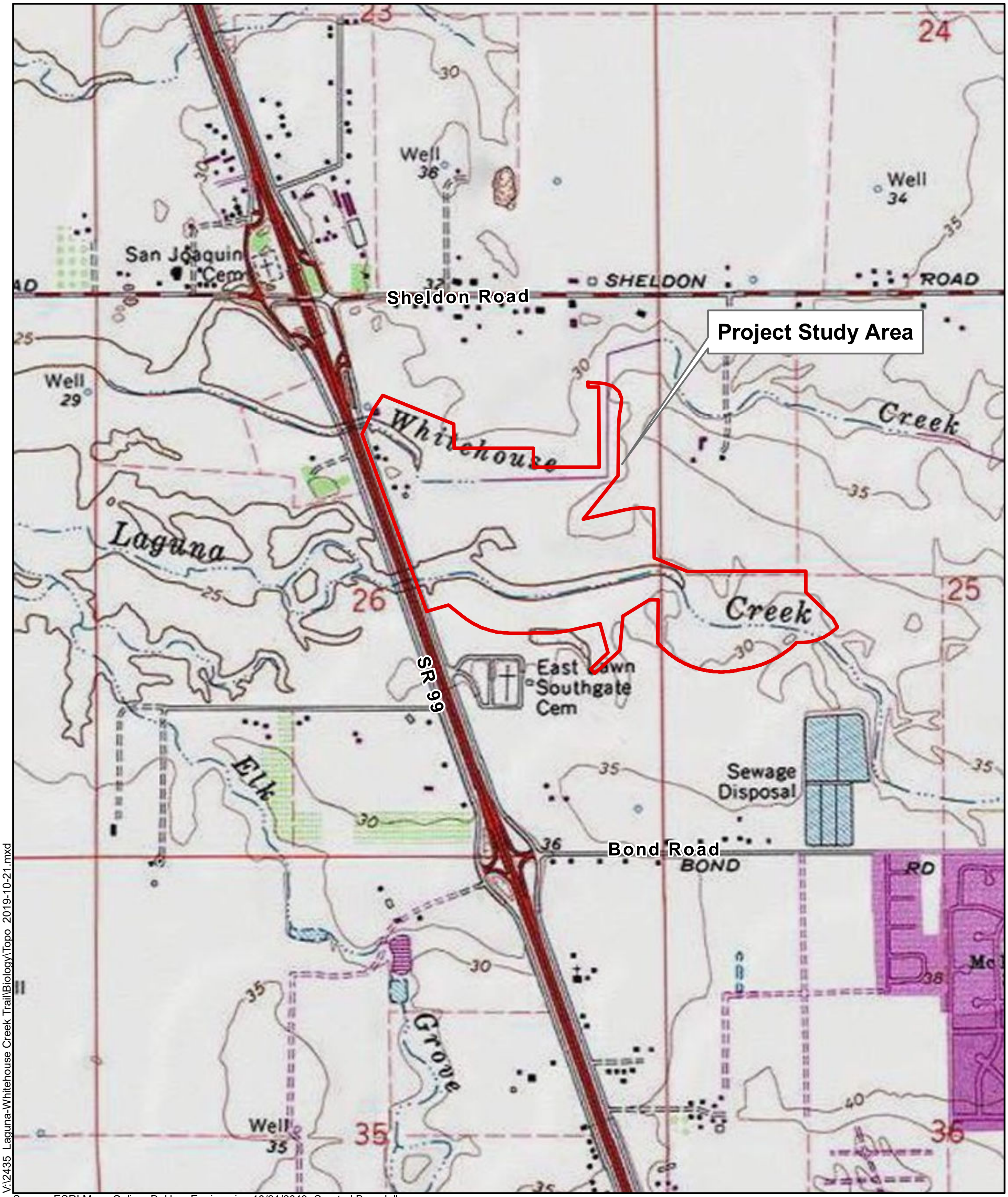
v:\1836_11thStBridge\Cultural\F2_Loc_10-12-10.mxd

0 0.25 0.5 0.75 1 Miles

Project Location

Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018

City of Elk Grove, Sacramento County, California



V:\2435_Laguna-Whitehouse Creek Trail\Biology\Topo_2019-10-21.mxd

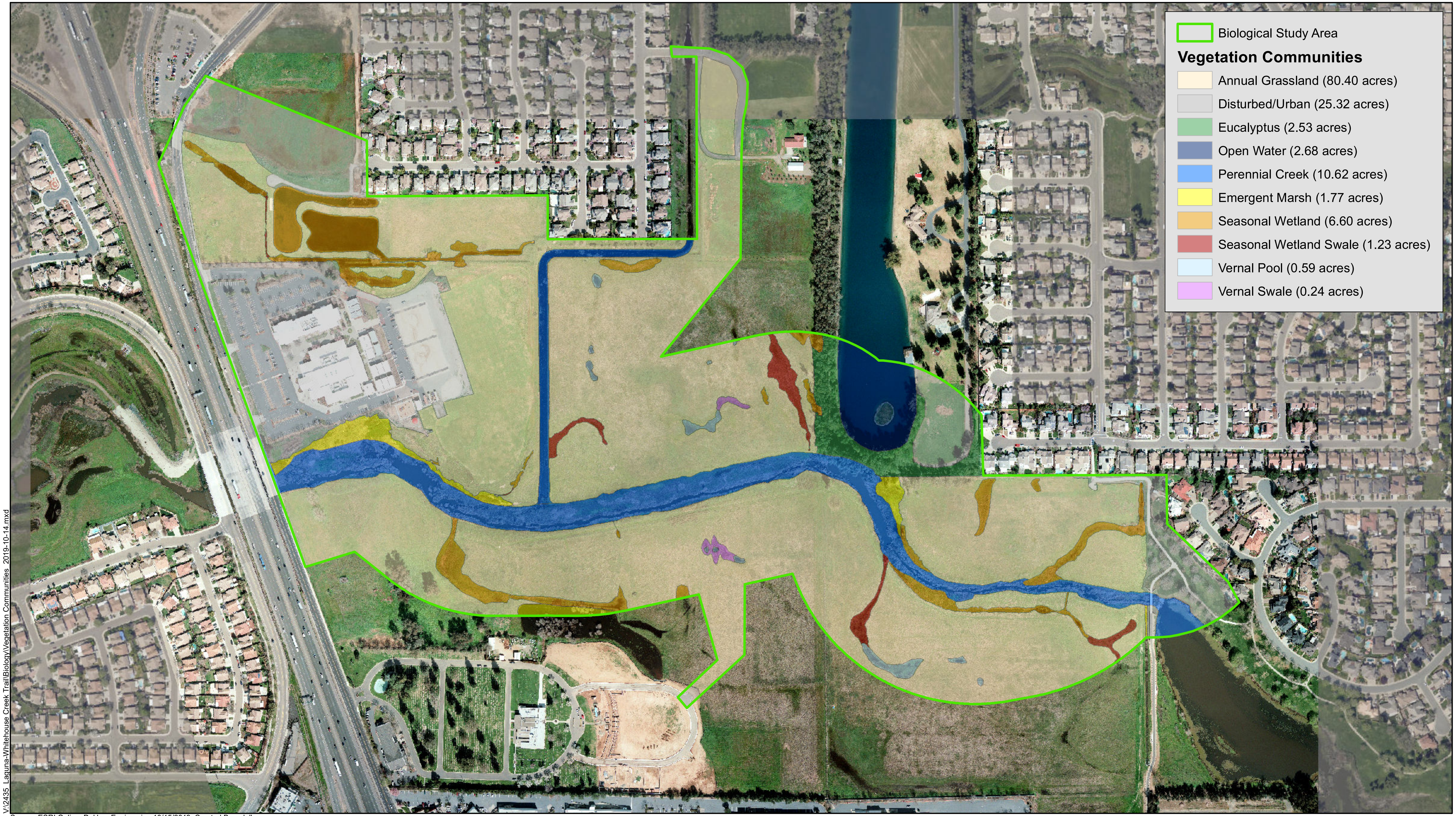
Source: ESRI Maps Online; Dokken Engineering 10/21/2019; Created By: adellas

Topographic Map

Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018

City of Elk Grove, Sacramento County, California

0 0.1 0.2 0.3 0.4 Miles



V:\2435 Laguna-Whitehouse Creek Trail\Biology\Vegetation Communities 2019-10-14.mxd

Source: ESRI Online; Dokken Engineering 10/15/2019; Created By: adellas

N

0 200 400 600 800 1,000 Feet

Waters and Vegetation Communities within the Biological Study Area

Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018

City of Elk Grove, California

United States Department of Agriculture

NRCS

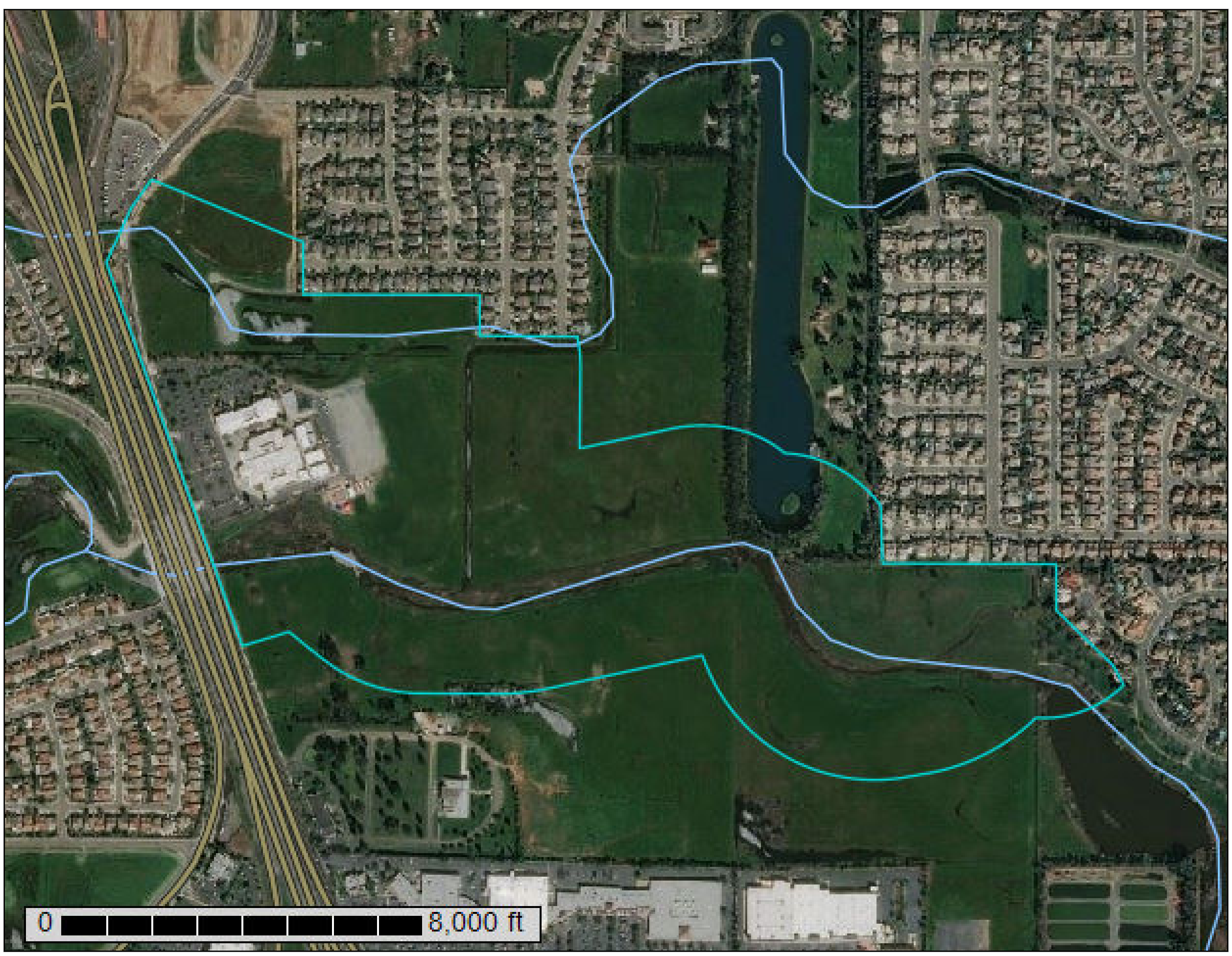
Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Sacramento County, California

WDR018-LCWC



May 21, 2018

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

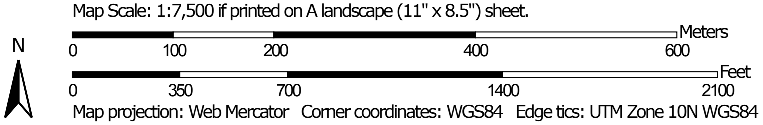
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Soil Map

Map Scale: 1:7,500 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sacramento County, California
Survey Area Data: Version 16, Sep 26, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 12, 2016—Mar 28, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
111	Bruella sandy loam, 0 to 2 percent slopes	16.9	13.5%
134	Dierssen sandy clay loam, drained, 0 to 2 percent slopes	7.6	6.0%
174	Madera loam, 0 to 2 percent slopes	10.6	8.5%
213	San Joaquin silt loam, leveled, 0 to 1 percent slopes	12.0	9.6%
214	San Joaquin silt loam, 0 to 3 percent slopes	78.0	62.4%
Totals for Area of Interest		**125.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Sacramento County, California

111—Bruella sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hhlk
Elevation: 30 to 150 feet
Mean annual precipitation: 15 to 22 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Bruella and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bruella

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 18 inches: sandy loam
H2 - 18 to 42 inches: sandy clay loam
H3 - 42 to 61 inches: sandy clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.8 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Kimball

Percent of map unit: 5 percent
Hydric soil rating: No

San joaquin

Percent of map unit: 5 percent
Hydric soil rating: No

Xerarents

Percent of map unit: 5 percent
Hydric soil rating: No

134—Dierssen sandy clay loam, drained, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hhm9
Elevation: 20 feet
Mean annual precipitation: 17 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Not prime farmland

Map Unit Composition

Dierssen and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dierssen

Setting

Landform: Basin floors
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 14 inches: sandy clay loam
H2 - 14 to 31 inches: clay loam
H3 - 31 to 60 inches: cemented

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 31 to 60 inches to duripan
Natural drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Rare
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Hydric soil rating: Yes

Minor Components

Galt

Percent of map unit: 4 percent
Landform: Basin floors
Hydric soil rating: Yes

Tinnin

Percent of map unit: 3 percent
Hydric soil rating: No

Unnamed, lack clay subsoil

Percent of map unit: 2 percent
Hydric soil rating: No

Unnamed, occasional flooded

Percent of map unit: 2 percent
Hydric soil rating: No

Clear lake

Percent of map unit: 1 percent
Landform: Basin floors
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Hydric soil rating: Yes

Cosumnes

Percent of map unit: 1 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Hydric soil rating: Yes

Egbert

Percent of map unit: 1 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Hydric soil rating: Yes

Scribner

Percent of map unit: 1 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Hydric soil rating: Yes

174—Madera loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hhnl
Elevation: 20 to 250 feet
Mean annual precipitation: 14 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Madera and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Madera

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 15 inches: loam
H2 - 15 to 29 inches: clay
H3 - 29 to 60 inches: indurated

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: About 15 inches to abrupt textural change; 29 to 60 inches to duripan
Natural drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: D

Ecological site: LOAMY CLAYPAN (R017XD047CA)
Hydric soil rating: No

Minor Components

Kimball
Percent of map unit: 5 percent
Hydric soil rating: No

Clear lake
Percent of map unit: 4 percent
Landform: Drainageways
Hydric soil rating: Yes

Galt
Percent of map unit: 4 percent
Landform: Terraces
Hydric soil rating: Yes

Unnamed, rarely flooded
Percent of map unit: 2 percent
Hydric soil rating: No

213—San Joaquin silt loam, leveled, 0 to 1 percent slopes

Map Unit Setting
National map unit symbol: hhpv
Elevation: 20 to 500 feet
Mean annual precipitation: 10 to 22 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
San joaquin and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of San Joaquin

Setting
Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile
H1 - 0 to 23 inches: silt loam
H2 - 23 to 28 inches: clay loam
H3 - 28 to 54 inches: indurated

H4 - 54 to 60 inches: stratified sandy loam to loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: About 23 inches to abrupt textural change; 28 to 54 inches to duripan
Natural drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Bruella

Percent of map unit: 3 percent
Hydric soil rating: No

Durixeralfs

Percent of map unit: 3 percent
Hydric soil rating: No

Galt

Percent of map unit: 2 percent
Landform: Depressions
Hydric soil rating: Yes

Hedge

Percent of map unit: 2 percent
Hydric soil rating: No

Kimball

Percent of map unit: 2 percent
Hydric soil rating: No

Xerarents

Percent of map unit: 2 percent
Hydric soil rating: No

Unnamed, rarely flooded

Percent of map unit: 1 percent
Hydric soil rating: No

214—San Joaquin silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: hhpw
Elevation: 20 to 500 feet
Mean annual precipitation: 10 to 22 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

San joaquin and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of San Joaquin

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 23 inches: silt loam
H2 - 23 to 28 inches: clay loam
H3 - 28 to 54 inches: indurated
H4 - 54 to 60 inches: stratified sandy loam to loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: About 23 inches to abrupt textural change; 28 to 54 inches to duripan
Natural drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: C
Ecological site: LOAMY (R017XD045CA)
Hydric soil rating: No

Minor Components

Galt

Percent of map unit: 4 percent
Landform: Depressions
Hydric soil rating: Yes

Bruella

Percent of map unit: 4 percent
Hydric soil rating: No

Hedge

Percent of map unit: 3 percent
Hydric soil rating: No

Kimball

Percent of map unit: 3 percent
Hydric soil rating: No

Unnamed, rarely flooded

Percent of map unit: 1 percent
Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix B – USFWS, CNDDB, and CNPS Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: October 15, 2019
Consultation Code: 08ESMF00-2017-SLI-0085
Event Code: 08ESMF00-2020-E-00295
Project Name: Laguna Creek Trail Project

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2017-SLI-0085

Event Code: 08ESMF00-2020-E-00295

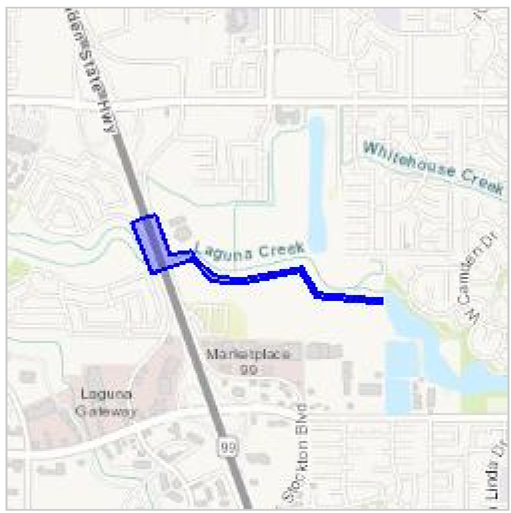
Project Name: Laguna Creek Trail Project

Project Type: RECREATION CONSTRUCTION / MAINTENANCE

Project Description: Construction of new 4,100 long trail segment and bridge to close the gap between the Whitehouse Creek Trail and Laguna Creek Trail

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/38.43078237010417N121.39794668712466W



Counties: Sacramento, CA

Endangered Species Act Species

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Reptiles

NAME	STATUS
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850 Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Florin (3812144) OR Elk Grove (3812143) OR Sacramento East (3812154) OR Sacramento West (3812155) OR Galt (3812133) OR Bruceville (3812134) OR Courtland (3812135) OR Carmichael (3812153) OR Clarksburg (3812145))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Ahart's dwarf rush *Juncus leiospermus var. ahartii*	PMJUN011L1	None	None	G2T1	S1	1B.2
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
bank swallow *Riparia riparia*	ABPAU08010	None	Threatened	G5	S2	
black-crowned night heron *Nycticorax nycticorax*	ABNGA11010	None	None	G5	S4	
Boggs Lake hedge-hyssop *Gratiola heterosepala*	PDSCR0R060	None	Endangered	G2	S2	1B.2
Bolander's water-hemlock *Cicuta maculata var. bolanderi*	PDAPI0M051	None	None	G5T4T5	S2?	2B.1
bristly sedge *Carex comosa*	PMCYP032Y0	None	None	G5	S2	2B.1
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S3	SSC
California black rail *Laterallus jamaicensis coturniculus*	ABNME03041	None	Threatened	G3G4T1	S1	FP
California linderiella *Linderiella occidentalis*	ICBRA06010	None	None	G2G3	S2S3	
California tiger salamander *Ambystoma californiense*	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
chinook salmon - Central Valley spring-run ESU *Oncorhynchus tshawytscha pop. 6*	AFCHA0205A	Threatened	Threatened	G5	S1	
chinook salmon - Sacramento River winter-run ESU *Oncorhynchus tshawytscha pop. 7*	AFCHA0205B	Endangered	Endangered	G5	S1	
Coastal and Valley Freshwater Marsh *Coastal and Valley Freshwater Marsh*	CTT52410CA	None	None	G3	S2.1	
Cooper's hawk *Accipiter cooperii*	ABNKC12040	None	None	G5	S4	WL
Delta mudwort *Limosella australis*	PDSCR10030	None	None	G4G5	S2	2B.1
Delta tule pea *Lathyrus jepsonii var. jepsonii*	PDFAB250D2	None	None	G5T2	S2	1B.2
double-crested cormorant *Phalacrocorax auritus*	ABNFD01020	None	None	G5	S4	WL

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
dwarf downingia *Downingia pusilla*	PDCAM060C0	None	None	GU	S2	2B.2
Elderberry Savanna *Elderberry Savanna*	CTT63440CA	None	None	G2	S2.1	
Ferris' milk-vetch *Astragalus tener var. ferrisiae*	PDFAB0F8R3	None	None	G2T1	S1	1B.1
ferruginous hawk *Buteo regalis*	ABNKC19120	None	None	G4	S3S4	WL
giant gartersnake *Thamnophis gigas*	ARADB36150	Threatened	Threatened	G2	S2	
golden eagle *Aquila chrysaetos*	ABNKC22010	None	None	G5	S3	FP
great blue heron *Ardea herodias*	ABNGA04010	None	None	G5	S4	
great egret *Ardea alba*	ABNGA04040	None	None	G5	S4	
Great Valley Cottonwood Riparian Forest *Great Valley Cottonwood Riparian Forest*	CTT61410CA	None	None	G2	S2.1	
Great Valley Mixed Riparian Forest *Great Valley Mixed Riparian Forest*	CTT61420CA	None	None	G2	S2.2	
Great Valley Valley Oak Riparian Forest *Great Valley Valley Oak Riparian Forest*	CTT61430CA	None	None	G1	S1.1	
hairy water flea *Dumontia oregonensis*	ICBRA23010	None	None	G1G3	S1	
Heckard's pepper-grass *Lepidium latipes var. heckardii*	PDBRA1M0K1	None	None	G4T1	S1	1B.2
hoary bat *Lasiurus cinereus*	AMACC05030	None	None	G5	S4	
least Bell's vireo *Vireo bellii pusillus*	ABPBW01114	Endangered	Endangered	G5T2	S2	
legenere *Legenere limosa*	PDCAM0C010	None	None	G2	S2	1B.1
longfin smelt *Spirinchus thaleichthys*	AFCHB03010	Candidate	Threatened	G5	S1	
marsh skullcap *Scutellaria galericulata*	PDLAM1U0J0	None	None	G5	S2	2B.2
Mason's lilaeopsis *Lilaeopsis masonii*	PDAPI19030	None	Rare	G2	S2	1B.1
merlin *Falco columbarius*	ABNKD06030	None	None	G5	S3S4	WL
midvalley fairy shrimp *Branchinecta mesovallensis*	ICBRA03150	None	None	G2	S2S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Northern Hardpan Vernal Pool *Northern Hardpan Vernal Pool*	CTT44110CA	None	None	G3	S3.1	
pappose tarplant *Centromadia parryi ssp. parryi*	PDAST4R0P2	None	None	G3T2	S2	1B.2
Peruvian dodder *Cuscuta obtusiflora var. glandulosa*	PDCUS01111	None	None	G5T4?	SH	2B.2
purple martin *Progne subis*	ABPAU01010	None	None	G5	S3	SSC
Ricksecker's water scavenger beetle *Hydrochara rickseckeri*	IICOL5V010	None	None	G2?	S2?	
Sacramento Orcutt grass *Orcuttia viscida*	PMPOA4G070	Endangered	Endangered	G1	S1	1B.1
Sacramento perch *Archoplites interruptus*	AFCQB07010	None	None	G2G3	S1	SSC
Sacramento splittail *Pogonichthys macrolepidotus*	AFCJB34020	None	None	GNR	S3	SSC
Sacramento Valley tiger beetle *Cicindela hirticollis abrupta*	IICOL02106	None	None	G5TH	SH	
saline clover *Trifolium hydrophilum*	PDFAB400R5	None	None	G2	S2	1B.2
Sanford's arrowhead *Sagittaria sanfordii*	PMALI040Q0	None	None	G3	S3	1B.2
side-flowering skullcap *Scutellaria lateriflora*	PDLAM1U0Q0	None	None	G5	S2	2B.2
slender Orcutt grass *Orcuttia tenuis*	PMPOA4G050	Threatened	Endangered	G2	S2	1B.1
song sparrow ("Modesto" population) *Melospiza melodia*	ABPBXA3010	None	None	G5	S3?	SSC
steelhead - Central Valley DPS *Oncorhynchus mykiss irideus pop. 11*	AFCHA0209K	Threatened	None	G5T2Q	S2	
Suisun Marsh aster *Symphyotrichum lentum*	PDASTE8470	None	None	G2	S2	1B.2
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S3	
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T2	S2	
Valley Oak Woodland *Valley Oak Woodland*	CTT71130CA	None	None	G3	S2.1	
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
vernal pool tadpole shrimp *Lepidurus packardi*	ICBRA10010	Endangered	None	G4	S3S4	
watershield *Brasenia schreberi*	PDCAB01010	None	None	G5	S3	2B.3
western pond turtle *Emys marmorata*	ARAAD02030	None	None	G3G4	S3	SSC
western spadefoot *Spea hammondii*	AAABF02020	None	None	G3	S3	SSC
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
white-tailed kite *Elanus leucurus*	ABNKC06010	None	None	G5	S3S4	FP
woolly rose-mallow *Hibiscus lasiocarpos var. occidentalis*	PDMAL0H0R3	None	None	G5T3	S3	1B.2
yellow-headed blackbird *Xanthocephalus xanthocephalus*	ABPBXB3010	None	None	G5	S3	SSC

Record Count: 68

CNPS California Native Plant Society

Inventory of Rare and Endangered Plants

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

22 matches found. *Click on scientific name for details*

Search Criteria

California Rare Plant Rank is one of [1A, 1B, 2A, 2B, 3], Found in Quads 3812154, 3812155, 3812153, 3812144, 3812143, 3812135 3812134 and 3812133;

Modify Search Criteria Export to Excel Modify Columns Modify Sort Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Astragalus tener var. ferrisiae	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	1B.1	S1	G2T1
Brasenia schreberi	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	Jun-Sep	2B.3	S3	G5
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	2B.1	S2	G5
Centromadia parryi ssp. parryi	pappose tarplant	Asteraceae	annual herb	May-Nov	1B.2	S2	G3T2
Cicuta maculata var. bolanderi	Bolander's water-hemlock	Apiaceae	perennial herb	Jul-Sep	2B.1	S2?	G5T4T5
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	Convolvulaceae	annual vine (parasitic)	Jul-Oct	2B.2	SH	G5T4?
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2	S2	GU
Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	Apr-Aug	1B.2	S2	G2
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Juglans hindsii	Northern California black walnut	Juglandaceae	perennial deciduous tree	Apr-May	1B.1	S1	G1
Juncus leiospermus var. ahartii	Ahart's dwarf rush	Juncaceae	annual herb	Mar-May	1B.2	S1	G2T1
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	May-Jul(Aug-Sep)	1B.2	S2	G5T2
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
Lepidium latipes var. heckardii	Heckard's pepper-grass	Brassicaceae	annual herb	Mar-May	1B.2	S1	G4T1
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	1B.1	S2	G2
Orcuttia tenuis	slender Orcutt grass	Poaceae	annual herb	May-Sep(Oct)	1B.1	S2	G2
Orcuttia viscida	Sacramento Orcutt grass	Poaceae	annual herb	Apr-Jul(Sep)	1B.1	S1	G1
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3
Scutellaria galericulata	marsh skullcap	Lamiaceae	perennial rhizomatous herb	Jun-Sep	2B.2	S2	G5
Scutellaria lateriflora	side-flowering skullcap	Lamiaceae	perennial rhizomatous herb	Jul-Sep	2B.2	S2	G5
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2	S2	G2
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	1B.2	S2	G2

Suggested Citation

California Native Plant Society, Rare Plant Program. 2019. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 15 October 2019].

Search the Inventory
Simple Search
Advanced Search
Glossary

Information
About the Inventory
About the Rare Plant Program
CNPS Home Page
About CNPS
Join CNPS

Contributors
The Calflora Database
The California Lichen Society
California Natural Diversity Database
The Jepson Flora Project
The Consortium of California Herbaria
CalPhotos

Questions and Comments
rareplants@cnps.org

Appendix C – Representative Photographs

Representative Photograph 1. View of seasonal wetland/detention basin in northwestern quadrant of BSA, facing west.

Representative Photograph 2. View of seasonal wetland along north side of Creekside Church, facing east.

Representative Photograph 3. View of Whitehouse Creek, facing south toward confluence with Laguna Creek.

Representative Photograph 4. View of Vernal Pool north of Laguna Creek and east of Whitehouse Creek, facing south.

Representative Photograph 5. View of Emergent Marsh adjacent Laguna Creek, south of Shortline Lake, facing northwest.

Representative Photograph 6. View of Laguna Creek and aquatic vegetation, facing east.

Representative Photograph 7. View of Laguna Creek and aquatic vegetation south of Shortline Lake, facing north.

Representative Photograph 8. View of annual grassland and seasonal wetland swale south of Laguna Creek, facing south.

Appendix G GGS Habitat Assessment

Eric C. Hansen
Consulting Environmental Biologist

4200 N. Freeway Blvd., Suite 4
Sacramento, CA
95834-1235

Phone 916-921-8281
Fax 916-921-8278
Mobile 916-214-7848

Date:

To: **Amy Dunay**
Dokken Engineering
110 Blue Ravine Road, Ste 200
Folsom, CA 95630

Re: **Giant gartersnake** (*Thamnophis gigas*) **Habitat Assessment** on the City of Elk Grove's Laguna Creek / Whitehouse Creek Trail Project, Sacramento County, California.

Dear Ms. Dunay,

This memorandum provides the results of the 6 March, 2020 survey at Elk Grove's Laguna Creek/Whitehouse Creek in Sacramento County, California. This survey was conducted to assess potential habitat for the giant garter snake (*Thamnophis gigas*) and was completed in reference to figures provided by Dokken Engineering via electronic mail on 6 February 2019. Potential habitat was evaluated using a combination of ground-level surveys, National Agricultural Imagery Program (NAIP) aerial imagery, and Geographic Information System (GIS) program ArcGIS 10.6 to roughly quantify existing habitat, to assess the overall suitability of the site based on the prevailing character of the landscape, and to examine the site's location in regard to historical and recent giant garter snake occurrence records. This memorandum provides a thorough species background (Appendix A), details the methodology used to assess habitat suitability (Appendix B), and includes a discussion of the site's suitability for giant garter snake conservation. Photographs illustrating the site's general character are provided in a separate photo appendix at the end of this document (Appendix C).

The lands encompassing this reach of Laguna Creek (Figure 1) area characterized by a combination of suitable features required to support permanent populations of garter snakes, including: 1) sufficient water during the active summer season to supply cover and food such as small fish and amphibians; 2) emergent, herbaceous aquatic vegetation accompanied by vegetated banks to provide basking and foraging habitat; 3) bankside burrows, holes and crevices to provide short-term aestivation sites; 4) high ground or upland habitat above the annual high water mark to provide cover and refugia from floodwaters during the dormant winter season (Hansen 1988, Hansen and Brode 1980).

The lands encompassing this reach of Whitehouse Creek constitute marginal habitat, which is characterized by any combination of those features listed above needed to support transient giant garter snakes on a temporary basis, or to act as connective corridors between areas of more stable or desirable habitat.

Figure 1. Map of giant gartersnake landscape suitability values

Project Description

The following is a project description provided by Dokken Engineering via electronic mail on 18 February, 2020:

"The Project would be constructed in two phases. Phase I of the Project would include construction of a maintenance access road (paved with no striping) from the existing Laguna Creek Trail, located south of the intersection of Beckington Drive and White Peacock Way, to a connection at East Stockton Boulevard approximately 750 feet south of the intersection of East Stockton Boulevard and Cantwell Drive. The project may also consider a connection to the west end of the existing trail at Camden Park. The maintenance access road would be constructed above the 10-year flood plain to provide City maintenance crews and contractors access to Laguna and Whitehouse Creeks, especially during storm events. The maintenance access road would consist of 12 to 16 feet of pavement with unpaved shoulders ranging from 2 to 3 feet. While the majority of the maintenance access road would be paved, the segments of the maintenance road which provide direct access to Laguna Creek may be unpaved. Where determined feasible, single span pre-fab steel or concrete bridges providing necessary access across Laguna and Whitehouse Creeks.

Phase II of the Project would consist of converting the maintenance access road into a Class 1 multi-use trail corridor connection between the Camden Park and East Stockton Boulevard, with striping, paving unpaved segments of the access road, and trail amenities incorporated as necessary. Phase II of the Project would complete a gap within the trail system in accordance with the City's Bicycle, Pedestrian, and Trails Master Plan.

A future phase, Phase III, may be constructed which would preserve, rehabilitate, and enhance the creeks and adjacent wetlands; however, Phase III is not part of this Project and will be subject to environmental review at a later time.

Right-of-way acquisitions and temporary construction easements are needed where the multi-functional corridor passes through privately-owned parcels.

This Project is funded through the City's Storm Drainage Master Plan and is subject to compliance with the California Environmental Quality Act (CEQA). The lead agency for CEQA compliance is the City. The Project is also subject to compliance with the National Environmental Policy Act (NEPA) due to anticipated federal permitting through the U.S. Army Corps of Engineers federal nexus during the Clean Water Act Section 404 permitting process for project impacts to waters of the U.S."

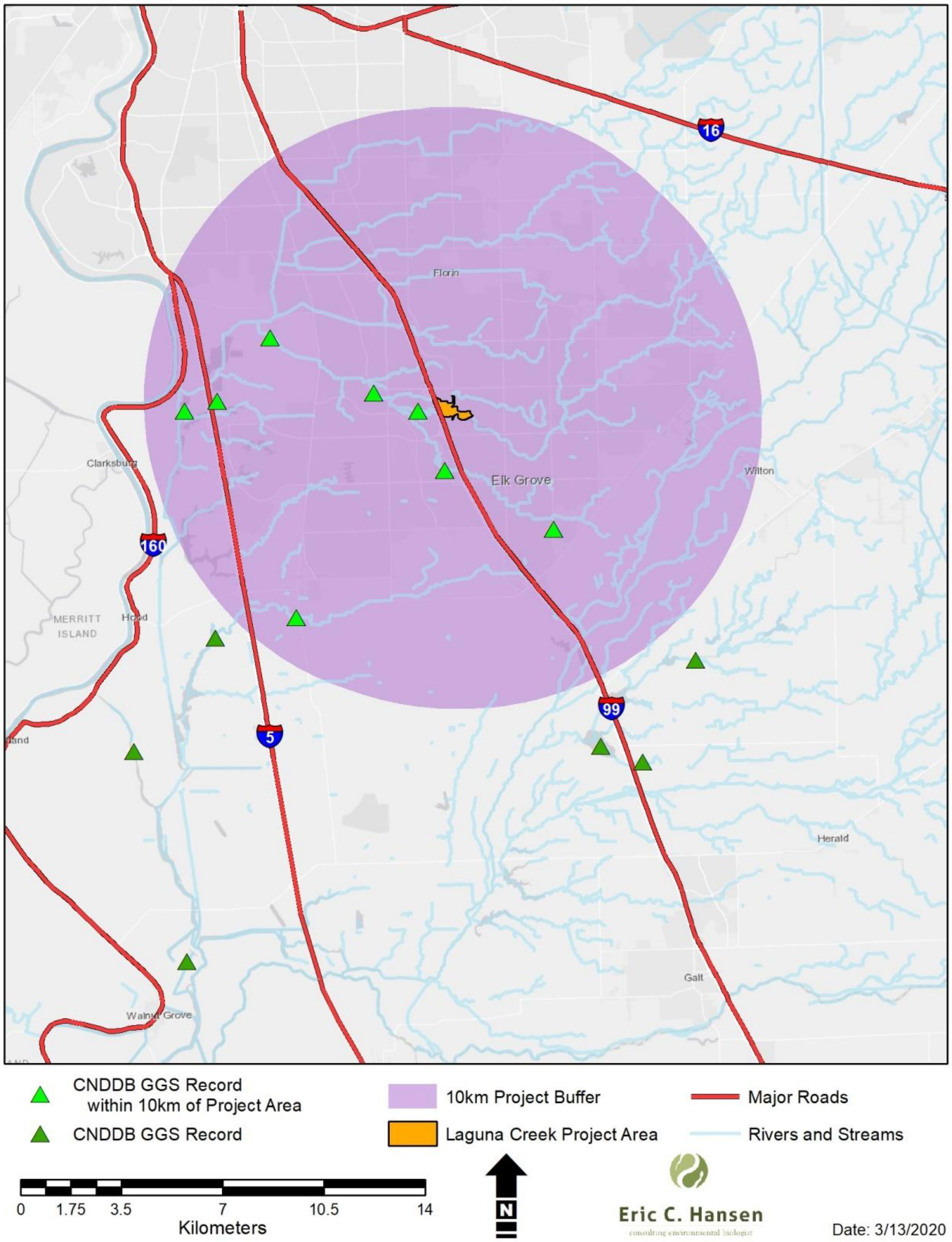
Proximity to Known Records

Giant gartersnakes have been documented within the project vicinity. A search of the California Natural Diversity Database (CNDDB 2020) shows 8 GGS records within a 10-kilometer radius of the project area (Table 1, Figure 2), with at least 4 GGS documented within a 5-kilometer radius of the project. While the CNDDB search resulted in several occurrences of GGS near the project area, over half of the occurrences are nearly 30+ years old. In addition to the lapse of time since the majority of occurrences, there have been significant land use changes in this area which greatly reduce the likelihood these occurrences are still viable.

Table 1. CNDDB GGS occurrence records within 10 km of the Project site

Occ. No.	USGS 7.5' Topographic Quadrangle(s)	Township	Range	Section	County	Year Last Seen
52	Bruceville	6N	5E	17	Sacramento	1976
169	Elk Grove	6N	6E	08	Sacramento	2002
13	Florin	7N	5E	35	Sacramento	1982
84	Florin	7N	5E	26	Sacramento	1982
15	Florin	7N	4E	25	Sacramento	1992
147	Florin	7N	4E	25	Sacramento	1965
14	Florin	7N	5E	27	Sacramento	1976
198	Florin	7N	5E	17	Sacramento	2005

Figure 2. CNDDB occurrences within 10 Km of the Project site



Results and Discussion

Results from this survey were determined by a habitat assessment conducted on 6 March 2020 at Elk Grove's Laguna Creek/White House Creek.

During the 2020 survey to identify and classify areas of potential giant gartersnake habitat in the Project area, aquatic features were evaluated using a list of 22 variables associated with giant gartersnake life history to characterize features using Geographic Information Systems (GIS), resulting in a database file depicting cumulative habitat scores for each feature. Aquatic reaches within the entirety of the Project area have been projected as polygon features on maps and classified by cumulative habitat score to show suitability for giant gartersnakes. This evaluation provides a series of GIS-generated maps illustrating habitat value by colored code, supporting a detailed classification, by trait, of habitat variables within the Project area that can be used to guide planning and mitigation (Hansen 2017).

The habitat surrounding Laguna Creek is deemed suitable habitat due to a combination of features capable of supporting a permanent population of GGS and adjacent to this suitable habitat is Whitehouse Creek, which is marginal at best. Although the landscape surrounding Laguna Creek is considered suitable, landscape changes and urban development that has taken place in the surrounding area since the last CNDDB record of occurrence may reduce the likelihood of GGS persistence in the region. However, patterns of contemporary occupancy and distribution of GGS is this region remain relatively unexplored, and intensive sampling has not been conducted to my knowledge since prior to 2000.

If you have questions regarding this evaluation, the methodologies, or any of the subsequent comments, please do not hesitate to contact me. I will gladly expand on any of these topics upon request.

Sincerely,

Eric C. Hansen

Eric C. Hansen
Consulting Environmental Biologist

The giant gartersnake (GGS) is a federal- and state-listed species endemic to California's Great Central Valley. Described as among California's most aquatic gartersnakes (Fitch 1940), GGS are associated with low-gradient streams and the wetlands and marshes of the valley floor. The conversion of Central Valley wetlands for agriculture and urban uses has resulted in the loss of as much as 95% of historical habitat for the GGS (Wylie et al. 1997). In some instances where wetlands have been reclaimed, GGS have adapted successfully to rice agriculture and the irrigation infrastructure supporting its practice (G. Hansen and J. Brode 1992; G. Hansen 1998; USFWS 1999; Wylie et al. 1997). GGS once ranged from Buena Vista Lake near Bakersfield, Kern County, north toward the vicinity of Chico in Glenn and Colusa Counties (Hansen and Brode 1980). Due mainly to loss or degradation of aquatic habitat resulting from agricultural and urban development, GGS has been either extirpated or else suffered serious declines throughout much of its former range. The current known distribution of GGS extends from near Chico in Butte County south to the Mendota Wildlife Area in Fresno County. GGS now occupy two geographically separate distributions within the Sacramento Valley and the Central San Joaquin Valley.

In areas where GGS has adapted to agriculture, maintenance activities such as vegetation and rodent control, bankside grading or dredging, and discharge of contaminants may also threaten their survival (Hansen and Brode 1980, Brode and Hansen 1992, Hansen and Brode 1993, USFWS 1999, Wylie et al. 2004). Continued loss of wetland or other suitable habitat resulting from agricultural and urban development constitutes the greatest threat to this species' survival, particularly in the southern aspect of its range.

Appendix B

Habitat Assessment

To identify and classify areas of potential giant gartersnake habitat in the Project area, aquatic features were evaluated using a list of 22 variables associated with giant gartersnake life history to characterize features using Geographic Information Systems (GIS), resulting in a database file depicting cumulative habitat scores for each feature. Aquatic reaches within the entirety of the Project area have been projected as polygon features on maps and classified by cumulative habitat score to show suitability for giant gartersnakes. This evaluation provides a series of GIS-generated maps illustrating habitat value by colored code, supporting a detailed classification, by trait, of habitat variables within the Project area that can be used to guide planning and mitigation.

Methods

Though no formal habitat assessment protocol exists for the giant gartersnake, the proposed assessment will assess attributes similar to those developed and provided by the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife (formerly Department of Fish and Game) for California tiger salamander (*Ambystoma californiense*) and California red-legged frog (*Rana draytonii*). The work product characterizes suitability based on giant gartersnake life history parameters, the condition and contiguity of regional landscape features, including aquatic corridors providing linkages to suitable habitats, and proximity and connectedness to historical and recent giant gartersnake observations. Though informal, this approach has been applied repeatedly under varying scenarios (both large- and small-scale) to inform decision making through the NEPA/CEQA process.

Habitat evaluation criteria in this evaluation are based on recognized minimum ecological requirements for giant gartersnakes. Each criterion is scored, with a final numerical total represented categorically using GIS. Where possible, all results are based on a visual assessment of habitat; where visual confirmation was not possible; values are based on interpretation of aerial imagery. All surveys were conducted in publically accessible waters by watercraft. Aquatic habitat values assigned to agricultural ditches, canals, and drains in the study area are based on aerial imagery and cursory observations made from public waterways, public access roads and private roads transited during the study. No trapping, water sampling or other data collection activities occurred on agricultural ditches, canals, and drains in the study area. This evaluation provides a GIS-generated map illustrating habitat value by colored code, supporting a detailed classification, by trait, of habitat variables within the Project area. Scoring methodologies used for this assessment are modified from Appendix D (Page 157) of the USFWS 1999 Draft Recovery Plan for the Giant Garter Snake. The evaluation form has been updated for greater rigor in assessing habitat value, incorporates a step-wise scale to reduce scoring ambiguity, and is modified for use in GIS analyses.

For scoring the values of specific habitat attributes, this assessment includes a consideration of aquatic and upland habitat within 200 feet of identified ditches, drains, channels, or swales. In its Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects with Relatively Small Effects on the Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, and Yolo Counties, California (USFWS 1997, 2004), the USFWS incorporated a standard of 200 feet of upland on each bank side of linear habitat as suitable upland for giant gartersnakes when assessing a project's disturbance area. The 200-foot upland buffer has become standard in subsequent Biological Opinions and impact analyses and is used as a set criterion for assessing outlying habitat value. However, because an overarching goal of this assessment is to place the study area in regional perspective, both directly- and remotely-sensed land cover data was used to characterize landscapes outside of the 200-foot buffer to interpret the influence this may have on the aquatic features of interest.

GIS analysis was completed using the program ArcGIS Version 10.4. Georectified orthographic aerial photos acquired through the National Agriculture Imagery Program (NAIP) were used as base templates to ensure the accurate depiction of habitat surveyed. GIS files delineating the Project area, provided by Dokken, were used as a base to create an attribute table containing all ranking variables, with associated variables documented for each segment and tallied to provide a total habitat score. The symbol legend of these layers was then separated into three classes based on the total score. This classification results in a map of aquatic habitat with corresponding habitat values of individual segments distinguished by unique legend colors. Legend classes with corresponding point ranges are summarized in **Table 1**, below.

Table 1: Scoring value and range

Habitat Value	Point Range
Unsuitable	0-7
Marginal	8-14
Suitable	15-25

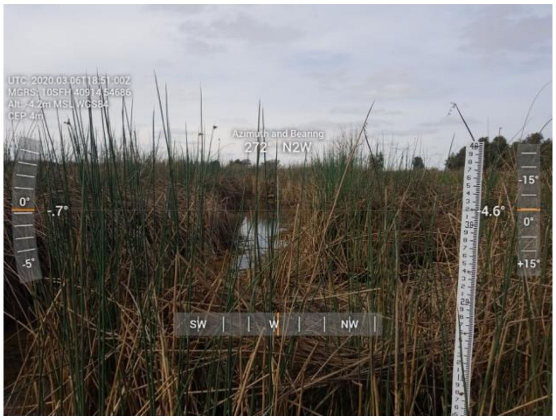
Classification values are based upon recognized habitat characteristics and personal experience and knowledge of giant gartersnakes and their life history, distribution, and habitat covariates. Although point breaks within this valuation (Table 1) are based upon giant gartersnake habitat and ecological requirements, they are somewhat arbitrary in nature. The scores for each habitat feature provided within the database should be consulted when considering specific habitat types or trends. Valuation categories for potential habitats are defined below.

Suitable habitat is characterized by all of the features required to support permanent populations of gartersnakes, including: 1) sufficient water during the active summer season to supply cover and food such as small fish and amphibians; 2) emergent, herbaceous aquatic vegetation accompanied by vegetated banks to provide basking and foraging habitat; 3) bankside burrows, holes and crevices to provide short-term aestivation sites; 4) high ground or upland habitat above the annual high water mark to provide cover and refugia from floodwaters during the dormant winter season (Hansen 1988, Hansen and Brode 1980).

Marginal habitat is characterized by any combination of those features listed above needed to support transient giant gartersnakes on a temporary basis, or to act as connective corridors between areas of more stable or desirable habitat. This habitat need only possess the water, vegetation, and refugia required to provide minimal coverage for dispersing snakes. On its own, marginal habitat is considered incapable of supporting permanent populations of giant gartersnakes and is typically ephemeral, providing no permanent source of prey.

Unsuitable land is devoid of the water, vegetation, and refugia necessary to support giant gartersnakes for a meaningful time. Such habitat is generally composed of large rivers, lakes, gunite drains or temporary swales that possess no water during the active spring and summer seasons. As such, unsuitable corridors are no more likely to support giant gartersnakes than any non-aquatic environment, and if they do so, they do so only by chance. Transient features, such as shallow trenches and furrows intended only to direct winter runoff, typically do not persist through the remainder of the season, do not provide the aquatic features necessary to support giant gartersnakes for a meaningful time, and should therefore be assigned to this category. However, because transient features still exhibit characteristics such as winter water, bank sun, and bank or upland vegetation, they can accumulate the number of points necessary to qualify as *marginal* habitat in this evaluation scheme. Wetted features lacking any supporting characteristics are also deemed unsuitable if the distance or connectivity to suitable, occupied habitat is likely to preclude their use as migration corridors.

Appendix C



Laguna Creek – East end facing west

Laguna Creek – East end facing south

Laguna Creek – East end facing east

Laguna Creek – East end facing north

Laguna Creek – Eastern end facing west

Laguna Creek – Eastern end facing north

Appendix C

Laguna Creek – Eastern end facing south

Burrows found near Laguna Creek

Burrows found near Laguna Creek

Laguna Creek upland facing west

South side of Laguna Creek facing northeast

South side of Laguna Creek facing north

Appendix C

Central Laguna Creek facing east

Central Laguna Creek facing northeast

Laguna Creek – western end facing west

Small creek connecting to west end Laguna Creek

Laguna Creek – west end facing east

Laguna Creek – western most end facing north

Appendix C

Laguna Creek – western most end facing south

Whitehouse Creek – northeast end facing southwest

Whitehouse Creek – north end facing east

Whitehouse Creek – middle section facing east

Whitehouse Creek – middle section facing north

Whitehouse Creek – southern end facing north

Appendix C

Whitehouse Creek – southern end facing west

Whitehouse Creek – southern end facing south

Appendix D

References

Brode, J., and G. Hansen. 1992. Status and future management of the giant garter snake (Thamnophis gigas) within the southern American Basin, Sacramento and Sutter Counties, California. California Department of Fish and Game, Inland Fisheries Division.

California Department of Fish and Wildlife. 2020. California Natural Diversity Database (CNDDB) – Commercial Version. Accessed March 10, 2020.

Fitch, H.S. 1940. A biogeographical study of the *ordinoides* artenkreis of garter snakes (genus *Thamnophis*). Univ. Calif. Publ. Zool. 44:1-150.

Hansen, G.E. and J.M. Brode. 1980. Status of the giant garter snake, *Thamnophis couchi gigas* (Fitch) and its supporting habitat. California Department of Fish and Game. Inland Fisheries Division Endangered Species Division Special Report No. 80-5. 14pp.

Hansen, G.E. and J.M. Brode. 1993. Results of relocating canal habitat of the giant garter snake (*Thamnophis gigas*) during widening of State Route 99/70 in Sacramento and Sutter counties, California. Final report for Caltrans Interagency Agreement 03E325 (FG7550) (FY 87/88-91-92). Unpublished. 36 pp.

Hansen, G.E. 1988. Review of the Status of the giant garter snake (*Thamnophis couchii gigas*) and its supporting habitat during 1986-87. Final report for the California Department of Fish and Game, Contract C-2060. Unpublished. 31 pp.

Hansen, G.E. 1998. Cherokee Canal sediment removal project post-construction giant garter snake (*Thamnophis gigas*) surveys. Final report for California Department of Water Resources. Contract No. B-81535. Unpublished. 9 pp.

Hansen, E.C. 2017. Year 2016 Giant gartersnake (Thamnophis gigas) sruveys for the San Joaquin River Restoration program’s Mendota pool bypass and reach 2B improvements project: Fresno and Madera counties, California. Prepared for AECOM.

USFWS (U.S. Fish and Wildlife Service). 1993. Endangered and threatened wildlife and plants; determination of threatened status for the giant garter snake. Federal Register 58:54053-54066).

USFWS (U.S. Fish and Wildlife Service). 1999. Draft recovery plan for the giant garter snake (*Thamnophis gigas*). U.S. Fish and Wildlife Service, Portland, Oregon. Ix+ 192 pp.

USFWS (U.S. Fish and Wildlife Service). 2006. Giant Garter Snake *(Thamnophis gigas)* 5-Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office, Sacramento, California

Appendix D

Wylie, G.D., M.L. Casazza, and J. K. Daugherty. 1997. 1996 progress report for the giant garter snake study. Dixon Research Station, California Science Center, USGS Biological Resources Division, Dixon, CA.

Wylie, G. D., Casazza, M.L., Martin, L. January 2004. Monitoring Giant Garter Snakes in the Natomas Basin: 2003 Results. Dixon Field Station; USGS-BRD, Dixon, CA.

Appendix C:
Aquatic Resources Delineation Report

AQUATIC RESOURCE DELINEATION REPORT

Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project
October 2019

Prepared By:
Dokken Engineering
110 Blue Ravine Road, Suite 200
Folsom, California 95630
(916) 858-0642

DOKKEN ENGINEERING

Prepared For:
Sacramento District
US Army Corps of Engineers, Sacramento District
1325 J Street, Room 1350
Sacramento, California 95814-2922

Executive Summary

The City of Elk Grove (City) is proposing to construct the Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project (Project), within Jurisdictional Waters of the United States within the Project area. located in Elk Grove, Sacramento County, California (Figure 1. Project Vicinity and Figure 2. Project Location). The proposed Project will involve construction of a 2.2-mile long multi-functional corridor along the banks adjacent to segments of Laguna and Whitehouse Creeks, located between East Stockton Boulevard and Camden Park.

Biological field surveys were conducted by Dokken Engineering biologists, Andrew Dellas and Scott Salembier on April 4, 2018, and jurisdictional delineations were conducted by Dokken Engineering biologists, Andrew Dellas and Courtney Owens on April 24 – April 26, 2018. The purpose of the surveys was to identify and delineate waters present within the proposed project area, identify habitat types, and assess habitat suitability for rare or special status species that may be impacted by the proposed project. Delineation procedures followed the methods outlined in the most recent United States Army Corps of Engineers (2008) *A Field Guide to Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United* States, and wetland delineations followed the methods of the United States Army Corps of Engineers *Wetland Delineation Manual* (1987) and the most recent United States Army Corps of Engineers *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (2008).

Table of Contents

Acronyms and Abbreviations

amsl	Above mean sea level
BSA	Biological Study Area
CEQA	California Environmental Quality Act
IS/MND	Initial Study/Mitigated Negative Declaration
NEPA	National Environmental Policy Act
NRCS	National Resource Conservation Service
NWI	National Wetland Inventory
OHWM	Ordinary High Water Mark
USACE	United States Army Corps of Engineers

Chapter 1. Introduction

The contact information for the applicant, property owner, and agent are as follows:

Applicant
City of Elk Grove
ATTN: Kristin Parsons
8401 Laguna Palms Way
Elk Grove, CA 95758

Property Owners
City of Elk Grove
8401 Laguna Palms Way
Elk Grove, CA 95758

East Lawn Inc.
ATTN: Alan Fisher
9189 E. Stockton Blvd.
Elk Grove, CA 95624

Creekside Christian Church
ATTN: Kim Shepherd
8939 E. Stockton Blvd.
Elk Grove, CA 95624

Shortline Lake
ATTN: Jeffrey Goldman
Shortline Lane
Elk Grove, CA 95624

Benito Murillo Living Trust
ATTN: Benito Murillo
APN: 116-0030-076
E. Stockton Blvd.
Elk Grove, CA 95624

Agent
Dokken Engineering
ATTN: Andrew Dellas
110 Blue Ravine Rd, St 200
Folsom, CA 95630
Ph: (916) 858-0642
adellas@dokkenengineering.com

The proposed Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project (Project) is located in Elk Grove, Sacramento County, California (**Appendix A – Project Vicinity and Project Location**). The Survey Area for this delineation report includes all areas within the Biological Study Area (BSA). Prior to field surveys, the BSA was defined as the proposed project impact area and a 250-foot buffer from the City's existing floodway easement to accommodate the design and facilitate construction.

The purpose of this report is to identify and describe aquatic resources in the Survey Area. Potential project effects to sensitive plants, fish or wildlife species, and historical resources were evaluated during the development of a California Environmental Quality Act (CEQA) Initial Study with a Mitigated Negative Declaration (IS/MND) for the proposed Project. The IS/MND is anticipated for approval August 2018.

This report facilitates efforts to:

1. Avoid or minimize impacts to aquatic resources during the project design process.
2. Document aquatic resource boundary determinations for review by regulatory authorities.
3. Provide background information regarding aquatic resources in the Survey Area.

1.1 Project Description

The Project consists of constructing a multi-functional corridor between East Stockton Boulevard and Camden Park in the City of Elk Grove. The maintenance access road alignment begins at East Stockton Boulevard, approximately 750 feet south of the intersection of East Stockton Boulevard and Cantwell Drive. The alignment follows a west-east orientation before crossing Whitehouse Creek. After this crossing, the alignment turns south and parallels the eastern bank of Whitehouse Creek before turning southeast and crossing Laguna Creek at two locations before terminating at the existing Laguna Creek Trail system near Beckington Drive and White Peacock Way. During the final design and right-of-way phases of the Project, the alignment may traverse further south along Whitehouse Creek before turning southeast to cross Laguna Creek.

The Project includes construction of a 10-foot-wide paved surface (no pavement striping) with 2 feet of unpaved shoulders. Pre-fabricated steel or concrete bridges would provide necessary access across Laguna and Whitehouse Creeks. The Project would be constructed in phases, dependent on funding, with the last phase of the Project converting the paved maintenance access road into a Class 1 multi-functional trail corridor connection between East Stockton Boulevard and Camden Park, with pavement striping and trail amenities, such as benches and trash containers. This last phase of the Project would complete a gap within the trail system in accordance with the City's Bicycle, Pedestrian, and Trails Master Plan.

Additional Project features would include construction of floodway excavation areas to offset the floodplain encroachments from the maintenance road/multi-functional trail and fencing to prevent pedestrian incursion beyond the multi-functional corridor. Right-of-way acquisitions and temporary construction easements are needed where the multi-functional corridor passes through privately-owned parcels and will be obtained during final design of the Project.

Right-of-way acquisitions and temporary construction easements are needed where the multi-functional corridor passes through privately-owned parcels.

This Project is funded through the City's Storm Drainage Master Plan and is subject to compliance with the California Environmental Quality Act (CEQA). The lead agency for CEQA compliance is the City. The Project is also subject to compliance with the National Environmental Policy Act (NEPA) due to anticipated federal permitting through the U.S. Army Corps of Engineers federal nexus during the Clean Water Act Section 404 permitting process for project impacts to waters of the U.S.

1.1.1. Purpose

The proposed project would construct approximately 2.2 miles of multi-function corridor to provide maintenance access within the City's floodway easement along Laguna Creek. Additionally, as part of Phase 2 of the Project, the maintenance access road would develop and link a disconnected section of the Laguna Creek Trail system.

1.1.2. Need

The Project is needed to provide maintenance access to the reaches of Laguna Creek and Whitehouse Creek from East Stockton Boulevard to the Camden Park.

Chapter 2. Location

The Study Area encompasses approximately 125 acres and includes approximately 4,000 linear feet of Laguna Creek from East Stockton Boulevard to Camden Lake. The Study Area is approximately 4,300 feet (0.8 miles) from east to west and approximately 1,700 feet (0.33 miles) from north to south. The western terminus of the Project is at Creekside Christian Church at 8939 E. Stockton Boulevard, Elk Grove, California 95624, and the eastern terminus is located south of the intersection of Beckington Drive and White Peacock Way.

Directions to the western terminus of the proposed project from the United States Army Corps of Engineers (USACE) Sacramento District office are as follows:

- Head east on J St. towards 14th St.
- Turn left onto 28th St.
- Turn right onto H St.
- Turn right onto the I-80 W ramp to CA-99 S/US-50.
- Merge onto I-80 W and continue onto CA-99 S/S Sacramento Fwy.
- Use the right two lanes to take exit 288 for Sheldon Road.
- Turn right onto Sheldon Road.
- Turn right onto E. Stockton Blvd to 8939 E. Stockton Blvd.

Directions to the eastern terminus of the proposed project are as follows:

- Head east on J St. towards 14th St.
- Turn left onto 28th St.
- Turn right onto H St.
- Turn right onto the I-80 W ramp to CA-99 S/US-50.
- Merge onto I-80 W and continue onto CA-99 S/S Sacramento Fwy.
- Use the right two lanes to take exit 288 for Sheldon Road.
- Turn right onto Sheldon Road.
- Turn right onto Harding Hall Drive.
- Turn left on Beckington Drive and follow to intersection of White Peacock Way.

Chapter 3. Methods

Biological field surveys were conducted by Dokken Engineering biologists, Andrew Dellas and Scott Salembier on April 4, 2018, and jurisdictional delineations were conducted by Dokken Engineering biologists, Andrew Dellas and Courtney Owens on April 24 – April 26, 2018. The purpose of the surveys was to identify and delineate waters present within the proposed project area, identify habitat types, and assess habitat suitability for rare or special status species that may be impacted by the proposed project. Delineation procedures followed the methods outlined in the most recent United States Army Corps of Engineers (2008) *A Field Guide to Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United* States, and wetland delineations followed the methods of the United States Army Corps of Engineers *Wetland Delineation* Manual (1987) and the most recent United States Army Corps of Engineers *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (2008). Observed OHWM and wetland features were mapped in the field with a Trimble GeoXT Geoexplorer 6000 Series handheld GPS unit.

Chapter 4. Existing Conditions

4.1 Landscape Setting

The Survey Area is approximately 125 acres in size and is located within the Sacramento Valley Subregion of the Great Central Valley Region floristic province with elevations ranging between 45-50 feet above mean sea level (amsl) (Jepson Flora Project 2018).

The topography of the Survey Area is relatively flat, as it is situated in the Sacramento Valley of the Great Valley geomorphic range with underlying shale, sandstone, and gravel deposits (Jennings et al. 1977; Norris and Webb 1976) (**Appendix A. Topographic Map**). Hydrology in the Survey Area includes Laguna and Whitehouse Creeks and associated emergent marsh, seasonal wetlands, seasonal wetland swales, vernal pools, and vernal swales. The dominant land use within the Survey Area is institutional with the Creekside Christian Church north of Laguna Creek and the East Lawn Cemetery south of Laguna Creek.

The Natural Resource Conservation Service (NRCS) Custom Soil Resource Report for the Project (Department of Agriculture 2018) identifies soils within the Study Area as:

- Bruella sandy loam, 0 to 2 percent slopes (13.5%)
- Dierssen sandy clay loam, drain, 0 to 2 percent slopes (6.0%)
- Madera loam, 0 to 2 percent slopes (8.5%)
- San Joaquin silt loam, leveled, 0 to 1 percent slopes (9.6%)
- San Joaquin silt loam, 0 to 3 percent slopes (62.4%)

4.2 Aquatic Resources

4.2.1 Overview

Aquatic resources within the Study Area include Laguna Creek, Whitehouse Creek, and associated wetland features: vernal pools, vernal swales, seasonal wetlands, seasonal wetland swales, and emergent marsh (**Appendix A. Extent of Jurisdictional Waters**).

<u>Historic Setting</u>

On 1947 aerial imagery Laguna and Whitehouse Creeks are visible as natural stream channels flowing east to west with minor human effects from agricultural production along the banks of both creeks (NETR 2018).

On 1957 aerial imagery Laguna Creek is still visible as a natural stream channel; whereas, Whitehouse Creek has begun to be channelized and redirected. Additionally, major freeways, interchanges and bridges are visible over both creek channels.

Between 1966 and 1993 residential developments begin to be built throughout the Project vicinity, including the construction of Shortline Lake and the homes surrounding it. Residential and commercial development continues and between 1998 and 2002, a residential development north of Laguna Creek and the Creekside Christian Church was constructed and significantly changed the orientation of Whitehouse Creek, cutting off its natural channel and redirecting the creek south to confluence with Laguna Creek approximately 0.25 miles east of E. Stockton Boulevard.

From 2002 to present day, no new significant changes to the topography of the land or the channels of Laguna Creek or Whitehouse Creek has occurred.

Description of Aquatic Resources

Perennial Creeks

The Study Area includes the perennial Laguna Creek and Whitehouse Creek. Whitehouse Creek and Laguna Creek are part of the Morrison Creek watershed, and Laguna Creek subwatershed, within the Lower Sacramento River Hydrologic Unit (HUC 6) (Caltrans 2018). Whitehouse Creek flows from east to west and has been redirected from its natural orientation around residential developments north of the Study Area. Whitehouse Creek then joins with Laguna Creek within the Study Area approximately 0.25 miles east of East Stockton Boulevard. Approximately 1,500 linear feet of Whitehouse Creek is within the Study Area. Laguna Creek flows east to west travelling approximately 4,000 linear feet through the Study Area from Camden Lake to East Stockton Boulevard. Whitehouse Creek and Laguna Creek ultimately make connection with the Sacramento River approximately 6 miles west of the Study Area. Approximately 10.74 acres of the Study Area was delineated as perennial creek.

Vernal Pools

Vernal pools are characterized by seasonal inundation and their potential to support vernal pool species. A wide variety of herbaceous species are associated with this community type, including Italian ryegrass, Mediterranean barley, coyote thistle (*Eryngium* sp.), smooth goldfields (*Lasthenia glaberrima*), Fremont's goldfields (*Lasthenia fremontii*), vernal pool buttercup (*Ranunculus bonariensis var. trisepalus*), and woolly marbles (*Psilocarphus spp.).* Additional species that may be present include Sacramento mint (*Pogogyne zizyphoroides*), hyssop loosestrife (*Lythrum hyssopifolium*), toad rush (*Juncus bufonius*), popcorn flower (*Plagiobothrys spp.),* alkali weed, mayweed, and curly dock. Vernal pool communities have the potential to support special-status vernal pool invertebrates, such as fairy shrimp (*Branchinecta* spp.) and tadpole shrimp (*Lepidurus* spp.). The Study Area includes vernal pool communities. A total of 12 vernal pools were delineated within the Study Area consisting of approximately 0.60 acres.

Vernal Swale

Vernal pools are sometimes connected to each other by small drainages known as vernal swales, forming complexes of vernal pools. Vernal swales differ from vernal pools in that they function distinctly as shallow, seasonal conveyance channels. The typically connect vernal pools or convey shallow seasonal flows down gradual inclines often collecting water in a vernal pool or seasonal wetland. Vernal swales and pools typically share plant species and successive "rim bloom" plant assemblages and soil types (California Open Lands 2018). A total of 2 vernal swale areas were delineated within the Study Area consisting of approximately 0.24 acres.

Seasonal Wetland

Seasonal wetlands are defined as ephemeral wetlands that pond during the rainy season and dry during the summer dry season. This habitat type is dominated by hydrophytic vegetation types of grasses, herbs, and forbs. The seasonal wetland habitat type occurs in the adjacent lands of the Stone Lakes NWR in the northwest quadrant of the Study Area. Seasonal wetlands can provide habitat for vernal pool associates, and habitat for a wide variety of wildlife including song birds, waterfowl, reptiles, and other wildlife species. A total of 20 seasonal wetland features were delineated within the Study Area consisting of approximately 9.47 acres.

Seasonal Wetland Swale

The seasonal swale land cover type is defined as low meandering channels that tend to be saturated long enough to support vegetative associations. Swale features often represent the headwaters of streams, connect seasonal wetlands, and/or drain small watersheds into defined creeks. Swales can be supported by minor groundwater seepage. Swales contain rabbitsfoot grass (*Polypogon monspeliensis*), fireweed (*Epilobium pygmaeum*), fiddle dock (*Rumex pulcher*), and prickleseed buttercup (*Ranunculus muricatus*). Seasonal swales that occur within and between vernal pool complexes are classified as vernal swales. A total of 6 seasonal wetland swale features were delineated within the Study Area consisting of approximately 1.23 acres.

Emergent Marsh

Freshwater emergent marsh wetlands are characterized by erect, rooted herbaceous hydrophytes such as common cattail. Emergent wetlands are flooded frequently enough so that the roots of the vegetation are in an anaerobic environment. On the upper margins of this habitat, saturated or periodically flooded soils support several moist soil plant species including Baltic rush (*Juncus balticus*), tall flatsedge (*Cyperus eragrostis*), smartweed (*Persicaria spp.),* and, on more alkali sites, saltgrass (*Distichlis spicata*). Lower, wetter portions of freshwater emergent wetlands in the Project area are composed of cattails, bulrush, and floating primrose. In the Project area, several freshwater emergent wetlands exist west of Franklin Boulevard. A total of 3 emergent marsh features were delineated within the Study Area consisting of approximately 1.77 acres.

Table 1: Aquatic Resources within the Survey Area

Aquatic Resource Name	Aquatic Resources Classification			Aquatic Resource Size (acre) Required for all resources	Aquatic Resource Size (linear feet) Required for only stream channels
	Cowardin*	Latitude	Longitude		
PC-1	R2UBF	38.43086944	-121.39694440	9.28	4,000
PC-2	R2UBF	38.43155560	-121.39277780	1.45	1,500
EM-1	PEM1E	38.43051111	-121.38916667	0.31	--
EM-2	PEM1E	38.38063333	-121.47916667	1.05	--
EM-3	PEM1E	38.37844444	-121.47555556	0.38	--
EM-4	PEM1E	38.42896389	-121.38527778	0.03	
SW-1	PEM1C	38.42976389	-121.38666667	0.59	--
SW-2	PEM1C	38.43059444	-121.38722222	0.03	--
SW-3	PEM1C	38.42997778	-121.38722222	0.03	--
SW-4	PEM1C	38.43038333	-121.38777778	0.25	--
SW-5	PEM1C	38.42928333	-121.38861111	0.56	--
SW-6	PEM1C	38.43006389	-121.39305556	0.01	--
SW-7	PEM1C	38.42902778	-121.39277778	0.41	--
SW-8	PEM1C	38.42972778	-121.39555556	0.69	--

Aquatic Resource Name	Aquatic Resources Classification			Aquatic Resource Size (acre) Required for all resources	Aquatic Resource Size (linear feet) Required for only stream channels
	Cowardin*	Latitude	Longitude		
SW-9	PEM1C	38.43158889	-121.39027778	0.09	--
SW-10	PEM1C	38.43161944	-121.39111111	0.03	--
SW-11	PEM1C	38.43090700	-121.39445000	0.02	--
SW-12	PEM1C	38.43068300	-121.39457800	0.03	--
SW-13	PEM1C	38.43088200	-121.39577500	0.01	--
SW-14	PEM1C	38.43352200	-121.39708700	2.17	--
SW-15	PEM1C	38.43360300	-121.39789800	0.94	--
SW-16	PEM1C	38.43229900	-121.39042700	0.13	--
SW-17	PEM1C	38.43309500	-121.39290000	0.21	--
SW-18	PEM1C	38.42980600	-121.38887600	0.11	--
SW-19	PEM1C	38.43424700	-121.39876700	0.29	--
SW-20	PEM1C	38.43018000	-121.396342	2.87	
SWS-1	PEM1A	38.42923400	-121.38945800	0.27	--
SWS-2	PEM1A	38.42880000	-121.38599300	0.18	--
SWS-3	PEM1A	38.43168900	-121.39059800	0.52	--
SWS-4	PEM1A	38.43122500	-121.39391900	0.21	--
SWS-5	PEM1A	38.43350800	-121.39821000	0.04	--
SWS-6	PEM1A	38.43052200	-121.39474700	0.01	--
VP-1	PEM1A	38.42847700	-121.38904600	0.27	--
VP-2	PEM1A	38.42858900	-121.38819500	0.03	--
VP-3	PEM1A	38.42834300	-121.38787300	0.01	--
VP-4	PEM1A	38.42987800	-121.39184700	0.01	--

Aquatic Resource Name	Aquatic Resources Classification			Aquatic Resource Size (acre) Required for all resources	Aquatic Resource Size (linear feet) Required for only stream channels
	Cowardin*	Latitude	Longitude		
VP-5	PEM1A	38.42987100	-121.39171500	0.01	--
VP-6	PEM1A	38.42975500	-121.39137700	0.02	--
VP-7	PEM1A	38.43295600	-121.39395600	0.04	--
VP-8	PEM1A	38.43216800	-121.39350700	0.01	--
VP-9	PEM1A	38.43193500	-121.39351000	0.04	--
VP-10	PEM1A	38.43126600	-121.39204900	0.13	--
VP-11	PEM1A	38.43224200	-121.39140700	0.01	--
VP-12	PEM1A	38.43201500	-121.39178100	0.01	--
VS-1	PEM1A	38.43158500	-121.39151000	0.08	--
VS-2	PEM1A	38.42983700	-121.39158300	0.16	--
TOTAL				**23.52**	**5,500**

*NWI 2018, Cowardin et.al. 1979

Chapter 5. References

California Open Lands. 2018. *Conserved Habitats*. Available at: <http://www.californiaopenlands.org/conserved-habitats.html> (accessed 06/05/2018).

Caltrans. 2018. Caltrans Water Quality Planning Tool. Available at: <http://svctenvims.dot.ca.gov/wqpt/wqpt.aspx> (accessed 05/23/2018).

Cowardin et.al. 1979. Classification of Wetlands and Deepwater Habitats of the United States.

Department of Agriculture. 2018. National Resources Conservation Services (NRCS). Custom Soil Resource Report for WDR018-LCWC. Generated May 21, 2018. Available at: <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm> (accessed 05/21/2018).

NETR. 2018. Nationwide Environmental Title Research, LLC. Historic Aerials and Topographic Maps. Available at: < http://www.historicaerials.com/> (accessed 06/05/2018).

Jennings, C.W., R.G. Strand, and T.H. Rogers. 1977. Geologic Map of California: California Division of Mines and Geology. Scale 1:750000.

Jepson Flora Project. 2018. *Jepson eFlora*. Available at: <http://ucjeps.berkeley.edu/IJM.html> (accessed 06/06/18).

Norris, R.M. and R.W. Webb. 1976. Geology of California. New York: John Wiley & Sons.

NWI. 2017. National Wetlands Inventory. United States Fish and Wildlife Service. Available at: <https://www.fws.gov/wetlands/data/mapper.HTML> (accessed 06/05/2018).

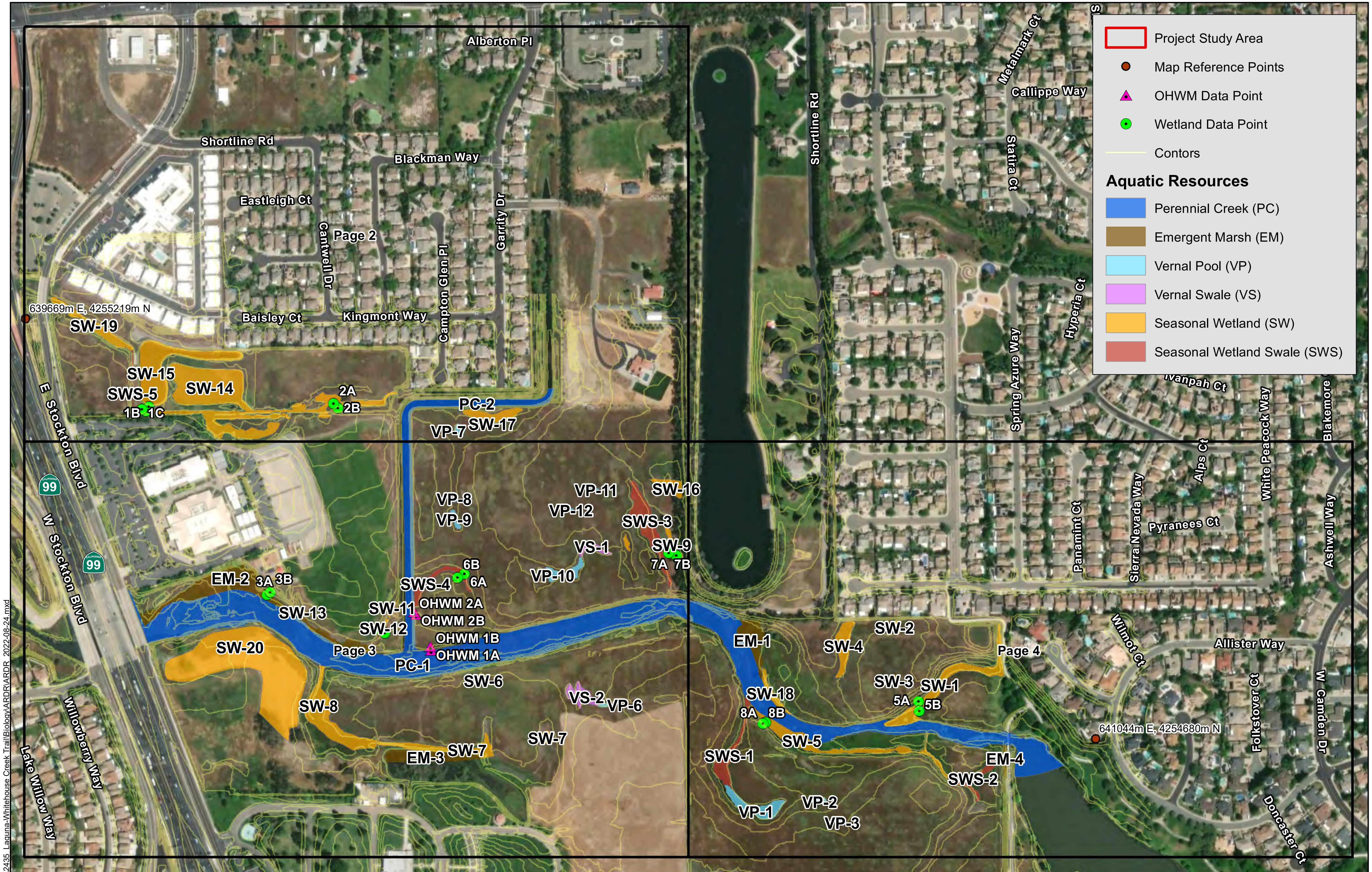
United States Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetland Delineation Manual. Environmental Laboratory, U.S. Army Corps of Engineers Waterways Experiment Station.

United States Army Corps of Engineers (USACE). 2008a. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). Available at: <http://www.usace.army.mil/missions/civilworks/regulatoryprogramandpermits/reg_supp.aspx > (accessed 04/24/2018).

United States Army Corps of Engineers (USACE). 2008b. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. Available at: <http://www.spk.usace.army.mil/Portals/12/documents/regulatory/pdf/Ordinary_High_Watermark_Manual_Aug_2008.pdf> (accessed 02/15/2018).

United States Army Corps of Engineers (USACE). 2016. Arid West 2016 Regional Wetland Plant List. Available at: <http://wetland-plants.usace.army.mil/nwpl_static/index.html> (accessed 04/24/2018).

Appendix A – Aquatic Resource Delineation Map



Wetland ID	Existing Acreage
PC-1	9.28
PC-2	1.45
EM-1	0.31
EM-2	1.05
EM-3	0.38
EM-4	0.03
SW-1	0.59
SW-2	0.03
SW-3	0.03
SW-4	0.25
SW-5	0.56
SW-6	0.01
SW-7	0.41
SW-8	0.69
SW-9	0.09
SW-10	0.03
SW-11	0.02
SW-12	0.03
SW-13	0.01
SW-14	2.17
SW-15	0.94
SW-16	0.13
SW-17	0.21
SW-18	0.11
SW-19	0.29
SW-20	2.87
SWS-1	0.27
SWS-2	0.18
SWS-3	0.52
SWS-4	0.21
SWS-5	0.04
SWS-6	0.01
VP-1	0.27
VP-2	0.03
VP-3	0.01
VP-4	0.01
VP-5	0.01
VP-6	0.02
VP-7	0.04
VP-8	0.01
VP-9	0.04
VP-10	0.13
VP-11	0.01
VP-12	0.01
VS-1	0.08
VS-2	0.16
Total	**24.03**

V:\2435_Laguna-Whitehouse Creek Trail\Biology\ARDR\ARDR_2022-08-24.mxd

Coordinate System: NAD 1983 UTM Zone 10
Projection: Tranverse Mercator
Datum: North American 1983

1 inch = 400 feet

0 200 400 600 800 1,000 Feet

Prepared by:

Dokken Engineering
110 Blue Ravine Road, Suite 200
Folsom, CA 95630 Phone (916) 858-0642
Fax (916) 858-0643 *www.dokkenengineering.com*

Prepared for:

City of Elk Grove
8401 Laguna Palms Way
Elk Grove, CA 95758

Delineator: Andrew Dellas
Deliniation Date: April 24, 25, 26, 2018
Aerial Photography Source: ESRI Maps Online, 2016
This delination ofwater of the United States is subject to verification by the U.S. Army Corps of Engineers (Corps). Dokken Engineering advies all parties that the delineation is preliminary until the Corps provides a written verification.

Aquatic Resource Delineation Map
Page 1 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project
WDR018 - City of Elk Grove, California

Wetland ID	Existing Acreage
PC-1	9.28
PC-2	1.45
EM-1	0.31
EM-2	1.05
EM-3	0.38
EM-4	0.03
SW-1	0.59
SW-2	0.03
SW-3	0.03
SW-4	0.25
SW-5	0.56
SW-6	0.01
SW-7	0.41
SW-8	0.69
SW-9	0.09
SW-10	0.03
SW-11	0.02
SW-12	0.03
SW-13	0.01
SW-14	2.17
SW-15	0.94
SW-16	0.13
SW-17	0.21
SW-18	0.11
SW-19	0.29
SW-20	2.87
SWS-1	0.27
SWS-2	0.18
SWS-3	0.52
SWS-4	0.21
SWS-5	0.04
SWS-6	0.01
VP-1	0.27
VP-2	0.03
VP-3	0.01
VP-4	0.01
VP-5	0.01
VP-6	0.02
VP-7	0.04
VP-8	0.01
VP-9	0.04
VP-10	0.13
VP-11	0.01
VP-12	0.01
VS-1	0.08
VS-2	0.16
Total	**24.03**

V:\2435_Laguna-Whitehouse Creek Trail\Biology\ARDR\ARDR_2022-08-24.mxd

Coordinate System: NAD 1983 UTM Zone 10
Projection: Tranverse Mercator
Datum: North American 1983

1 inch = 200 feet

0 100 200 300 400 500 Feet

Prepared by:

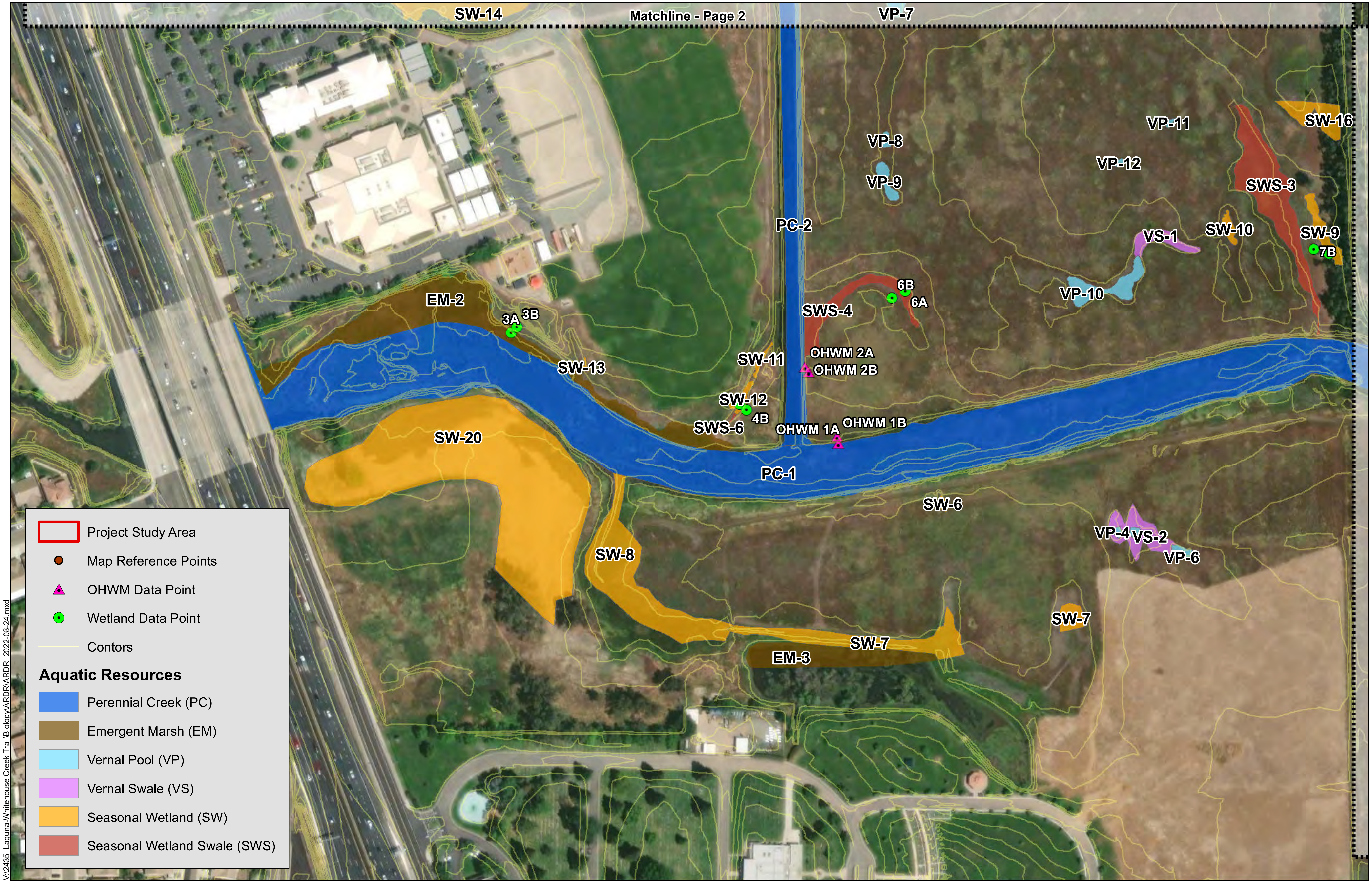
Dokken Engineering
110 Blue Ravine Road, Suite 200
Folsom, CA 95630 Phone (916) 858-0642
Fax (916) 858-0643 *www.dokkenengineering.com*

Prepared for:

City of Elk Grove
8401 Laguna Palms Way
Elk Grove, CA 95758

Delineator: Andrew Dellas
Deliniation Date: April 24, 25, 26, 2018
Aerial Photography Source: ESRI Maps Online, 2016
This delination ofwater of the United States is subject to verification by the U.S. Army Corps of Engineers (Corps). Dokken Engineering advies all parties that the delineation is preliminary until the Corps provides a written verification.

Aquatic Resource Delineation Map
Page 2 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project
WDR018 - City of Elk Grove, California



Wetland ID	Existing Acreage
PC-1	9.28
PC-2	1.45
EM-1	0.31
EM-2	1.05
EM-3	0.38
EM-4	0.03
SW-1	0.59
SW-2	0.03
SW-3	0.03
SW-4	0.25
SW-5	0.56
SW-6	0.01
SW-7	0.41
SW-8	0.69
SW-9	0.09
SW-10	0.03
SW-11	0.02
SW-12	0.03
SW-13	0.01
SW-14	2.17
SW-15	0.94
SW-16	0.13
SW-17	0.21
SW-18	0.11
SW-19	0.29
SW-20	2.87
SWS-1	0.27
SWS-2	0.18
SWS-3	0.52
SWS-4	0.21
SWS-5	0.04
SWS-6	0.01
VP-1	0.27
VP-2	0.03
VP-3	0.01
VP-4	0.01
VP-5	0.01
VP-6	0.02
VP-7	0.04
VP-8	0.01
VP-9	0.04
VP-10	0.13
VP-11	0.01
VP-12	0.01
VS-1	0.08
VS-2	0.16
Total	**24.03**

Coordinate System: NAD 1983 UTM Zone 10
Projection: Tranverse Mercator
Datum: North American 1983

1 inch = 200 feet

0 100 200 300 400 500 Feet

Prepared by:

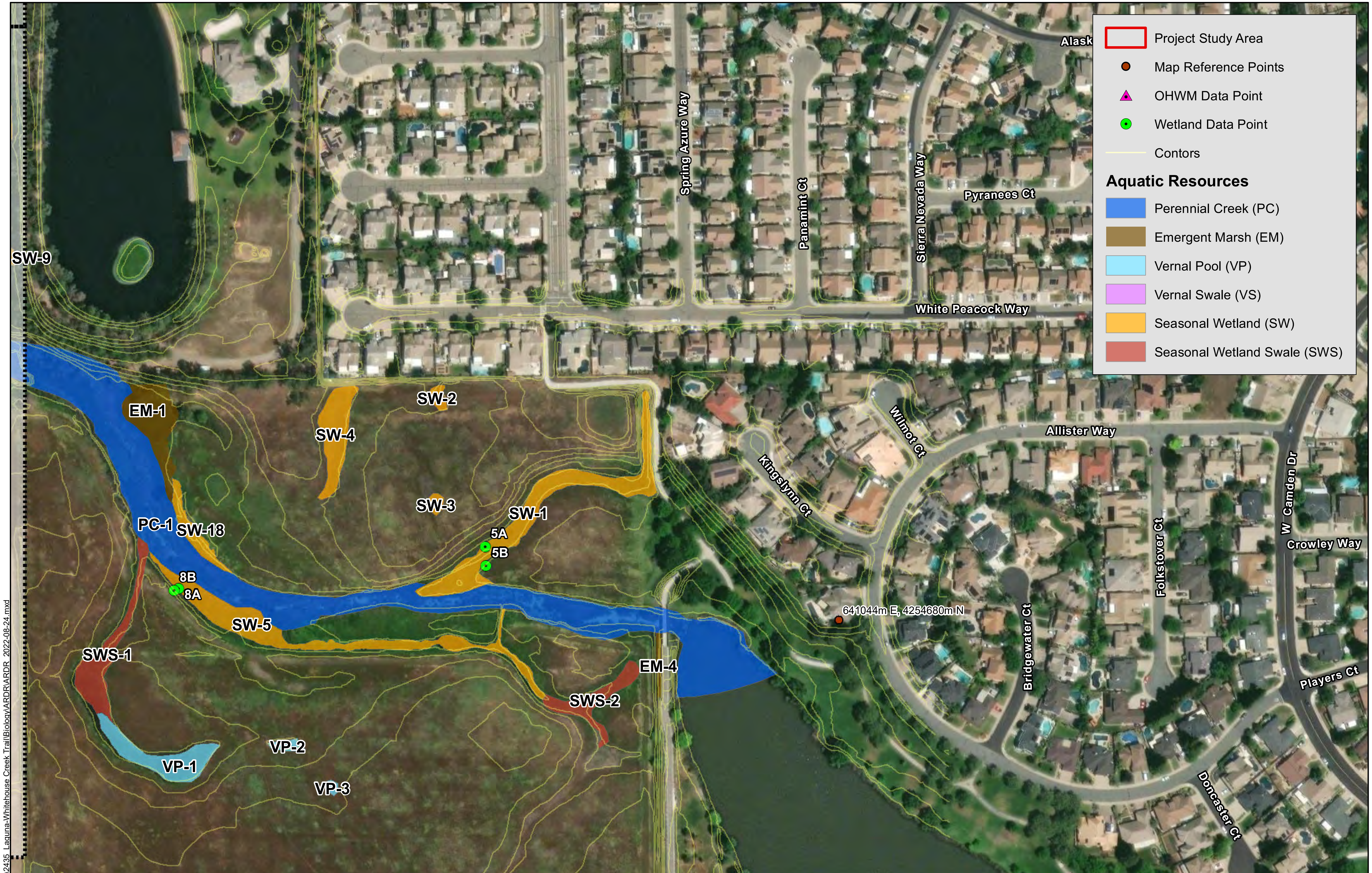
Dokken Engineering
110 Blue Ravine Road, Suite 200
Folsom, CA 95630 Phone (916) 858-0642
Fax (916) 858-0643 *www.dokkenengineering.com*

Prepared for:

City of Elk Grove
8401 Laguna Palms Way
Elk Grove, CA 95758

Delineator: Andrew Dellas
Deliniation Date: April 24, 25, 26, 2018
Aerial Photography Source: ESRI Maps Online, 2016
This delination ofwater of the United States is subject to verification by the U.S. Army Corps of Engineers (Corps). Dokken Engineering advies all parties that the delineation is preliminary until the Corps provides a written verification.

Aquatic Resource Delineation Map
Page 3 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project
WDR018 - City of Elk Grove, California



Wetland ID	Existing Acreage
PC-1	9.28
PC-2	1.45
EM-1	0.31
EM-2	1.05
EM-3	0.38
EM-4	0.03
SW-1	0.59
SW-2	0.03
SW-3	0.03
SW-4	0.25
SW-5	0.56
SW-6	0.01
SW-7	0.41
SW-8	0.69
SW-9	0.09
SW-10	0.03
SW-11	0.02
SW-12	0.03
SW-13	0.01
SW-14	2.17
SW-15	0.94
SW-16	0.13
SW-17	0.21
SW-18	0.11
SW-19	0.29
SW-20	2.87
SWS-1	0.27
SWS-2	0.18
SWS-3	0.52
SWS-4	0.21
SWS-5	0.04
SWS-6	0.01
VP-1	0.27
VP-2	0.03
VP-3	0.01
VP-4	0.01
VP-5	0.01
VP-6	0.02
VP-7	0.04
VP-8	0.01
VP-9	0.04
VP-10	0.13
VP-11	0.01
VP-12	0.01
VS-1	0.08
VS-2	0.16
Total	**24.03**

Coordinate System: NAD 1983 UTM Zone 10
Projection: Tranverse Mercator
Datum: North American 1983

1 inch = 200 feet

0 100 200 300 400 500 Feet

Prepared by:

Dokken Engineering
110 Blue Ravine Road, Suite 200
Folsom, CA 95630 Phone (916) 858-0642
Fax (916) 858-0643 www.dokkenengineering.com

Prepared for:

City of Elk Grove
8401 Laguna Palms Way
Elk Grove, CA 95758

Delineator: Andrew Dellas
Deliniation Date: April 24, 25, 26, 2018
Aerial Photography Source: ESRI Maps Online, 2016
This delination ofwater of the United States is subject to verification by the U.S. Army Corps of Engineers (Corps). Dokken Engineering advies all parties that the delineation is preliminary until the Corps provides a written verification.

Aquatic Resource Delineation Map

Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project
WDR018 - City of Elk Grove, California

Appendix B – Supporting Resources

Vicinity Map

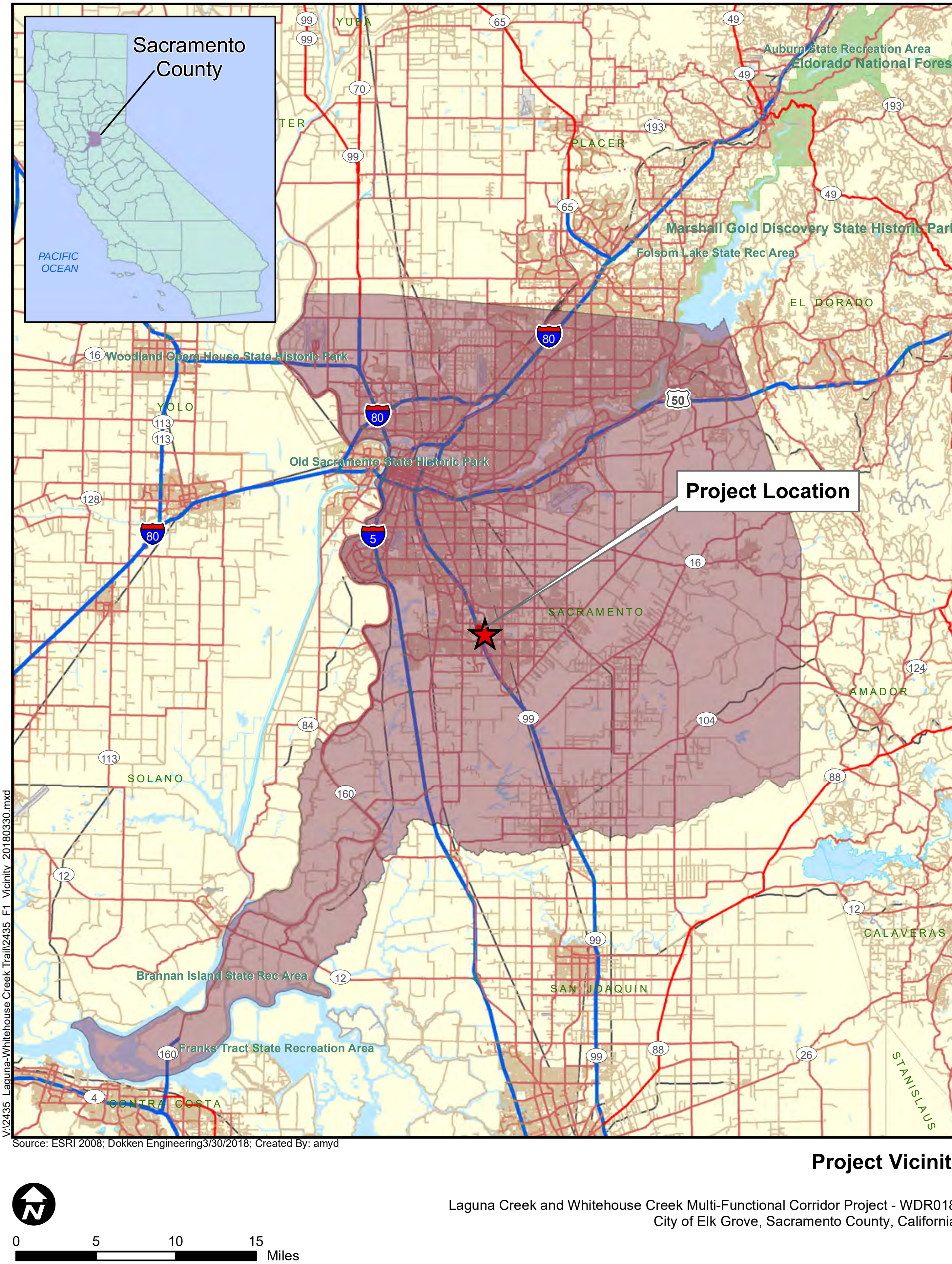
Location Map

Project Features Map

Topographic Map

Vegetation Communities within the BSA

NRCS Web Soil Survey Report

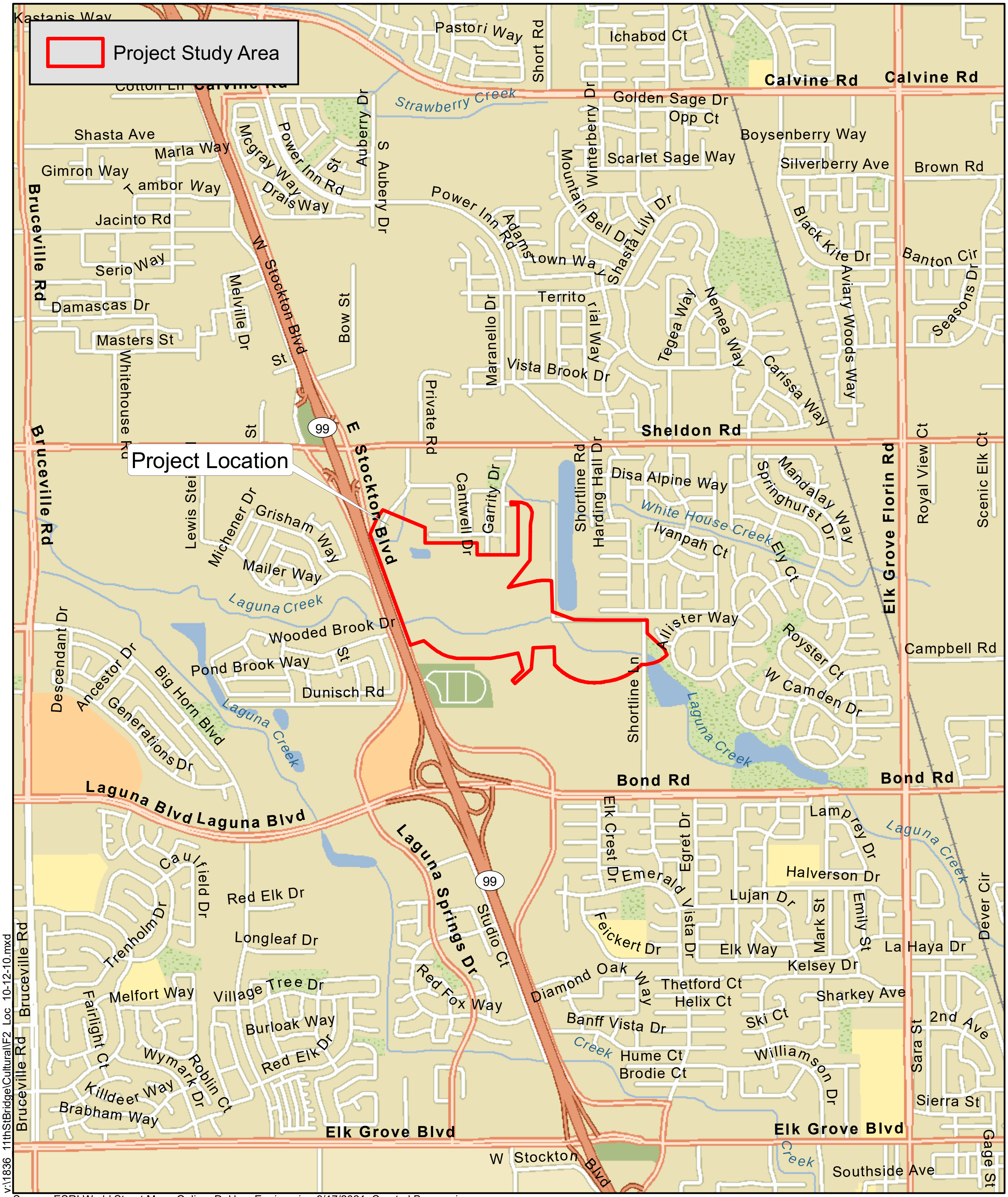


V:\2435_Laguna-Whitehouse Creek Trail\2435_F1_Vicinity_20180330.mxd

Source: ESRI 2008; Dokken Engineering3/30/2018; Created By: amyd

Project Vicinity

Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, Sacramento County, California



Source: ESRI World Street Maps Online; Dokken Engineering 9/17/2021; Created By: rramirez

v:\1836_11thStBridge\Cultural\F2_Loc_10-12-10.mxd

0 0.25 0.5 0.75 1 Miles

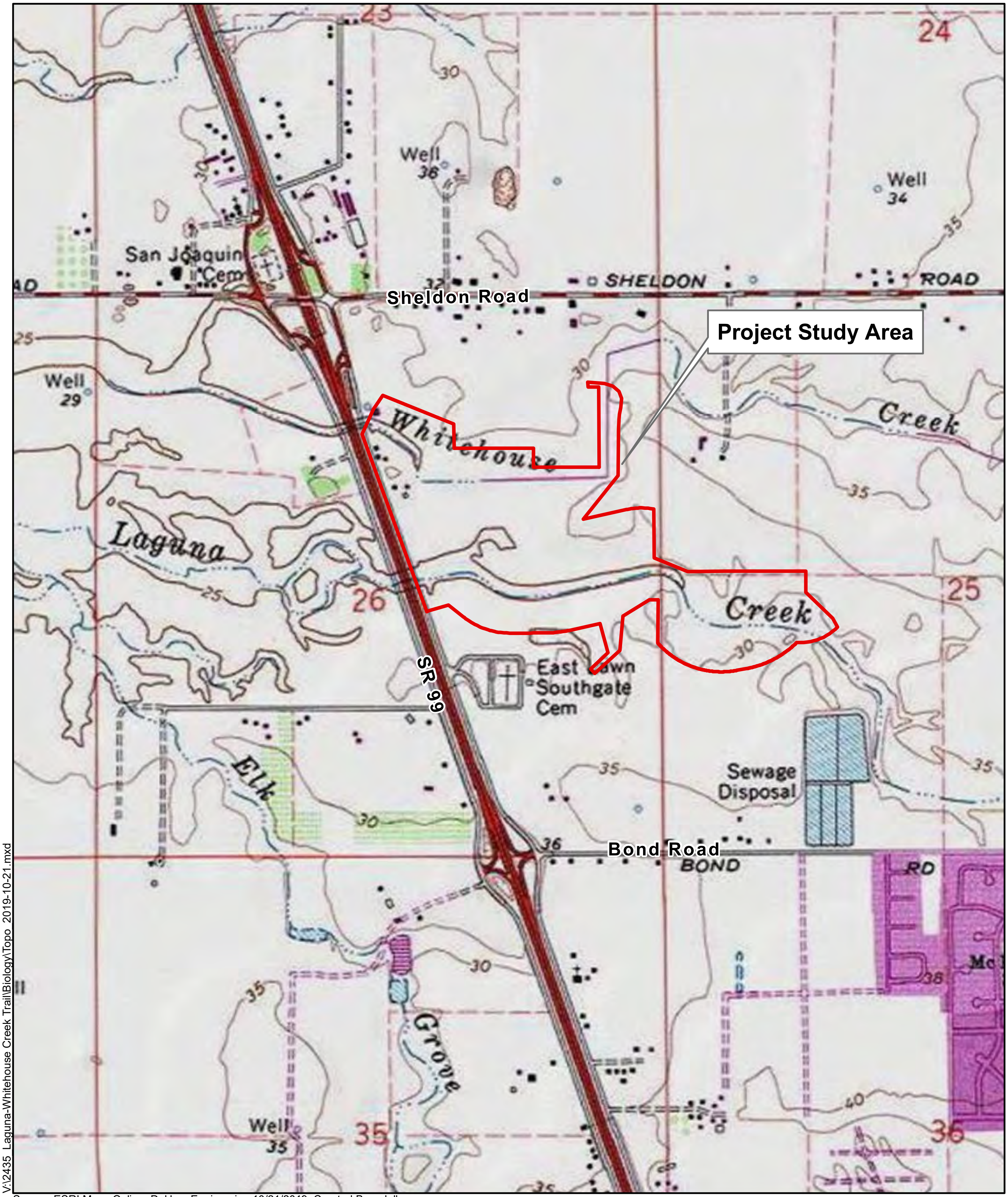
Project Location

Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, Sacramento County, California

Source: ESRI World Street Maps Online; Dokken Engineering 7/10/2023; Created By: amyd

Project Features

Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California



V:\2435_Laguna-Whitehouse Creek Trail\Biology\Topo_2019-10-21.mxd

Source: ESRI Maps Online; Dokken Engineering 10/21/2019; Created By: adellas

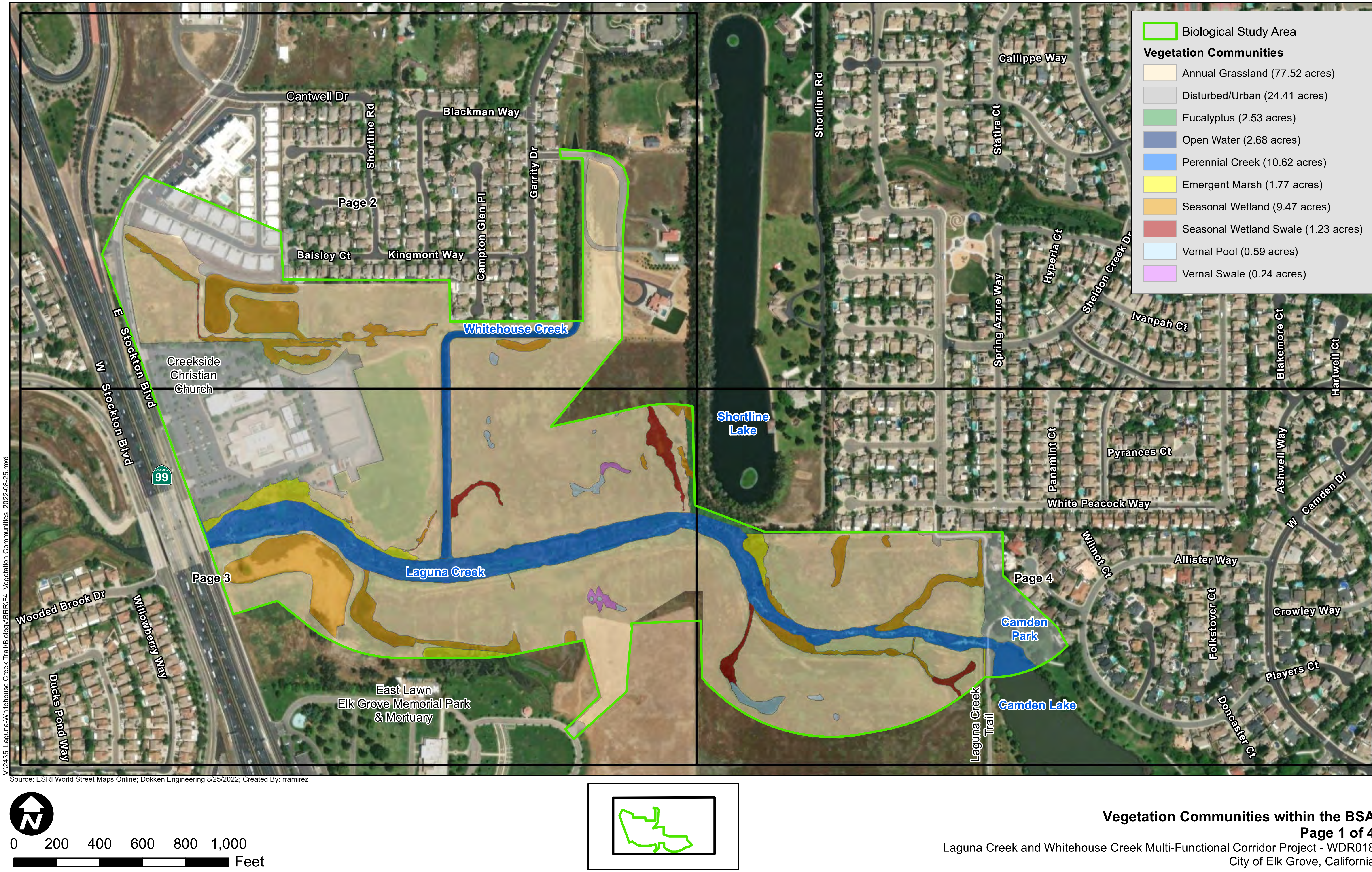
Topographic Map

Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018

City of Elk Grove, Sacramento County, California

N

0 0.1 0.2 0.3 0.4 Miles



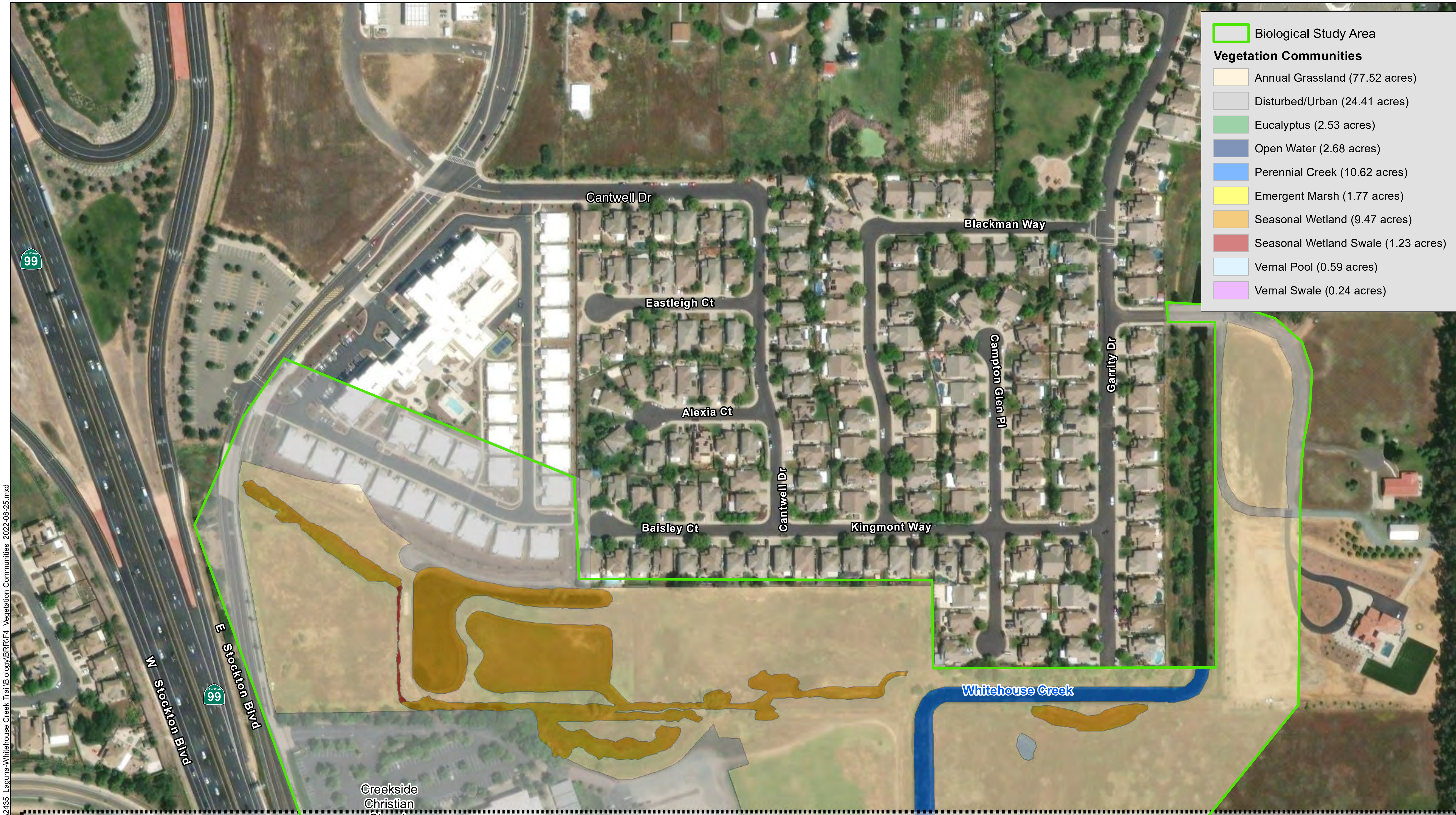
Source: ESRI World Street Maps Online; Dokken Engineering 8/25/2022; Created By: rramirez

Vegetation Communities within the BSA

Page 1 of 4

Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018

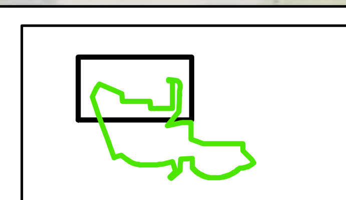
City of Elk Grove, California



V:\2435 Laguna-Whitehouse Creek Trail\Biology\BRR\F4 Vegetation Communities 2022-08-25.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 8/25/2022; Created By: rramirez

0 100 200 300 400 500
Feet



Vegetation Communities within the BSA

Page 2 of 4

Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018

City of Elk Grove, California

V:\2435_Laguna-Whitehouse Creek Trail\Biology\BRR\F4_Vegetation Communities_2022-08-25.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 8/25/2022; Created By: rramirez

N

0 100 200 300 400 500
Feet

Vegetation Communities within the BSA
Page 3 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

Source: ESRI World Street Maps Online; Dokken Engineering 8/25/2022; Created By: rramirez

0 100 200 300 400 500 Feet

Vegetation Communities within the BSA
Page 4 of 4
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project - WDR018
City of Elk Grove, California

United States Department of Agriculture

NRCS

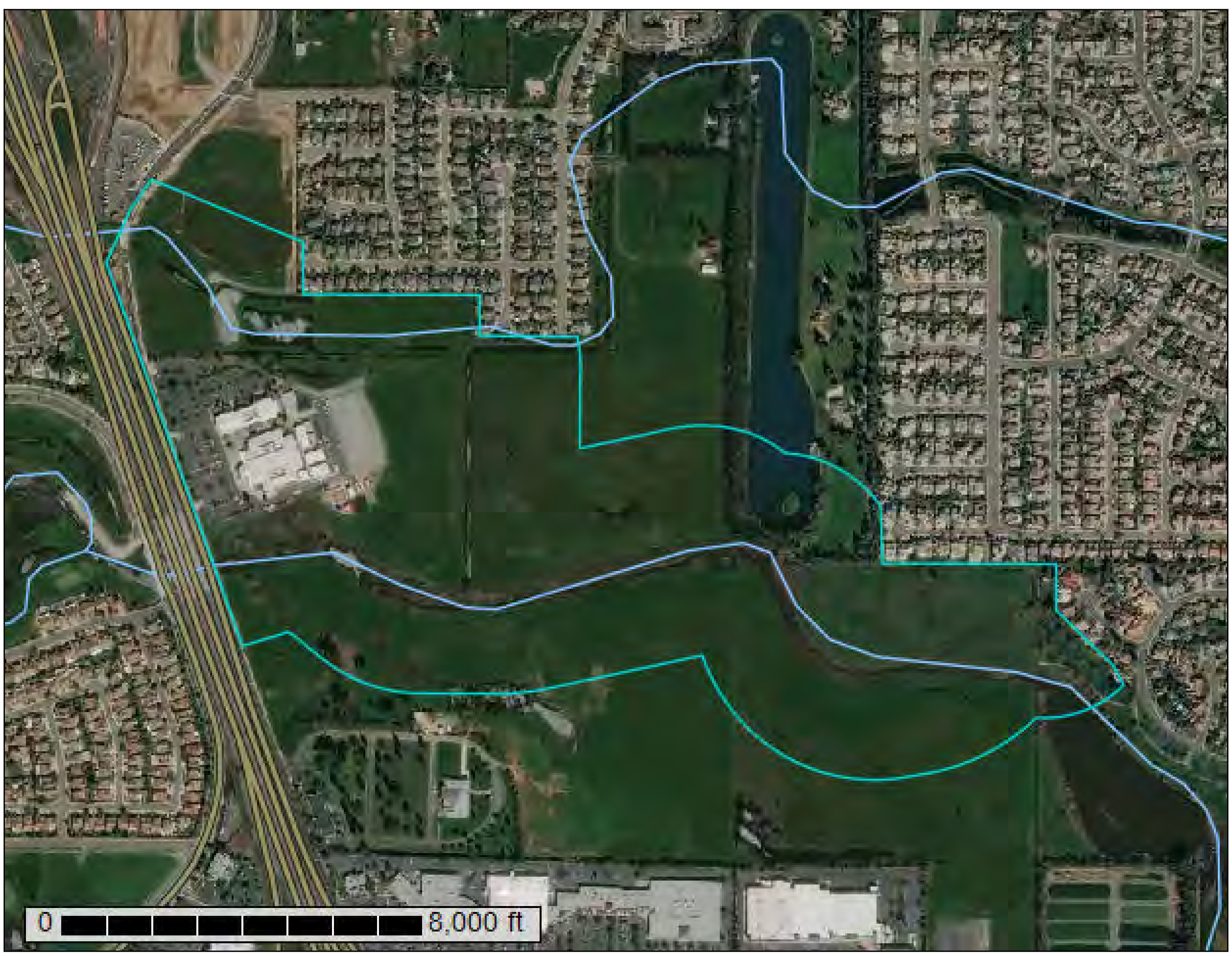
Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Sacramento County, California

WDR018-LCWC



May 21, 2018

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Soil Map

Map Scale: 1:7,500 if printed on A landscape (11" x 8.5") sheet.

Meters: 0 100 200 400 600

Feet: 0 350 700 1400 2100

N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sacramento County, California
Survey Area Data: Version 16, Sep 26, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 12, 2016—Mar 28, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
111	Bruella sandy loam, 0 to 2 percent slopes	16.9	13.5%
134	Dierssen sandy clay loam, drained, 0 to 2 percent slopes	7.6	6.0%
174	Madera loam, 0 to 2 percent slopes	10.6	8.5%
213	San Joaquin silt loam, leveled, 0 to 1 percent slopes	12.0	9.6%
214	San Joaquin silt loam, 0 to 3 percent slopes	78.0	62.4%
Totals for Area of Interest		**125.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Sacramento County, California

111—Bruella sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hhlk
Elevation: 30 to 150 feet
Mean annual precipitation: 15 to 22 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Bruella and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bruella

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 18 inches: sandy loam
H2 - 18 to 42 inches: sandy clay loam
H3 - 42 to 61 inches: sandy clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.8 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Kimball

Percent of map unit: 5 percent
Hydric soil rating: No

San joaquin

Percent of map unit: 5 percent
Hydric soil rating: No

Xerarents

Percent of map unit: 5 percent
Hydric soil rating: No

134—Dierssen sandy clay loam, drained, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hhm9
Elevation: 20 feet
Mean annual precipitation: 17 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Not prime farmland

Map Unit Composition

Dierssen and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dierssen

Setting

Landform: Basin floors
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 14 inches: sandy clay loam
H2 - 14 to 31 inches: clay loam
H3 - 31 to 60 inches: cemented

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 31 to 60 inches to duripan
Natural drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Rare
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Hydric soil rating: Yes

Minor Components

Galt

Percent of map unit: 4 percent
Landform: Basin floors
Hydric soil rating: Yes

Tinnin

Percent of map unit: 3 percent
Hydric soil rating: No

Unnamed, lack clay subsoil

Percent of map unit: 2 percent
Hydric soil rating: No

Unnamed, occasional flooded

Percent of map unit: 2 percent
Hydric soil rating: No

Clear lake

Percent of map unit: 1 percent
Landform: Basin floors
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Hydric soil rating: Yes

Cosumnes

Percent of map unit: 1 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Hydric soil rating: Yes

Egbert

Percent of map unit: 1 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Hydric soil rating: Yes

Scribner

Percent of map unit: 1 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Hydric soil rating: Yes

174—Madera loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hhnl
Elevation: 20 to 250 feet
Mean annual precipitation: 14 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Madera and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Madera

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 15 inches: loam
H2 - 15 to 29 inches: clay
H3 - 29 to 60 inches: indurated

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: About 15 inches to abrupt textural change; 29 to 60 inches to duripan
Natural drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: D

Ecological site: LOAMY CLAYPAN (R017XD047CA)
Hydric soil rating: No

Minor Components

Kimball

Percent of map unit: 5 percent
Hydric soil rating: No

Clear lake

Percent of map unit: 4 percent
Landform: Drainageways
Hydric soil rating: Yes

Galt

Percent of map unit: 4 percent
Landform: Terraces
Hydric soil rating: Yes

Unnamed, rarely flooded

Percent of map unit: 2 percent
Hydric soil rating: No

213—San Joaquin silt loam, leveled, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: hhpv
Elevation: 20 to 500 feet
Mean annual precipitation: 10 to 22 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

San joaquin and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of San Joaquin

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 23 inches: silt loam
H2 - 23 to 28 inches: clay loam
H3 - 28 to 54 inches: indurated

H4 - 54 to 60 inches: stratified sandy loam to loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: About 23 inches to abrupt textural change; 28 to 54 inches to duripan
Natural drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Bruella

Percent of map unit: 3 percent
Hydric soil rating: No

Durixeralfs

Percent of map unit: 3 percent
Hydric soil rating: No

Galt

Percent of map unit: 2 percent
Landform: Depressions
Hydric soil rating: Yes

Hedge

Percent of map unit: 2 percent
Hydric soil rating: No

Kimball

Percent of map unit: 2 percent
Hydric soil rating: No

Xerarents

Percent of map unit: 2 percent
Hydric soil rating: No

Unnamed, rarely flooded

Percent of map unit: 1 percent
Hydric soil rating: No

214—San Joaquin silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: hhpw
Elevation: 20 to 500 feet
Mean annual precipitation: 10 to 22 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

San joaquin and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of San Joaquin

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 23 inches: silt loam
H2 - 23 to 28 inches: clay loam
H3 - 28 to 54 inches: indurated
H4 - 54 to 60 inches: stratified sandy loam to loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: About 23 inches to abrupt textural change; 28 to 54 inches to duripan
Natural drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: C
Ecological site: LOAMY (R017XD045CA)
Hydric soil rating: No

Minor Components

Galt

Percent of map unit: 4 percent
Landform: Depressions
Hydric soil rating: Yes

Bruella

Percent of map unit: 4 percent
Hydric soil rating: No

Hedge

Percent of map unit: 3 percent
Hydric soil rating: No

Kimball

Percent of map unit: 3 percent
Hydric soil rating: No

Unnamed, rarely flooded

Percent of map unit: 1 percent
Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix C – Representative Photographs


Representative Photograph 1. View of seasonal wetland (SW-14) (Waters of the U.S.). View is facing southeast.


Representative Photograph 2. View of seasonal wetland (SW-14) (Waters of the U.S.). View is facing east.

**Representative Photograph 3. View of Seasonal Wetland Swale (SWS-5) (Waters of the U.S.).
View is facing north.**

**Representative Photograph 4. View of Whitehouse Creek (Waters of the U.S.).
View is facing southeast.**


Representative Photograph 5. View of Vernal Pool (VP-7) (Waters of the U.S.). View is facing west.


Representative Photograph 6. View of Emergent Marsh (EM-1) (Waters of the U.S.). View is facing northwest.

Representative Photograph 7. View of Laguna Creek (Waters of the U.S.). View is facing east.

Representative Photograph 8. View of Laguna Creek (Waters of the U.S.). View is facing north toward Shortline Lake.

Representative Photograph 9. View of Seasonal Wetland Swale (SWS-1) in foreground and Vernal Pool (VP-1) in background (both Waters of the U.S.). View is facing south.

Representative Photograph 10. View of Seasonal Wetland (SW-8) (Waters of the U.S.). View is facing southeast.

Appendix D – Plant Species Observed

Scientific Name	Common Name	Native (N) /Nonative (x)
Brassica nigra	black mustard	X (Invasive) m
Dichelostemma capitatum	blue dicks	N
Typha latifolia	broadleaf cattail	N
Cirsium vulgare	bullthistle	X (invasive) m
Bromus carinatus	California brome	N
Schoenoplectus californicus	California bulrush	N
Marah fabacea	California manroot	N
Eschscholzia californica	California poppy	N
Rosa californica	California Wild Rose	N
Pinus canariensis	Canary Island pine	X
Trifolium monanthum	carpet clover	N
Pistacia chinensis	Chinese pistache	X
Ligustrum sinense	Chinese privet	X
Triadica sebifera	Chinese Tallow	X (invasive) m
Sequoia sempervirens	coast redwood	N
Amsinckia intermedia	common fiddleneck	N
Sonchus oleraceus	common Sow-thistle	X
Eleocharis palustris	common Spike-rush	N
Erodium cicutarium	common stork's-bill	X (Invasive) l
Centromadia pungens	common tarweed	N
Baccharis pilularis	coyote brush	N
Eryngium castrense	coyote-thistle	N
Rumex crispus	curled dock	X (Invasive) l
Geranium dissectum	cut-leaved crane's-bill	X (Invasive) l
Plantago lanceolata	english plantain	X (invasive) l
Carex praegracilis	field sedge	N
Pennisetum setaceum	fountain grass	X (invasive) m
Hordeum murinum	foxtail Barley	X (invasive) m
Populus fremontii	Fremont cottonwood	N
Lavandula stoechas	French lavender	X
Salix gooddingii	Goodding's willow	N
Leontodon saxatilis	hairy hawkbit	X
Vicia villosa ssp. villosa	hairy vetch	X
Brodiaea elegans	harvest brodiaea	N
Rubus armeniacus	Himalayan Blackberry	X (invasive) h
Quercus wislizeni	interior live oak	N
Lolium multiflorum	Italian Ryegrass	X (invasive) m
Carduus pycnocephalus	Italian thistle	X (invasive) m
Raphanus sativus	jointed charlock	X (Invasive) l
Briza minor	little quaking-grass	X

Scientific Name	Common Name	Native (N) /Nonative (x)
Platanus Ã— hispanica	London plane tree	X
Lupinus	lupine sp.	N
Hordeum marinum gussoneanum	mediterranean barley	X (invasive) m
Taeniatherum caput-medusae	medusa head	X (invasive) h
washingtonia robusta	Mexican Fan Palm	X (invasive) m
Silybum marianum	milk thistle	X (invasive) l
Asclepias fascicularis	narrow leaf milkweed	N
Salix exigua	narrowleaf willow	N
Toxicodendron diversilobum	Pacific poison oak	N
Mentha pulegium	pennyroyal	X (invasive) m
Castilleja exserta exserta	purple owl's-clover	N
Bromus diandrus	ripgut brome	X (invasive) m
Trifolium hirtum	Rose Clover	X (invasive) l
Xanthium strumarium	rough cocklebur	N
Quercus coccinea	scarlet oak	X
Vulpia microstachys	small six-weeks grass	N
Bromus hordeaceus	soft chess brome	X (invasive) l
Juncus patens	spreading Rush	N
Carex alma	sturdy sedge	N
Foeniculum vulgare	sweet fennel	X (invasive) h
Cyperus eragrostis	tall flatsedge	N
Eucalyptus globulus	Tasmanian blue gum	X (invasive) l
Salsola tragus	tumbleweed	X (invasive) l
Quercus lobata	valley oak	N
Ranunculus bonariensis trisepalus	vernal pool buttercup	
Galium parisiense	wall bedstraw	X
Nasturtium officinale	watercress	N
Cercis occidentalis	Western redbud	N
Erodium brachycarpum	White stemmed filaree	X
Pisum sativum elatius	wild pea	X
Avena fatua	wildoats	X (invasive) m
Centaurea solstitialis	yellow starthistle	X (invasive) h

Appendix E – Delineation Data Sheets

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Laguna Creek/Whitehouse Creek Corridor **Project Number:** WOR010-LEWC City of Elk Grove **Stream:** Whitehouse Creek **Investigator(s):** Andrew Dellas, Courtney Owens	**Date:** 4/24/18 **Town:** Elk Grove **Photo begin file#:**	**Time:** 09:45 **State:** CA **Photo end file#:**
Y ☑ / N ☐ Do normal circumstances exist on the site?	**Location Details:** Whitehouse Creek ≈ 0.25 miles East of E. Stockton Blvd.	
Y ☐ / N ☑ Is the site significantly disturbed?	**Projection:** **Coordinates:**	**Datum:**

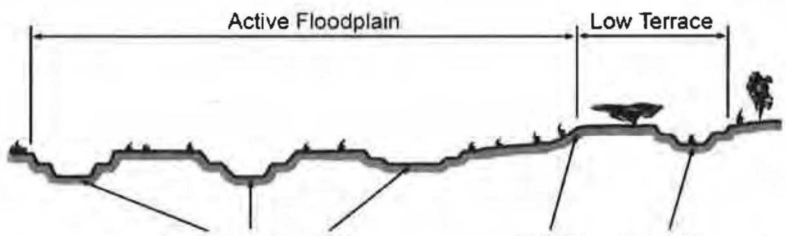
Potential anthropogenic influences on the channel system:
Channelized creek - between 1998 and 2002, natural bottomed, to move around residential development. Potential fill material used for channelization and adjacent Creekside Church.

Brief site description:
Non-natural alignment of Whitehouse Creek.

Checklist of resources (if available):

- ☑ Aerial photography
  Dates: 4/2018
- ☑ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

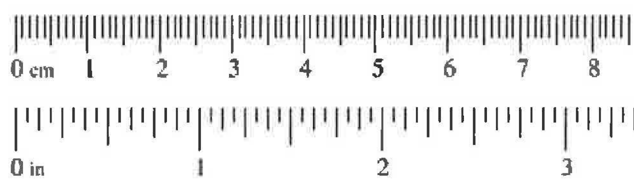


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☑ Mapping on aerial photograph
   - ☑ Digitized on computer
   - ☑ GPS
   - ☐ Other:

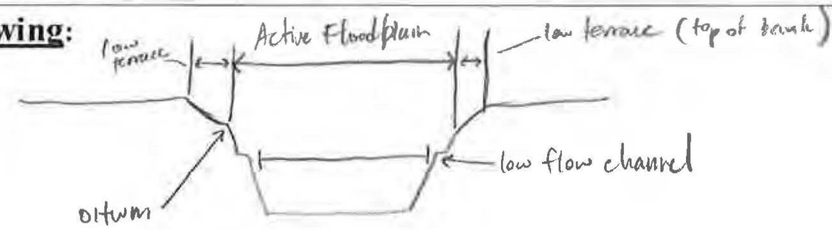
Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
			Boulder	Gravel
	10.08	256		Gravel
			Cobble	Gravel
	2.56	64		Gravel
			Pebble	Gravel
	0.157	4		Gravel
			Granule	Gravel
	0.079	2.00		
			Very coarse sand	Sand
	0.039	1.00		Sand
			Coarse sand	Sand
	0.020	0.50		Sand
			Medium sand	Sand
1/2	0.0098	0.25		Sand
			Fine sand	Sand
1/4	0.005	0.125		Sand
			Very fine sand	Sand
1/8	0.0025	0.0625		
			Coarse silt	Silt
1/16	0.0012	0.031		Silt
			Medium silt	Silt
1/32	0.00061	0.0156		Silt
			Fine silt	Silt
1/64	0.00031	0.0078		Silt
			Very fine silt	Silt
1/128	0.00015	0.0039		
			Clay	Mud



Project ID: **Cross section ID:** **Date:** **Time:**

Cross section drawing:



OHWM

GPS point: OHWM 2A

Indicators:

- [ ] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [x] Other: Soil cracks
- [ ] Other:

Comments:

Soil cracks indicate extent of water along bank, vegetation cover change to ≈0% at OHWM then returning to grasses & forbs above break.

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: Unable to take point in flowing channel.

Characteristics of the floodplain unit:

Average sediment texture: Silty clay loam

Total veg cover: 1-2 % Tree: 0 % Shrub: — % Herb: 1-2 %

Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other:
- [ ] Other:
- [ ] Other:

Comments:

Active flows within low-flow channel, low flow bank + bench visible with change in vegetation cover.

Project ID: **Cross section ID:** **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: OHWM 2A

Characteristics of the floodplain unit:

Average sediment texture: silty clay loam

Total veg cover: 0-1 % Tree: — % Shrub: — % Herb: 0-1 %

Community successional stage:

- ☑ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☑ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☑ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: ______
- ☐ Other: ______
- ☐ Other: ______

Comments:

Mudcracks visible at break of vegetation cover and minor bench, moving up toward low terrace.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: OHWM 2B

Characteristics of the floodplain unit:

Average sediment texture: silty clay loam

Total veg cover: 90 % Tree: — % Shrub: — % Herb: 90 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☑ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☑ Other: vegetation cover change
- ☐ Other: ______
- ☐ Other: ______

Comments:

Change in vegetation after break in bank at mudcracks. Vegetation change to ≈ 90% grasses + forbs.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Laguna Creek/Whitehouse Creek Corridor **Project Number:** WDR018 - LCWC City of Elk Grove **Stream:** Laguna Creek **Investigator(s):** Andrew Dellas, Courtney Owens	**Date:** 4/24/18 **Town:** Elk Grove **Photo begin file#:**	**Time:** 09:30 **State:** CA **Photo end file#:**
Y ☒ / N ☐ Do normal circumstances exist on the site? Y ☐ / N ☒ Is the site significantly disturbed?	**Location Details:** Laguna Creek approximately 0.25 East of E. Stockton Blvd. **Projection:** **Datum:** **Coordinates:**	

Potential anthropogenic influences on the channel system:

Fill used adjacent to Creekside Church.

Brief site description:

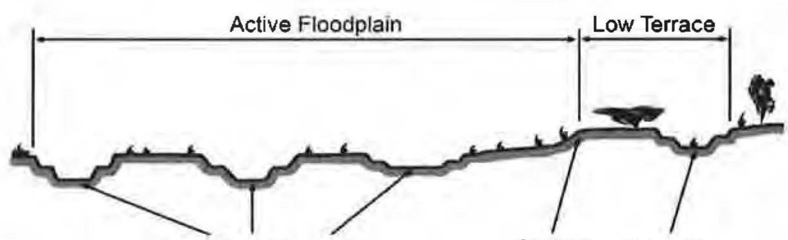
Natural alignment of Laguna Creek.

Checklist of resources (if available):

- ☑ Aerial photography
  Dates: 4/2018
- ☑ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☐ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

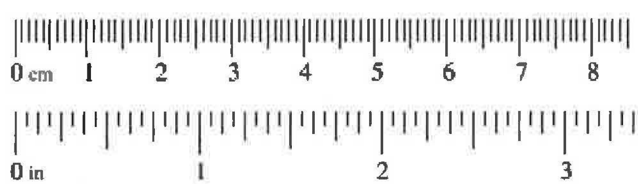


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☑ Mapping on aerial photograph
   - ☑ Digitized on computer
   - ☑ GPS
   - ☐ Other:

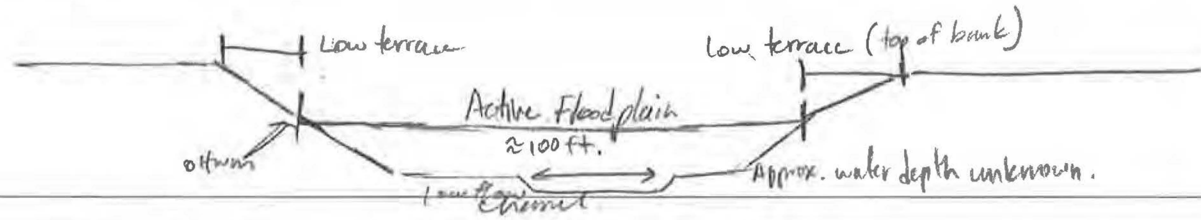
Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
			Boulder	Gravel
	10.08	256		
			Cobble	
	2.56	64		
			Pebble	
	0.157	4		
			Granule	
	0.079	2.00		
			Very coarse sand	Sand
	0.039	1.00		
			Coarse sand	
	0.020	0.50		
			Medium sand	
1/2	0.0098	0.25		
			Fine sand	
1/4	0.005	0.125		
			Very fine sand	
1/8	0.0025	0.0625		
			Coarse silt	Silt
1/16	0.0012	0.031		
			Medium silt	
1/32	0.00061	0.0156		
			Fine silt	
1/64	0.00031	0.0078		
			Very fine silt	
1/128	0.00015	0.0039		
			Clay	Mud



Project ID: LCWC **Cross section ID:** Laguna Creek **Date:** 4/26/18 **Time:** 09:30

Cross section drawing:



OHWM

GPS point: OHWM 1A

Indicators:

- [ ] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [ ] Break in bank slope
- [ ] Other: ______
- [ ] Other: ______

Comments:
Single-thread channel with adjacent floodplains. Hydroriparian OHWM indicators with change in minor slope from marsh species (juncus sp/Typha sp) to Annual grass/herbs. Heavy drift deposits at OHWM.

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: Unable to take point within flowing channel

Characteristics of the floodplain unit:
Average sediment texture: Silt Loam
Total veg cover: 10 % Tree: ___% Shrub: ___% Herb: 10 %
Community successional stage:

- [x] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: ______
- [ ] Other: ______
- [ ] Other: ______

Comments:
Active water flows up to low terrace transition areas. Saturated soils with juncus/typha. Depth unknown.

Project ID: **Cross section ID:** **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace

GPS point: OHWM 1A

Characteristics of the floodplain unit:

Average sediment texture: silt/loam

Total veg cover: 90 % Tree: ___ % Shrub: ___ % Herb: 90 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☑ Mid (herbaceous, ~~shrubs, saplings)~~
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☑ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: ___
- ☐ Other: ___
- ☐ Other: ___

Comments:

Transition area eleocharis, grasses, juncus, rumex, etc. 0-1% slope.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace

GPS point: OHWM 1B

Characteristics of the floodplain unit:

Average sediment texture: silt loam

Total veg cover: 100 % Tree: ___ % Shrub: ___ % Herb: 100 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☑ Mid (herbaceous, s~~hrubs, saplings~~)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☑ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: ___
- ☐ Other: ___
- ☐ Other: ___

Comments:

Drift deposits mark start of terrace.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Laguna Creek City/County: Elk Grove, Sacramento Sampling Date: 4/24/18

Applicant/Owner: City of Elk Grove State: CA Sampling Point: 1A

Investigator(s): Andrew Dellas, Courtney Owens Section, Township, Range: S26 T7N R5E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 1-2

Subregion (LRR): C Lat: 38°25'59.67"N Long: 121°23'52.83"W Datum: GPS

Soil Map Unit Name: Dierssen sandy clay loam, drained, 0-2% slopes NWI classification: PEMC1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ✓ No ___		Is the Sampled Area within a Wetland? Yes ✓ No ___
Hydric Soil Present? Yes ✓ No ___		
Wetland Hydrology Present? Yes ✓ No ___		

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30)			
1. Quercus lobata			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5)			
1. Rumex crispus	3		FAC
2. Eleocharis palustris	10	✓	OBL
3. Geranium dissectum	1		UPL
4. Lolium perenne	1		FAC
5.			
6.			
7.			
8.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 85 % Cover of Biotic Crust ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1/1 = 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	___	x 1 = ___
FACW species	___	x 2 = ___
FAC species	___	x 3 = ___
FACU species	___	x 4 = ___
UPL species	___	x 5 = ___
Column Totals:	___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:
Longitudinal depression along North of Creekside Church parcel.

SOIL

Sampling Point: 1a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					—	Leaf litter/Duff
4-8	10YR 2/2	100					SIL	
8-16	2.5Y 4/1	85	7.5YR 4/6	15			SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ✓ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ✓ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ✓ No ___ Depth (inches): 10"

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Laguna Creek City/County: Elk Grove, Sacramento Sampling Date: 4/29/18
Applicant/Owner: City of Elk Grove State: CA Sampling Point: 1b
Investigator(s): A. Pellas / C. Owens Section, Township, Range: S26 T7N R5E
Landform (hillslope, terrace, etc.): Edge of depression Local relief (concave, convex, none): convex Slope (%): 1-2
Subregion (LRR): C Lat: 38°25'59.83"N Long: -121°23'52.72'W Datum: GPS
Soil Map Unit Name: Dierssen sandy clay loam, drained, 0-2 % slopes NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.	0		
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ____)			
1.	0		
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ____)			
1. Lolium perenne	98	✓	FAC
2. Hordeum marinum	<1		FAC
3. Geranium dissectum	<1		UPL
4. Rumex crispus	<1		FAC
5.			
6.			
7.			
8.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1/1=100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	____	x 1 = ____
FACW species	____	x 2 = ____
FAC species	____	x 3 = ____
FACU species	____	x 4 = ____
UPL species	____	x 5 = ____
Column Totals:	____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: 1b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2	100					SICL	
2-6	10YR 3/2	80	7.5YR 4/6	20	C	M	SICL	
6-16	10YR 4/2	60	7.5YR 4/4	35	C	M	SIC	
			GY 2.5/N	5	C	M		Maganese

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- _✓_ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes _✓_ No ___

Remarks:
Low terrace between detention pond & depression.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- _?_ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No _✓_ Depth (inches): ______

Water Table Present? Yes ___ No _✓_ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No _✓_ Depth (inches): ______

Wetland Hydrology Present? Yes _✓_ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Laguna Creek City/County: Elk Grove, Sacramento Sampling Date: 4/29/18

Applicant/Owner: City of Elk Grove State: CA Sampling Point: 1C

Investigator(s): A. Dellas / C. Owens Section, Township, Range: S26 T7N R5E

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 1-2

Subregion (LRR): C Lat: 38°25'59.76" N Long: -121°23'53.08"W Datum: GPS

Soil Map Unit Name: Dierssen sandy clay loam, drained, 0-2 % slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No ✓
Hydric Soil Present?	Yes ✓	No ___
Wetland Hydrology Present?	Yes ___	No ✓

Is the Sampled Area within a Wetland? Yes ___ No ✓

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0		
2.			
3.			
4.			
= Total Cover	0		
Sapling/Shrub Stratum (Plot size: ___)			
1.	0		
2.			
3.			
4.			
5.			
= Total Cover	0		
Herb Stratum (Plot size: 5)			
1. Bromus hordaceus	40	✓	FAC
2. Bromus diandrus	40	✓	UPL
3. Lolium perenne	8		FAC
4. Erodium cicutarium	3		UPL
5.			
6.			
7.			
8.			
= Total Cover	90		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 =
FACW species	0	x 2 =
FAC species	2	x 3 = 6
FACU species	0	x 4 =
UPL species	2	x 5 = 10
Column Totals:	4 (A)	20 (B)

Prevalence Index = B/A = 20/4=5

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks:

SOIL

Sampling Point: 1C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	85	10YR 3/4	10			SIL	
			6Y 2.5/N	5				manganese

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ✓ No ______

Remarks:

hardpan @5"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No ✓ Depth (inches): ______

Water Table Present? Yes ______ No ✓ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ✓ Depth (inches): ______

Wetland Hydrology Present? Yes ______ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Laguna Creek City/County: Elk Grove, Sacto Sampling Date: 04/24/18

Applicant/Owner: City of Elk Grove State: CA Sampling Point: 22

Investigator(s): D. Dellos / C. Owens Section, Township, Range: S26 T7N R5E

Landform (hillslope, terrace, etc.): low depression Local relief (concave, convex, none): concave Slope (%): 0-1

Subregion (LRR): C Lat: 38°25'59.84" N Long: -121°23'42.92" W Datum: GPS

Soil Map Unit Name: Dierssen sandy clay loam, drained, 0-2% slopes NWI classification: PEMC 1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** **Yes** ✓ **No** ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Hordeum marinum	>1		FAC
2. Lolium perenne	2		FAC
3. Rumex crispus	>1		FAC
4. Ranunculus bonariensis			OBL
5. var. trisepalus	>1	✓	
6. Eleocharis macrostachya	57	✓	OBL
7.			
8.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 40 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ✓ **No** ____

Remarks:

SOIL

Sampling Point: 2A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2	100					SIL	
2-9	10YR 3/1	85	5YR 3/4	15	C	M	SICL	
9-16	5YR 4/6	85	10YR 4/1	10	D	PL	SC	
			GY 2.5/N	5	C	M		manganese

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [ ] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (**LRR C**)
- [ ] 1 cm Muck (A9) (**LRR D**)
- [x] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Mucky Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- [ ] 1 cm Muck (A9) (**LRR C**)
- [ ] 2 cm Muck (A10) (**LRR B**)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ✓ No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1) (**Nonriverine**)
- [ ] Sediment Deposits (B2) (**Nonriverine**)
- [ ] Drift Deposits (B3) (**Nonriverine**)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [x] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [ ] Water Marks (B1) (**Riverine**)
- [ ] Sediment Deposits (B2) (**Riverine**)
- [ ] Drift Deposits (B3) (**Riverine**)
- [x] Drainage Patterns (B10)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): ______

Water Table Present? Yes ____ No ✓ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ✓ No ____ Depth (inches): 110

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Laguna Creek Corridor Project City/County: Elk Grove Sampling Date: 4/24/18

Applicant/Owner: City of Elk Grove State: CA Sampling Point: 2B

Investigator(s): A. Dellas & C. Owens Section, Township, Range: S26 T7N R5E

Landform (hillslope, terrace, etc.): low terrace Local relief (concave, convex, none): none Slope (%): 0-1

Subregion (LRR): C Lat: 38°25'59.65" N Long: -121°23'42.71" W Datum: GPS

Soil Map Unit Name: Dierssen sandy clay loam, drained, 0-2 % slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?		✓
Hydric Soil Present?		✓
Wetland Hydrology Present?		✓

Is the Sampled Area within a Wetland? Yes ___ No ✓

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5 ft.)			
1. Bromus hordeaceus	75	✓	FACU
2. Lolium perenne	24		FAC
3. Erodium cicutarium	>1		UPL
4. Elymus caput-medusae	>1		UPL
5.			
6.			
7.			
8.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks:

SOIL

Sampling Point: 2B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
1-3	10YR 3/3	100	—	—	—	--	SIL	
3-10	10YR 3/3	100	7.5YR 4/4	20	C	m	L	
			6Y 2.5/N	20	C	m		
10-16	7.5YR 3/4	80	7.5YR 4/4	20	C	m	SICL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______________

Depth (inches): ______________

Hydric Soil Present? **Yes** ______ **No** ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): ________

Water Table Present? Yes ____ No ✓ Depth (inches): ________

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): ________

Wetland Hydrology Present? **Yes** ______ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Laguna Creek City/County: Elk Grove Sampling Date: 04/25/18

Applicant/Owner: City of Elk Grove State: CA Sampling Point: 32

Investigator(s): A. Dellas + C. Owens Section, Township, Range: S26 T7N R5E

Landform (hillslope, terrace, etc.): embankment Local relief (concave, convex, none): convex Slope (%): 0-3

Subregion (LRR): C Lat: 38°25'51.92"N Long: -121°23'46.62"W Datum: GPS

Soil Map Unit Name: Madera loam, 0 to 2 percent slopes NWI classification: PEMC 1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ✓ No ____	Is the Sampled Area within a Wetland?	Yes ✓ No ____
Hydric Soil Present? Yes ✓ No ____		
Wetland Hydrology Present? Yes ✓ No ____		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5)			
1. Juncus effusus	15	✓	FACW
2. Pogogyne ziziphoroides	10		OBL
3. Rumex crispus	5		FAC
4. Epilobium brachycarpum	10		UPL
5.			
6.			
7.			
8.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	____	x 1 = ____
FACW species	____	x 2 = ____
FAC species	____	x 3 = ____
FACU species	____	x 4 = ____
UPL species	____	x 5 = ____
Column Totals:	____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: 3A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100	—				SICL	
4-7	10YR 2/2	95	7.5YR 3/4	5	C	M	SICL	
7-16	2.5Y 3/1	75	7.5YR 3/4	25	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5) (**LRR C**)
- __ 1 cm Muck (A9) (**LRR D**)
- ✓ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) (**LRR C**)
- __ 2 cm Muck (A10) (**LRR B**)
- __ Reduced Vertic (F18)
- __ Red Parent Material (TF2)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ________

Depth (inches): ________

Hydric Soil Present? **Yes** ✓ **No** ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- __ Surface Water (A1)
- __ High Water Table (A2)
- __ Saturation (A3)
- __ Water Marks (B1) (**Nonriverine**)
- __ Sediment Deposits (B2) (**Nonriverine**)
- __ Drift Deposits (B3) (**Nonriverine**)
- __ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Water-Stained Leaves (B9)
- __ Salt Crust (B11)
- __ Biotic Crust (B12)
- __ Aquatic Invertebrates (B13)
- __ Hydrogen Sulfide Odor (C1)
- __ Oxidized Rhizospheres along Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Thin Muck Surface (C7)
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✓ Water Marks (B1) (**Riverine**)
- __ Sediment Deposits (B2) (**Riverine**)
- ✓ Drift Deposits (B3) (**Riverine**)
- ✓ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Crayfish Burrows (C8)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Shallow Aquitard (D3)
- __ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): ______

Water Table Present? Yes ____ No ✓ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): ______

Wetland Hydrology Present? **Yes** ✓ **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Laguna Creek City/County: Elk Grove Sampling Date: 04/25/18

Applicant/Owner: City of Elk Grove State: CA Sampling Point: 3b

Investigator(s): A Dellac + C. Owens Section, Township, Range: S26 T7N R5E

Landform (hillslope, terrace, etc.): embankment Local relief (concave, convex, none): convex Slope (%): 0-3

Subregion (LRR): C Lat: 38°25'52.04"N Long: -121°23'46.47"W Datum: GPS

Soil Map Unit Name: Madera loam, 0 to 2% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓
Hydric Soil Present?	Yes ____	No ✓
Wetland Hydrology Present?	Yes ____	No ✓

Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: —)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5)			
1. Bromus hordeacus	15		FAC
2. Bromus spp	60	✓	UPL
3. Cardus pychnocephalus	10		UPL
4. Rumex crispus	7		FAC
5. Erodium cicutarium	10		UPL
6. Silybum marianum	7		UPL
7. Juncus mexicanus	5		FACW
8. Epilobium brachycarpum	2		UPL
	100	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: 3B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	5YR 3/4	100					SCL	Appears to be fill material

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5) (**LRR C**)
- __ 1 cm Muck (A9) (**LRR D**)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) (**LRR C**)
- __ 2 cm Muck (A10) (**LRR B**)
- __ Reduced Vertic (F18)
- __ Red Parent Material (TF2)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes ____ No ✓

Remarks:

Disturbed, fill material, terrace above marsh, adjacent to church playground.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- __ Surface Water (A1)
- __ High Water Table (A2)
- __ Saturation (A3)
- __ Water Marks (B1) (**Nonriverine**)
- __ Sediment Deposits (B2) (**Nonriverine**)
- __ Drift Deposits (B3) (**Nonriverine**)
- __ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Water-Stained Leaves (B9)
- __ Salt Crust (B11)
- __ Biotic Crust (B12)
- __ Aquatic Invertebrates (B13)
- __ Hydrogen Sulfide Odor (C1)
- __ Oxidized Rhizospheres along Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Thin Muck Surface (C7)
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- __ Water Marks (B1) (**Riverine**)
- __ Sediment Deposits (B2) (**Riverine**)
- __ Drift Deposits (B3) (**Riverine**)
- __ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Crayfish Burrows (C8)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Shallow Aquitard (D3)
- __ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): ____

Water Table Present? Yes ____ No ✓ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Laguna Creek City/County: Elk Grove Sampling Date: 04/25/18
Applicant/Owner: City of Elk Grove State: CA Sampling Point: 42
Investigator(s): A. DeMas + C. Owens Section, Township, Range: S26 T7N R5E
Landform (hillslope, terrace, etc.): terrace depression Local relief (concave, convex, none): concave Slope (%): 0-2
Subregion (LRR): C Lat: 38°25'40.55"N Long: -121°23'40.55"W Datum: GPS
Soil Map Unit Name: Madera loam, 0-2% slopes NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ✓ No ___		Is the Sampled Area within a Wetland? Yes ✓ No ___
Hydric Soil Present? Yes ✓ No ___		
Wetland Hydrology Present? Yes ✓ No ___		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5)			
1. Rumex crispus	2		FAC
2. Persicaria hydropiperoides	20	✓	OBL
3. Pogogyne zizyphoroides	25	✓	OBL
4. Lolium perenne	20	✓	FAC
5. Eleocharis macrostachya	10		OBL
6. Ranunculus bonariensis	>1		OBL
7. Plagiobothrys stipitatus	10		FACW
8. Hordeum marinum	3		FAC
= Total Cover	90		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	___	x 1 = ___
FACW species	___	x 2 = ___
FAC species	___	x 3 = ___
FACU species	___	x 4 = ___
UPL species	___	x 5 = ___
Column Totals:	___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: 4A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 2/2	100					SL	
1-16	10YR 3/2	100	7.5YR 4/6	38	C	m	C	
			GY 2.5/N	2	C	m		maganese

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5) (**LRR C**)
- __ 1 cm Muck (A9) (**LRR D**)
- ✓ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- ✓ Redox Depressions (F8)
- __ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) (**LRR C**)
- __ 2 cm Muck (A10) (**LRR B**)
- __ Reduced Vertic (F18)
- __ Red Parent Material (TF2)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ✓ No ______

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- __ Surface Water (A1)
- __ High Water Table (A2)
- __ Saturation (A3)
- __ Water Marks (B1) (**Nonriverine**)
- __ Sediment Deposits (B2) (**Nonriverine**)
- __ Drift Deposits (B3) (**Nonriverine**)
- __ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7)
- __ Water-Stained Leaves (B9)
- __ Salt Crust (B11)
- __ Biotic Crust (B12)
- __ Aquatic Invertebrates (B13)
- __ Hydrogen Sulfide Odor (C1)
- __ Oxidized Rhizospheres along Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Thin Muck Surface (C7)
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- __ Water Marks (B1) (**Riverine**)
- __ Sediment Deposits (B2) (**Riverine**)
- __ Drift Deposits (B3) (**Riverine**)
- ✓ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Crayfish Burrows (C8)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Shallow Aquitard (D3)
- __ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No ✓ Depth (inches): ______

Water Table Present? Yes ______ No ✓ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ✓ Depth (inches): ______

Wetland Hydrology Present? Yes ✓ No ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Laguna Creek City/County: Elk Grove Sampling Date: 4/25/18
Applicant/Owner: City of Elk Grove State: CA Sampling Point: 4b
Investigator(s): A. Dellas & C. Owens Section, Township, Range: S26 T7N R5E
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0-1
Subregion (LRR): C Lat: 38°25'50.27"N Long: -121°22"40.38"W Datum: GPS
Soil Map Unit Name: Madera loam, 0-2 % slopes NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	Is the Sampled Area within a Wetland?	Yes ____ No ✓
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ____ No ✓		

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5)			
1. Lolium perenne	75	✓	FAC
2. Hordeum murinum	5		FAC
3. Bromus hordeaceus	15		FAC
4. Vicia villosa	<2.5		UPL
5. Erodium botrys	<2.5		UPL
6.			
7.			
8.			
= Total Cover	100		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	____	x 1 = ____
FACW species	____	x 2 = ____
FAC species	____	x 3 = ____
FACU species	____	x 4 = ____
UPL species	____	x 5 = ____
Column Totals:	____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: 4B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/4	100					SL	
2-6	10YR 3/3	95	5YR 3/4	5	C	m	L	
6-16	10YR 3/2	95	5YR 3/4	5	C	m	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5) (**LRR C**)
- __ 1 cm Muck (A9) (**LRR D**)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) (**LRR C**)
- __ 2 cm Muck (A10) (**LRR B**)
- __ Reduced Vertic (F18)
- __ Red Parent Material (TF2)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ________

Depth (inches): ________

Hydric Soil Present? Yes ✓ No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- __ Surface Water (A1)
- __ High Water Table (A2)
- __ Saturation (A3)
- __ Water Marks (B1) (**Nonriverine**)
- __ Sediment Deposits (B2) (**Nonriverine**)
- __ Drift Deposits (B3) (**Nonriverine**)
- __ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Water-Stained Leaves (B9)
- __ Salt Crust (B11)
- __ Biotic Crust (B12)
- __ Aquatic Invertebrates (B13)
- __ Hydrogen Sulfide Odor (C1)
- __ Oxidized Rhizospheres along Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Thin Muck Surface (C7)
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- __ Water Marks (B1) (**Riverine**)
- __ Sediment Deposits (B2) (**Riverine**)
- __ Drift Deposits (B3) (**Riverine**)
- __ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Crayfish Burrows (C8)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Shallow Aquitard (D3)
- __ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): ____

Water Table Present? Yes ____ No ✓ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Laguna Creek City/County: Elk Grove Sampling Date: 4/25/18

Applicant/Owner: City of Elk Grove State: CA Sampling Point: 53

Investigator(s): A. Dellas + C. Owens Section, Township, Range: S26 T7N R5E

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): C Lat: 38°25'47.00"N Long: -121°23'12.23"W Datum: GPS

Soil Map Unit Name: Druella sandy loam, drained, 0-2% slopes NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____
Hydric Soil Present?	Yes ✓	No ____
Wetland Hydrology Present?	Yes ✓	No ____

Is the Sampled Area within a Wetland? Yes ✓ No ____

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5)			
1. Plagiobothrys stipitatus	10		FACW
2. Ranunculus bonariensis	50	✓	OBL
3. Pogogyne ziziphoroides	10		OBL
4. Phalaris spp	10		UPL
5. Eleocharis macrostachya	5		OBL
6. Cat-tail spp.	5		
7.			
8.			
= Total Cover	90		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	____	x 1 = ____
FACW species	____	x 2 = ____
FAC species	____	x 3 = ____
FACU species	____	x 4 = ____
UPL species	____	x 5 = ____
Column Totals:	____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: 5A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/2	100	—				SIL	
5-10	7.5YR 3/1	85	5YR 3/4	15	C	M	CL	
10-16	10YR 2/1	99	5YR 3/4	1	C	M	SIC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ✓ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Laguna Creek City/County: Elk Grove Sampling Date: 4/25/18

Applicant/Owner: City of Elk Grove State: CA Sampling Point: 50

Investigator(s): A. Dellas & C. Owens Section, Township, Range: S26 T7N R5E

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 0-2

Subregion (LRR): C Lat: 38°25'46.61"N Long: -121°23'12.22"W Datum: GPS

Soil Map Unit Name: Bruella sandy loam, drained, 0-2% slopes NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No ✓
Hydric Soil Present?	Yes ___	No ✓
Wetland Hydrology Present?	Yes ___	No ✓

Is the Sampled Area within a Wetland? Yes ___ No ✓

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ___)			
1. Epilobium brachycarpum	2		UPL
2. Rumex crispus	3		FAC
3. Bromus hordaceus	15		FAC
4. Erodium malacoides	20	✓	UPL
5. Bromus carinatus	40	✓	UPL
6. Lolium perenne	20	✓	FAC
7.			
8.			
= Total Cover	95		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1/3 = 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	
FACW species	0	x 2 =	
FAC species	3	x 3 =	9
FACU species	0	x 4 =	
UPL species	3	x 5 =	15
Column Totals:	6 (A)		24 (B)

Prevalence Index = B/A = 24/6 = 4

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks:

SOIL

Sampling Point: SB

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/3	100					SIL	
4-10	10YR 3/3	85	5YR 3/4	15	C	m	L	
10-16	7.5YR 3/3	98	GY 2.5/N	1	c	m		maganese
			7.5YR 4/6	1	C	m		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes ______ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): ____________

Water Table Present? Yes _____ No ✓ Depth (inches): ____________

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): ____________

Wetland Hydrology Present? Yes ______ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Laguna Creek City/County: Elk Grove/Sacramento Sampling Date: 04/26/18
Applicant/Owner: City of Elk Grove State: CA Sampling Point: 102
Investigator(s): Andrew Dellas, Courtney Owens Section, Township, Range: S26 T7N R5E
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0-1
Subregion (LRR): C Lat: 38°25'52.64"N Long: -121°23'36.15" Datum: GPS
Soil Map Unit Name: San Joaquin silt loam, 0 to 3 % slopes NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5)			
1. Lolium perenne	97	✓	FAC
2. Rumex crispus	71		FAC
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	98		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 2 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	____	x 1 = ____
FACW species	____	x 2 = ____
FAC species	____	x 3 = ____
FACU species	____	x 4 = ____
UPL species	____	x 5 = ____
Column Totals:	____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: 102

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/3	98	5YR 3/4	2	C	M	SiL	
3-16	10YR 3/1	100	5YR 4/6	30	C	M	SiCL	
			GY 2.5/N	10	C	M		manganese / concretion

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ✓ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ✓ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ______

Water Table Present? Yes ___ No ✓ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ______

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Laguna Creek City/County: Elk Grove / Sacramento Sampling Date: 4/25/18
Applicant/Owner: City of Elk Grove State: CA Sampling Point: 6b
Investigator(s): Andrew Dellas, Courtney Owens Section, Township, Range: S26 T7N R5N
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): —
Subregion (LRR): C Lat: 38°25'52.50"N Long: -121°23'36.50 Datum: GPS
Soil Map Unit Name: San Joaquin silt loam, 0 to 3 % slopes NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ___
Hydric Soil Present?	Yes ___	No ✓
Wetland Hydrology Present?	Yes ___	No ✓

Is the Sampled Area within a Wetland? Yes ___ No ✓

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ___)			
1. Bromus hordeacus	75	✓	FAC
2. Lolium perenne	18		FAC
3. Vicia villosa	6		UPL
4.			
5.			
6.			
7.			
8.			
= Total Cover	99		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 71 % Cover of Biotic Crust ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	___	x 1 = ___
FACW species	___	x 2 = ___
FAC species	___	x 3 = ___
FACU species	___	x 4 = ___
UPL species	___	x 5 = ___
Column Totals:	___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: 6b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/4	100					SIL	
4-16	10YR3/3	99	7.5YR4/6	1	C	M	SIL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5) (**LRR C**)
___ 1 cm Muck (A9) (**LRR D**)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) (**LRR C**)
___ 2 cm Muck (A10) (**LRR B**)
___ Reduced Vertic (F18)
___ Red Parent Material (TF2)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: ___
Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1) (**Nonriverine**)
___ Sediment Deposits (B2) (**Nonriverine**)
___ Drift Deposits (B3) (**Nonriverine**)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Water-Stained Leaves (B9)
___ Salt Crust (B11)
___ Biotic Crust (B12)
___ Aquatic Invertebrates (B13)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water Marks (B1) (**Riverine**)
___ Sediment Deposits (B2) (**Riverine**)
___ Drift Deposits (B3) (**Riverine**)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___
Water Table Present? Yes ___ No ✓ Depth (inches): ___
Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Laguna Creek City/County: Elk Grove/Sacramento Sampling Date: 04/26/18

Applicant/Owner: City of Elk Grove State: CA Sampling Point: 72

Investigator(s): A. Dellas, C. Avens Section, Township, Range: S26 T7N R5E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 0-1

Subregion (LRR): C Lat: 38°25'53.27"N Long: -121°23'24.91"W Datum: GPS

Soil Map Unit Name: San Joaquin silt loam, 0 to 3 % slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ___	**Is the Sampled Area within a Wetland?** Yes ✓ No ___
Hydric Soil Present?	Yes ✓ No ___	
Wetland Hydrology Present?	Yes ✓ No ___	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30)			
1. Eucalyptus obliqua	5		
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ___)			
1. Lolium perenne	10		FAC
2. Hordeum marinum	10	✓	FAC
3. Eleocharis macrostachya	20	✓	OBL
4. Leontodon saxatilis	20	✓	FACU
5.			
6.			
7.			
8.			
= Total Cover	60		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 40 % Cover of Biotic Crust ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1/2 = 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	1	x 1 = 1
FACW species	0	x 2 = 0
FAC species	2	x 3 = 6
FACU species	1	x 4 = 4
UPL species		x 5 =
Column Totals:	4 (A)	11 (B)

Prevalence Index = B/A = 11/4 = 2.75

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: 32

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/3	100					L	
2-16	7.5YR 2/2	60	5YR 4/6	30	C	M	CL	
			GY2.5/N	10	C	M		manganese / concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5) (**LRR C**)
- __ 1 cm Muck (A9) (**LRR D**)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) (**LRR C**)
- __ 2 cm Muck (A10) (**LRR B**)
- __ Reduced Vertic (F18)
- __ Red Parent Material (TF2)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ✓ **No** ______

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- __ Surface Water (A1)
- __ High Water Table (A2)
- __ Saturation (A3)
- __ Water Marks (B1) (**Nonriverine**)
- __ Sediment Deposits (B2) (**Nonriverine**)
- __ Drift Deposits (B3) (**Nonriverine**)
- ✓ Surface Soil Cracks (B6)
- __ Inundation Visible on Aerial Imagery (B7)
- ✓ Water-Stained Leaves (B9)
- __ Salt Crust (B11)
- ✓ Biotic Crust (B12)
- __ Aquatic Invertebrates (B13)
- __ Hydrogen Sulfide Odor (C1)
- __ Oxidized Rhizospheres along Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Thin Muck Surface (C7)
- __ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- __ Water Marks (B1) (**Riverine**)
- __ Sediment Deposits (B2) (**Riverine**)
- __ Drift Deposits (B3) (**Riverine**)
- __ Drainage Patterns (B10)
- __ Dry-Season Water Table (C2)
- __ Crayfish Burrows (C8)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Shallow Aquitard (D3)
- __ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No ✓ Depth (inches): ______

Water Table Present? Yes ______ No ✓ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ✓ Depth (inches): ______

Wetland Hydrology Present? Yes ✓ **No** ______

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Laguna Creek City/County: Elk Grove / Sacramento Sampling Date: 04/26/18

Applicant/Owner: City of Elk Grove State: CA Sampling Point: 7D

Investigator(s): A. Dellas + C. Owens Section, Township, Range: S26 T7N R5E

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 0-1

Subregion (LRR): C Lat: 38°25'53.37"N Long: -121°23'25.30"W Datum: GPS

Soil Map Unit Name: San Joaquin silt loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓
Hydric Soil Present?	Yes ____	No ✓
Wetland Hydrology Present?	Yes ____	No ✓

Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: ____)			
1. Erodium brachycarpum	25	✓	FACU
2. Erodium moschatum	10		FACU
3. Avena fatua	10	✓	UPL
4. Bromus hordeacus	25	✓	FACU
5. Lolium perenne	10		FACU
6.			
7.			
8.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 =
FACW species	0	x 2 =
FAC species	0	x 3 =
FACU species	4	x 4 = 16
UPL species	1	x 5 = 5
Column Totals:	5 (A)	21 (B)

Prevalence Index = B/A = 21/5 = 4.2

Hydrophytic Vegetation Indicators:

__ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: 7b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/3	99	7.5YR 4/4	>1	C	M	L	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ______

Water Table Present? Yes ___ No ✓ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ______

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Laguna Creek City/County: Elk Grove / Sacramento Sampling Date: 04/26/18
Applicant/Owner: City of Elk Grove State: CA Sampling Point: 8a
Investigator(s): A. DeVas & C. Owens Section, Township, Range: S25 T7N R5E
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 0-2
Subregion (LRR): C Lat: 38°25'46.23"N Long: -121°23'20.34"W Datum: GPS
Soil Map Unit Name: Bruella sandy loam, 0 to 2 % slopes NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ____)			
1. Lolium perenne	5		FAC
2. Juncus patens	70	✓	OBL
3. Pogogyne ziziphoroides	5		OBL
4.			
5.			
6.			
7.			
8.			
= Total Cover	80		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: 8a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR3/2	99	5YR 4/6	1	C	M	CL	
3-7	10YR 3/2	75	7.5YR 4/6	25	C	M	CL	
7-16	10YR 2/2	85	5YR 3/3	15	C	M	CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ✓ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ✓ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ✓ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ________

Water Table Present? Yes ___ No ✓ Depth (inches): ________

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): ________

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Laguna Creek City/County: Elk Grove / Sacramento Sampling Date: 04/26/18

Applicant/Owner: City of Elk Grove State: CA Sampling Point: 86

Investigator(s): A. Dellas & C. Owens Section, Township, Range: S25 T7N R5E

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0-1

Subregion (LRR): C Lat: 38°25'46.19"N Long: -121°23'20.48"W Datum: GPS

Soil Map Unit Name: Bruella sandy loam, 0-2% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓
Hydric Soil Present?	Yes ____	No ✓
Wetland Hydrology Present?	Yes ____	No ✓

Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: ____)			
1. Bromus hordeaceus	45	✓	FACU
2. Rumex crispus	15		FAC
3. Lolium perenne	30		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	90		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1/0=0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 =
FACW species	0	x 2 =
FAC species	2	x 3 = 6
FACU species	1	x 4 = 4
UPL species		x 5 =
Column Totals:	3 (A)	10 (B)

Prevalence Index = B/A = 10/3=3.3

Hydrophytic Vegetation Indicators:

- __ 1 - Rapid Test for Hydrophytic Vegetation
- __ 2 - Dominance Test is >50%
- __ 3 - Prevalence Index is ≤3.0[1]
- __ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- __ 5 - Wetland Non-Vascular Plants[1]
- __ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: 8B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/4	100	—				SL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ______

Water Table Present? Yes ___ No ✓ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ______

Wetland Hydrology Present? Yes ___ No ✓

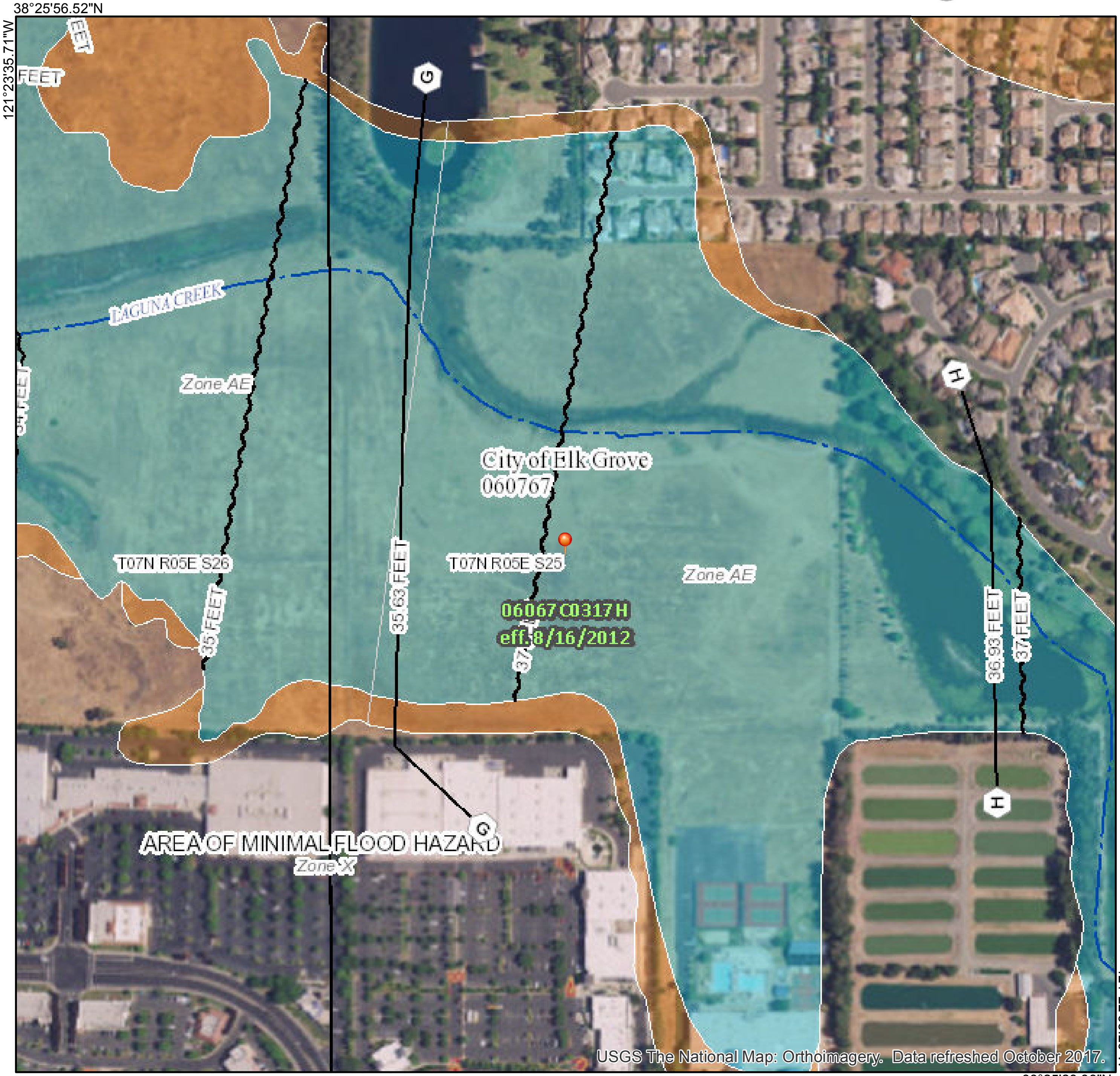
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix D:
FEMA FIRM Maps

National Flood Hazard Layer FIRMette

FEMA



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) *Zone A, V, A99*
	With BFE or Depth *Zone AE, AO, AH, VE, AR*
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
	Area with Flood Risk due to Levee *Zone D*
OTHER AREAS	NO SCREEN Area of Minimal Flood Hazard *Zone X*
	Effective LOMRs
	Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
OTHER FEATURES	B 20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
	8 Coastal Transect
	513 Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
MAP PANELS	Digital Data Available
	No Digital Data Available
	Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/18/2018 at 5:00:21 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

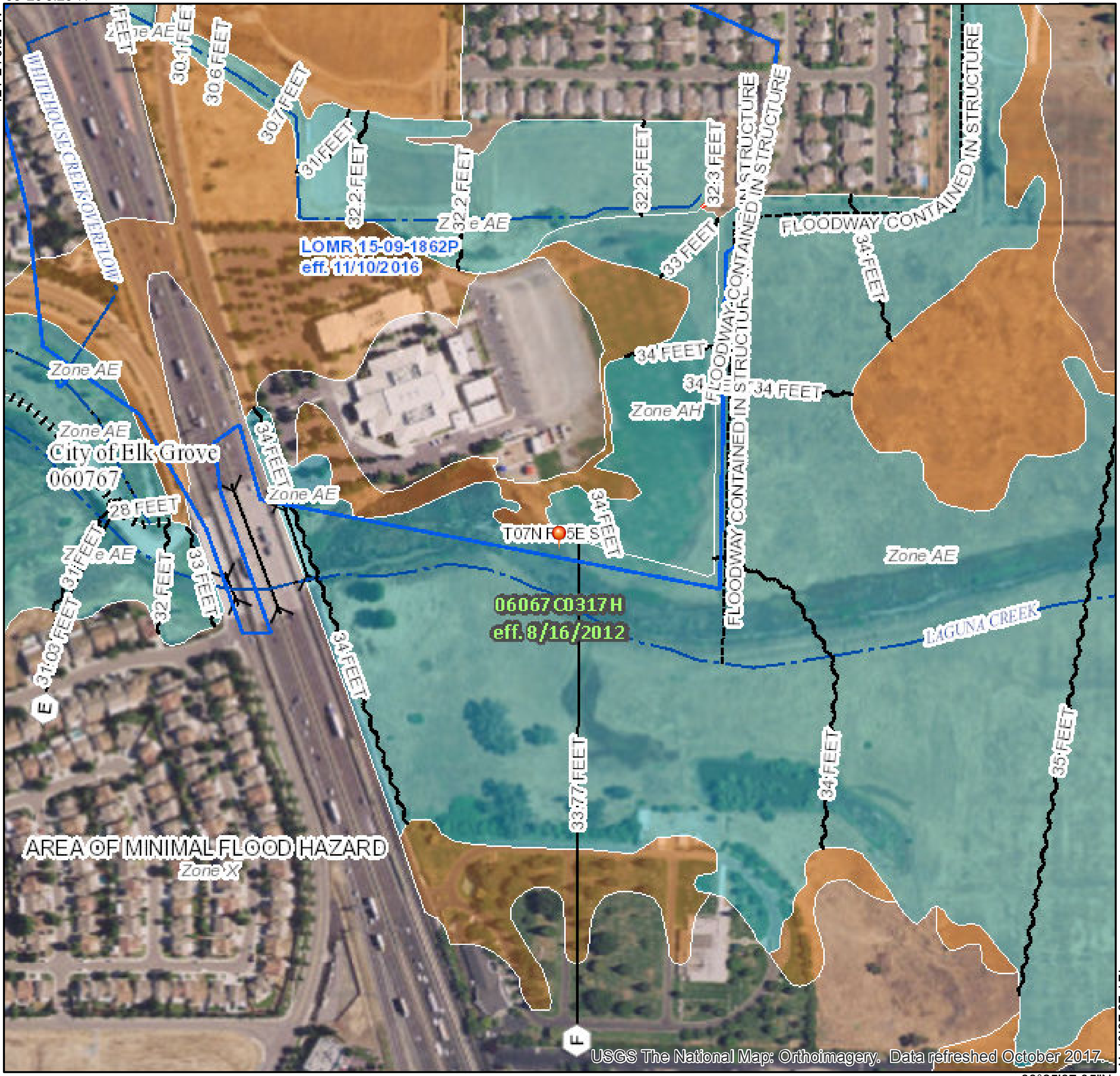
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMette

FEMA

38°26'5.23"N

121°24'3.52"W



121°23'26.07"W

38°25'37.07"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- B 20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/18/2018 at 5:14:31 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Appendix E:
Response to Public Comments

Introduction

This Appendix contains the comments received on the Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project (SCH# 2022110059) during the agency/public review period for the draft Initial Study with Mitigated Negative Declaration (IS/MND) from November 4, 2022 to December 9, 2022.

Comments Received on the Draft Initial Study with Mitigated Negative Declaration

The public comment period for the Project was initiated on November 4, 2022 and was open for 30 days. Five comment letters or emails were received. A list of the comment letters received is provided below, with the individual comment letters and the City's response to them provided on the following pages.

Comment Number	Commenter	Affiliation
1	Dan Shafer, Campus Operations Manager	Creekside Christian Church
2	Tessa Kroeck and Reimund Kroeck	Citizen
3	Peter Minkel, Engineering Geologist	Central Valley Regional Water Quality Control Board (RWQCB)
4	Joseph J. Hurley, Senior Civil Engineer	Sacramento Metropolitan Air Quality Management District (SMAQMD)
5	Amy Spitzer, Environmental Services Specialist	Sacramento Municipal Utilities District (SMUD)

Comment 1: Dan Shafer, Creekside Christian Church, November 18, 2022

November 16, 2022

City of Elk Grove
Public Works Department
8401 Laguna Palms Way
Elk Grove, CA 95758

Subject: Comments on Mitigated Negative Declaration
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project, November 4, 2022

Creekside Christian Church (Creekside) would like to thank the City of Elk Grove Public Works Department for the opportunity to review and comment on the subject document. Creekside would also like to thank the Public Works Department for relocating the Whitehouse Creek trail alignment off of Creekside's property.

Mitigated Negative Declaration Comments

1-1

1. Have the Biological Resources Report and the Aquatic Resource Delineation Report (prepared by Dokken Engineering) in Appendices B and C, respectively, been reviewed by all appropriate regulatory agencies and, if so, are these reports considered Final documents?

1-2

2. **Page 13, Section 3A, #9 (Surrounding Land Uses and Setting):** *"The area south of the Project site is zoned Institutional and SC and is in use as a cemetery and developed with retail uses."*
   - Please note that part of the area south of the Project site is in use as a church (Creekside Christian Church).

1-3

3. **Page 17, Section 3, Subsection Ic (Aesthetics) and Page 20, Subsection IIe (Agricultural and Forest Resources):** These two sections present different amounts of vegetation that would be removed as part of this project (i.e., 4 acres versus 6 acres). This discrepancy needs to be corrected.

1-4

4. **Page 50, Section 3, Giant Garter Snake:** *"Due to the presence of potentially suitable habitat and the distance to known extant occurrences, the species is considered to have a low to moderate potential to occur within the BSA, and a Biological Assessment will be prepared for informal consultation of potential impacts to aquatic and upland habitats during the Section 404 permitting process through USACE federal nexus."*
   - What is the timeline for preparation of the Biological Assessment and Section 404 permitting process with USACE?

1-5

5. **Page 58, Section 3, Giant Garter Snake:** Figure 6 depicts the GGS Upland Habitat Limits. As currently drawn, the line passes through (a) the south side of Creekside Christian Church's main building, (b) the southwest corner of Creekside's paved parking lot, (c) Creekside's playground, modular restrooms, and grass field, and (d) the residential development north of Whitehouse Creek.
   - What criteria was used to draw this line? As drawn, parts of it appear arbitrary.
   - Please redraw the line to be more realistic and representative. Creekside does not want habitat lines drawn on its property that negatively impact any of its future development plans.

RECEIV
NOV 18 2022
PUBLIC WC

creekside
christian church
creeksideeg.com
916 685.4821 | 916 685.9756 (fax)
8939 E. Stockton Blvd. | Elk Grove, CA 95624

1-6

6. **Page 95, Section 3, Subsection IXg (Hazards and Hazardous Materials):** *"No Impact. The Project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, and no wildlands are adjacent to or within the Project area; therefore, no impact would occur."*
   - Ironically, during the summer of 2022, the City of Elk Grove contracted brush and tall grass clearing on City parcels south of Cantwell Drive @ Kingmont Way. During the clearing operation, the contractor started a fire on APN 116-0030-055-0000 resulting in the deployment of several fire trucks; several residents used their garden hoses to protect their property. This fire jumped the property line burning the northeast portion of Creekside's property along with a portion of City parcels 116-0030-056-0000 and 116-0030-058-0000.
   - An impact finding of 'Less Significant with Mitigation' or 'Potentially Significant Impact' may be more appropriate. A mitigation measure involving the onsite staging of a water truck or other water supply to address fires caused by contractor negligence or equipment malfunction should be employed during construction activities.
   - Typically, the dry grass on East Lawn parcel 116-0030-025-0000 is not cut down for fire control purposes. Therefore, fire danger on this parcel during construction is high, as well as after construction when the trail is open for use (i.e., discarded cigarettes, homeless activity, etc.).

1-7

7. **Page 100, Section 3, Subsection Xa(iv) (Hydrology and Water Quality):** *"...which will result in an increase in the quantity of runoff generated in a storm event. The quantity of additional runoff generated from the proposed Project would not be substantial and is not expected to contribute to runoff water that would exceed the capacity of existing or planned stormwater drainage systems in the Project vicinity."*
   - Will any portions of the road/trail be elevated above the 10-year or 100-year flood plain to act to redirect stormwater runoff or act as a barrier to stormwater runoff? If so, how will this be mitigated?

1-8

8. **Page 108, Section 3, Subsection XIII (Noise):** Under 'Affected Environment', the list of 'noise-sensitive land uses' near the Project site should include the senior living facility, Well Quest, located south of Cantwell Drive @ East Stockton Blvd.

1-9

9. **Page 112, Section 3, Subsection XIV (Population and Housing):** The discussion for evaluation criterion (a) states, *"The proposed Project... does not include extension or construction of new roadways which could potentially induce growth. Therefore, the Project would have no potential to induce substantial population growth in the area, either directly or indirectly. No impact would occur."*
   - Due to the rapid increase in the homeless population in Elk Grove and surrounding communities who live under bridges, along roadsides, and in State/City easements, parks, etc. adjacent to the Project site, construction of the access road/trail between East Stockton Blvd. and Camden Park will potentially promote the establishment of homeless encampments on and adjacent to the road/trail. With these encampments comes the concerns with (a) fires (ref. 2022 homeless-caused fire under Elk Grove Blvd. pedestrian overcrossing), (b) public safety, (c) health hazards (i.e., urination/defecation in Whitehouse and Laguna Creeks), (d) trash, and (e) vandalism. A finding of 'No Impact' is an incorrect conclusion to draw from the City's evaluation. A finding of 'Less Than Significant with Mitigation' or 'Potentially Significant Impact' would be more

1-9 (continued) appropriate as strictly-enforced law enforcement mitigation measures need to be employed to keep the homeless population out of the project area after construction.

1-9i
- Additionally, extension of the trail from East Stockton Blvd. to Camden Park will provide a means of unauthorized access to private property. What will be the City's mitigation measure to protect/secure private property from unauthorized access?

Please provide me written responses to these comments at the address below.

If you have any questions, please don't hesitate to contact me.

Sincerely,

Dan Shafer
Campus Operations Manager
Creekside Christian Church
8939 E. Stockton Blvd.
Elk Grove, CA 95624
dan@creeksideeg.com
916-685-4821 ext. 106

cc: Scott Hansen, Senior Pastor, Creekside Christian Church
Troy Winslow, Executive Pastor, Creekside Christian Church
Kim Shepherd, Business Administrator/CFO, Creekside Christian Church
Brian Manning, Attorney, DNLC

Response to Comment 1: Dan Shafer, Creekside Christian Church, November 18, 2022

The City thanks the Creekside Christian Church for its comment letter. The following are the City's responses to each of the comments.

1-1 The Biological Resources Report and the Aquatic Resource Delineation Report included in Appendix B and C are considered final documents. During the Plans, Specifications, and Estimate (PS&E) phase of the Project, both documents will be reviewed by the US Army Corps of Engineers (USACE) and the California Department of Fish and Wildlife to obtain necessary approvals and permits.

1-2 The sentence in question is discussing the zoning outside of the Project site limits, south of Laguna Creek. This section has been revised to more clearly present the current zoning and land uses within and adjacent to the Project site.

1-3 The amount of vegetation removed from the Project has been revised from 4 acres to 6 acres in Chapter 3 Section II Agriculture and Forest Resources.

1-4 The Biological Assessment (BA) and USACE permit application will be prepared during the Plans, Specs, and Estimate (PS&E) phase of the Project and approval of the BA will be dependent upon USACE's workload at the time of submittal.

1-5 The giant garter snake (GGS) upland habitat limits were created based on a 200-foot buffer from identified ditches, drains, channels, or swales within the Project area. In its Programmatic Formal Consultation for USACE 404 Permitted Projects with Relatively Small Effects on the GGS within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, and Yolo Counties, California (USFWS 1997, 2004), the US Fish and Wildlife Service (USFWS) incorporated a standard of 200 feet of upland habitat on each bank side of linear aquatic habitat as suitable upland habitat for GGS when assessing a project's disturbance area. The 200-foot upland habitat buffer has become standard in subsequent Biological Opinions and impact analyses and is used as a set criterion for assessing outlying habitat value. All projects/developments that require coordination with the USACE will be required to utilize this buffer. Further, CDFW utilizes a similar buffer when considering a project's impact in Lake and Streambed Alteration Agreements.

Due to these reasons, a portion of the Creekside Christian Church has been mapped, for the purposes of this Project only, as GGS habitat limits since it is within 200 feet of Laguna Creek, which has been determined to be suitable habitat for GGS. Due to the standard protocol mentioned above and to preserve accuracy of the Project's mapping and analysis, the GGS habitat limits cannot be modified. No changes were made to the IS/MND.

1-6 As discussed in Chapter 3 Section III (Air Quality), the Project will implement Measure **AQ-1** which will require all exposed surface areas to be watered two times daily during construction. Question "g" in Chapter 3 Section IX (Hazards and Hazardous Materials) now references **AQ-1** and has also been updated to reflect the Project area's fire hazard severity level and an impact finding of "Less than Significant with Mitigation".

1-7 The Project will have a negligible effect on the water surface elevation; therefore, portions of the road/trail will not need to be elevated and no mitigation measures are required. See Chapter 3 Section X(iv) (Hydrology and Water Quality) for more information.

1-8 The senior living facility, WellQuest of Elk Grove, has been included as a noise-sensitive land use in the Affected Environment section of Chapter 3 Section XIII (Noise) of this IS/MND.

1-9 Unhoused encampments are not analyzed under CEQA for population and housing as this section applies to planned/future development as opposed to transient/unauthorized encampments. The Project will construct a multi-functional corridor and does not propose constructing new homes, businesses, or roads that will either directly or indirectly increase population growth; therefore, the impact determinations for Chapter 3 Section XIV Population and Housing of this IS/MND have not been changed and no mitigation measures have been added.

After construction of the Project, the area will be patrolled by the City of Elk Grove Police Department as frequently as other areas in the City of Elk Grove are patrolled. See Chapter 3 Section XV Public Services for more information about police protection. Further, a representative of the Elk Grove City Police stated during a May 12, 2021 meeting with Creekside Church that trail systems do not necessarily attract unhoused populations. A benefit of trail systems is that they often discourage unhoused encampments as 1) law enforcement will now have access to the greater trail area, which includes Creekside Church, via bicycle patrols along the trail system; and 2) there is greater visibility from the general public using the trail system which discourages establishment of unhoused encampments due to the lack of privacy.

1-9i After construction of the Project, the area will be patrolled by the City of Elk Grove Police Department as frequently as other areas in the City of Elk Grove are patrolled. See Chapter 3 Section XV Public Services for more information about police protection. Further, a representative of the Elk Grove City Police stated during a May 12, 2021 meeting with Creekside Church that trail systems do not necessarily create a sudden increase in criminal activity, such as unauthorized access to private property and vandalism. A benefit of trail systems is that they often discourage unlawful activities as 1) law enforcement will now have access to the greater trail area, which includes Creekside Church, via bicycle patrols along the trail system; and 2) there is greater visibility from the general public using the trail system which discourages criminal activity. The City will continue to discuss Project related issues related to private property access with property owners during final design.

Comment 2: Tessa Kroeck and Reimund Kroeck, Citizen, November 24, 2022

To whom it may concern:

2-1 I live at the edge of the field with my father. And I would like to paint a picture for you, of what you are about to destroy. Though a bike/walk path is a nice convenience, it is not worth building it where the city has proposed to build it. The field is full of wildlife! There are turkeys that roam the whole expanse of the field, and during the cooler months, come to eat the falling acorns from the neighbors tree. There is a lone coyote who I believe is female as it had a young one with her just this year, who often crosses the field to get to the creek to drink water. I had a good conversation with her one night, I matched her howl and she came close to my fence, it's a tough life out there, not many free places left for her to exist and roam free. We have three large birds of prey (one that is so large it could be an eagle… maybe it is! with its six-foot wing span) that hunt the field and stand tall among the trees and the twisted oaks by the creek. Occasionally, they even take pause on our fence (or perhaps was steeling some of the bird feed I have for the little house birds like the finch or pigeon). And when the rains come, the back fields fill with rain water and the frogs come out and the grandest symphony can be heard for a few weeks. It is beautiful to fall asleep to and is so loud it covers the freeway noise (although tire noise is a topic for another day). Back in 2017, when we had that huge rain fall, every field became full of water and flooded (I was actually a bit concerned). Even last year in 2021, how it rained heavy for like a week, the back field flooded. And what happens when the fields flood… Well, the frogs come out and mate, my father has found salamanders on our porch, and the rush of water spreads the lavender further and further out, so that when spring comes, the multiple circle-like crops of wild lavender grow, nourishing the bees and insects. Lavender is the one I have noticed take off the most, but many other species flourish in the fields too. There are small white flowers, very delicate, that grow in patches. There are yellow patches too, of which have soft petals that grown on long green stems. Accompanying close by with other types of purples and bright whites. I know not the names, unfortunately, but I do appreciate the beauty they bring. Un-touched by humans. They whole area is untouched by human hands. Before it was mowed down, the little finches would sway on long branches

2-1 (continued)

sticking out of the ground. And before it was mowed down, a white owl during the twilight hours would scan the field looking for mice to bring home. Before it was mowed down, I was hopeful of the spring flowers… Spring has not come yet, and I wonder if the flowers, the purples, the yellows, the whites… will they come back? Will the bees come back? Will the dragonflies come back? Now just imagine if more humans, more construction, more disturbance on the land takes place. How much wildlife are “WE” willing to impact for the sake of connecting asphalt to asphalt! It isn’t even in a straight line (just saying). And maybe I am a bit in shock here, wondering… are we not in an energy crisis? Yet, the city wishes to use up more and more resources. The city wishes to build and make money rather than preserve the little land left and use up the dwindling resources. I painted my picture and now voiced my confusion at leadership decisions. One more concern, in regards to safety. A path would

2-2

provide easy access for homeless and vagrants to residents backyards. The Shell gas station has invited an investing crowd of people into the area. And not to mention that the Park-and-Ride area has many overnighters, who thankfully keep to themselves… except the amount of times I have seen people come up from under the bridge near the freeway is alarming. You would be giving access to residents homes from a mix of people. Most probably good, but one should not discount the bad intentioned. Most of us have very open, thin fences, and enjoy our privacy (a privilege that has not gone unnoticed). And now I would have to worry about extra eyes peaking into my bedroom at night, extra eyes looking for things to steal, extra eyes looking to cause trouble!

Please, reconsider your planned route. As a resident of Elk Grove, I enjoy living at the edge of a field, I enjoy reading my books under a sun umbrella and becoming so still that the wildlife around me blooms. I enjoy the pink and yellow sunrises that cut across the sky without the distraction of a bike bell. I enjoy the turkeys, the coyotes, the birds of prey, the wildflowers, and when the rain comes, I enjoy the frogs and wet land creatures. The egrets that stalk the fields are just beautiful. Like finding a hidden gem. And of course, I enjoy not being paranoid and concerned for my safety as woman.

Respectfully, -Tessa Kroeck (Homeowner)

and Reimund Kroeck (Homeowner)

November 24, 2021

Comment 2 Response: Tessa Kroeck and Reimund Kroeck, Citizen, November 24, 2022

The City thanks Tessa and Reimund Kroeck for their comment letter. The following is the City's response to the comment letter.

2-1 The Project has been designed to minimize impacts to wildlife and plants present within the Project area and will implement mitigation measures before, during, and after construction to continue minimization of any potential impacts (see Chapter 3 Section IV Biological Resources for more information). Additionally, the Project is a narrow multi-functional corridor and will not construct structures that will impede wildlife movement throughout or use of the greater vicinity. The Project will also allow the public to enjoy the existing plants and wildlife while also providing a pedestrian trail that is protected from vehicles on the roadway.

2-2 Regarding safety, after construction of the Project, the area will be patrolled by the City of Elk Grove Police Department as frequently as other areas in the City of Elk Grove are patrolled. Trail systems do not necessarily attract unhoused populations or create a sudden increase in criminal activity, such as unauthorized access to private property. A benefit of trail systems is that they often discourage unlawful activities and unhoused encampments as 1) law enforcement will now have access to a larger area, including the private residence, via bicycle patrols along the trail system; and 2) there is greater visibility from the general public using the trail system which discourages criminal activity and establishment of unhoused encampments. If there are unhoused individuals impeding the function of the corridor or posing a threat within the area, they would be removed by law enforcement. See Chapter 3 Section XV Public Services for more information about police protection.

Comment 3: Peter Minkel, Central Valley RWQCB, December 9, 2022

CALIFORNIA Water Boards

GAVIN NEWSOM
GOVERNOR

YANA GARCIA
SECRETARY FOR ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

9 December 2022

Keith Jukes
City of Elk Grove
8401 Laguna Palms Way
Elk Grove, CA 95758
kjukes@elkgrovecity.org

COMMENTS TO REQUEST FOR REVIEW FOR THE MITIGATED NEGATIVE DECLARATION, LAGUNA CREEK AND WHITEHOUSE CREEK MULTI-FUNCTIONAL CORRIDOR PROJECT (WDR018), SCH#2022110059, SACRAMENTO COUNTY

Pursuant to the State Clearinghouse's 3 November 2022 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Mitigated Negative Declaration* for the Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project (WDR018), located in Sacramento County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore, our comments will address concerns surrounding those issues.

3-1

I. Regulatory Setting

<u>Basin Plan</u>

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has

3-1 (continued)

adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues. For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Implementation Policy is available on page 74 at:
https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.pdf

In part it states:

Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.

This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), Construction General Permit Order No. 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). For more information on the Construction General Permit, visit the

3-1 (continued)

State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Clean Water Act Section 404 Permit
If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACE). If a Section 404 permit is required by the USACE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements. If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification
If an USACE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications. For more information on the Water Quality Certification, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/

Waste Discharge Requirements – Discharges to Waters of the State
If USACE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation. For more information on the Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at:https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/

Projects involving excavation or fill activities impacting less than 0.2 acre or 400 linear feet of non-jurisdictional waters of the state and projects involving dredging activities impacting less than 50 cubic yards of non-jurisdictional waters of the state may be eligible for coverage under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ (General Order 2004-0004). For more information on the General Order 2004-0004, visit the State Water Resources

Control Board website at:
https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2004/wqo/wqo2004-0004.pdf

Dewatering Permit
If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Threat General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Threat Waiver) R5-2018-0085. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Threat Waiver and the application process, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2018-0085.pdf

3-1 (continued)

Limited Threat General NPDES Permit
If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Limited Threat Discharges to Surface Water* (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order. For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf

NPDES Permit
If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit. For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/help/permit/

If you have questions regarding these comments, please contact me at (916) 464-4684 or Peter.Minkel2@waterboards.ca.gov.

Peter Minkel

Peter Minkel
Engineering Geologist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

Comment 3 Response: Peter Minkel, Central Valley RWQCB, December 9, 2022

The City thanks the Central Valley RWQCB for its comment letter. The following is the City's response to the comment letter.

3-1 The environmental document has analyzed potential impacts to both surface and ground water which may occur because of project implementation, including potential temporary impacts during construction. Please see Chapter 3 Section IV Biological Resources and Chapter 3 Section X Hydrology and Water Quality for more information.

The City will comply with all applicable requirements/regulations listed in the letter for the Project, including, but not limited to obtaining the following, as listed in Chapter 2.4, Table 1:

- Construction Storm Water General Permit/NPDES
- Clean Water Act Section 404 Permit
- Clean Water Act Section 401 Water Quality Certification or Waste Discharge Requirement

The conditions requiring a need to obtain a Dewatering Permit or Limited Threat General NPDES Permit are not anticipated; however, these will be obtained if final design of the Project determines these permits are applicable.

Comment 4: Joseph J. Hurley, SMAQMD, December 9, 2022

SACRAMENTO METROPOLITAN
AIR QUALITY
MANAGEMENT DISTRICT

December 9, 2022

Keith Jukes, PE
Senior Civil Engineer
City of Elk Grove
8401 Laguna Palms Way
Elk Grove, CA 95758
kjukes@elkgrovecity.org

Dear Keith Jukes,

Subject: **Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project Mitigated Negative Declaration**

Thank you for providing the Sacramento Metropolitan Air Quality Management District (Sac Metro Air District) with the opportunity to review the project routing for the Initial Study/Proposed Mitigated Negative Declaration for the Laguna Creek and Whitehouse Creek Multi-Functional Corridor. We offer the comments below on project development to benefit air quality and public health and reduce greenhouse gas emissions.

4-1

California Environmental Quality Act Review:

Construction

Staff notes that the MND includes the Sac Metro Air District Basic Construction Emission Control Practices, also available on our website. Additionally, all projects are subject to Sac Metro Air District rules and regulations in effect at the time of construction. Please visit our website to find a list of the most common rules that apply during the construction phase of projects

4-2

Design Comments:

Urban Heat Island (UHI) Effects:

According to the Capital Region Transportation Sector Urban Heat Island Mitigation Project (UHI Project), the urban heat island effect already presents a severe challenge to our region, with urbanized areas in Sacramento some 3 to 9 degrees Fahrenheit warmer than their surrounding areas. Higher ambient temperatures increase the formation of ozone, a respiratory system irritant. These higher temperatures can lead to heat stress, heat stroke, and even heat mortality during extreme heat and extended heat waves, especially for the elderly, the young, and those with pre-existing health conditions. The urban heat island results from converting undeveloped land to urbanized land.

4-2 (continued)

For construction, we recommend (1) all new pavements, including sidewalks, access roads, bike lanes, pedestrian paths, and parking lots, having an albedo of at least 0.25-0.5. We recommend that the landscaping plan incorporate new trees to shade new the new multi-functional corridor and related structures to the extent feasible. The Sacramento Tree Foundation's Shady Eighty guide is a directory of air-quality supportive trees, a more extensive tree list is available on page 153 of the UHI Technical Analysis Report.

We thank the City of Elk Grove for the opportunity to comment on this document. You may contact me at jhurley@airquality.org or (279) 207-1130 if you have questions regarding these comments.

-JJ Hurley

Joseph J. Hurley
Associate Air Quality Planner/Analyst
Sacramento Metropolitan Air Quality Management District

c: Paul Philley, AICP, Program Supervisor, Sac Metro Air District

Sent via Email.

Comment 4 Response: Joseph J. Hurley, SMAQMD, December 9, 2022

The City thanks the Air Quality Management District for its comment letter. The following are the City's responses to each of the comments.

4-1 Chapter 3 Section III Air Quality of the IS/MND describes how the Project will implement **AQ-1** (SMAQMD Basic Construction Emission Control Practices) during construction. Please see **AQ-1** in Chapter 3 Section III Air Quality for more information. Additionally, the City will ensure implementation of all mitigation measures related to the Project before, during, and after construction.

4-2 Pursuant to City standards, the recommended design comment for new pavement is not required for trail pavement and will not be implemented for this Project. Additionally, tree plantings will not be part of the landscaping at this time due to the lack of a dedicated water source, insufficient space within the public ROW to plant trees, and to avoid additional impacts to the sensitive wetlands and vernal pool habitats in the Project vicinity. After construction, temporary impact areas would be revegetated with native species as part of Project restoration requirements.

Comment 5: Amy Spitzer, SMUD, December 5, 2022

Powering forward. Together.

SMUD®

Sent Via E-Mail

December 5, 2022

Keith Jukes, PE
City of Elk Grove
Department of Development Services, Planning Division
8401 Laguna Palms Way
Elk Grove, CA 95758
kjukes@elkgrovecity.org

Subject: **Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project (WDR018) / MND / 2022110059**

Dear Mr. Jukes:

The Sacramento Municipal Utility District (SMUD) appreciates the opportunity to provide comments on the Mitigated Negative Declaration (MND) for Laguna Creek and Whitehouse Creek Multi-Functional Corridor Project (WDR018) (Project, SCH 2022110059). SMUD is the primary energy provider for Sacramento County and the proposed Project area. SMUD's vision is to empower our customers with solutions and options that increase energy efficiency, protect the environment, reduce global warming, and lower the cost to serve our region. As a Responsible Agency, SMUD aims to ensure that the proposed Project limits the potential for significant environmental effects on SMUD facilities, employees, and customers.

It is our desire that the Project will acknowledge any impacts related to the following:

5-1

- Overhead and or underground transmission and distribution line easements. Please view the following links on smud.org for more information regarding transmission encroachment:
  - https://www.smud.org/en/Business-Solutions-and-Rebates/Design-and-Construction-Services
  - https://www.smud.org/en/Corporate/Do-Business-with-SMUD/Land-Use/Transmission-Right-of-Way
- Utility line routing
- Electrical load needs/requirements
- Energy Efficiency
- Climate Change
- Cumulative impacts related to the need for increased electrical delivery
- The potential need to relocate and or remove any SMUD infrastructure that may be affected in or around the project area

More specifically, SMUD would like to have the following details related to the electrical infrastructure incorporated into the project description:

5-2

- SMUD has existing overhead/underground facilities at various locations within the project area that will need to remain or be relocated at developer expense, these include, but are not limited to the following parcels:
  - APN 116-0030-075: Overhead and underground 12kV facilities on E. Stockton and serving customer parcel.
  - APN 116-0022-002: Overhead and underground 12kV facilities on E. Stockton and serving customer parcel. Underground 12kV facilities along entirety of southern parcel border.
  - APN 116-0030-053: Portion of this parcel included in study area has underground 12kV facilities along E Stockton and serving customer parcel.

SMUD would like to be involved with discussing the above areas of interest as well as discussing any other potential issues. We aim to be partners in the efficient and sustainable delivery of the proposed Project. Please ensure that the information included in this response is conveyed to the Project planners and the appropriate Project proponents.

Environmental leadership is a core value of SMUD, and we look forward to collaborating with you on this Project. Again, we appreciate the opportunity to provide input on this Project. If you have any questions regarding this letter, please do not hesitate to contact me at 916.732.5384, or by email at Amy.Spitzer@smud.org.

Sincerely,

Amy Spitzer
Environmental Services Specialist
Sacramento Municipal Utility District
6201 S Street
Sacramento, CA 95817

cc: Entitlements

Comment 5 Response: Amy Spitzer, SMUD, December 5, 2022

The City thanks the District for its comment letter. The following are the City's responses to each of the comments.

5-1 The proposed impacts to utilities are discussed within Chapter 3 Section XIX Utilities and Service Systems of the IS/MND. If deemed necessary, coordination with SMUD will be initiated as the Project moves into final design. Impacts relating to Energy and Climate Change are discussed within Chapter 3 Sections VI and VIII respectively.

5-2 As described in Chapter 3 Section XIX Utilities and Service Systems, the Project will not impact any overhead or underground SMUD facilities. However, the City will coordinate with SMUD if final design of the Project will result in any impacts to SMUD utilities.