Draft Initial Study / Proposed Mitigated Negative Declaration

Stockton San Joaquin River Pipeline Remediation

Stockton, San Joaquin County, California





Prepared for:

City of Stockton
Municipal Utilities Department
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Stockton, CA 95206

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List of Acronyms and Abbreviations

AB	Assembly Bill
ABAG	Association of Bay Area Governments
APE	Area of Potential Effect
APN	Assessor's Parcel Number
BAAQMD	Bay Area Air Quality Management District
BMPs	best management practices
C/CAG	City/County Association of Governments
CAAQS	California ambient air quality standards
CAFE	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
Cal/OSHA	California Division of Occupational Safety and Health
CALGreen	Title 24 California Green Building Standards
CAP	Clean Air Plan
CARB	California Air Resources Board
CASQA	California Stormwater Quality Association
CBC	California Building Code
CCR	California Code of Regulations

CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CHRIS	California Historical Information System
City	City of Stockton
County	San Joaquin County
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalent
Corps	United States Army Corps of Engineers
CPA	California Power Authority
CPUC	California Public Utilities Commission
CRHR	California Register of Historic Resources
CWA	Clean Water Act
CY	cubic yards
C&D	construction and demolition
dB	decibel
dBA	A-weighted sound level
DBH	diameter at breast height
DOE	Department of Energy
DOT	Department of Transportation
DPM	diesel particulate matter
DPS	Distinct Population Segment
DTSC	Department of Toxic Substances Control
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone
FIRM	Federal Insurance Rate Maps
FMMP	Farmland Mapping and Monitoring Program
GHG	greenhouse gas
HHDT	Heavy-Duty Trucks
IPac	Information for Planning and Consultation
kWh	kilowatt-hour
lb	pound
L_{dn}	day-night average noise level
L_{eq}	energy-equivalent noise level
L_{max}	maximum noise level
LRA	Local Responsibility Area
LUST	leaking underground storage tank
MBTA	Migratory Bird Treaty Act
MND	Mitigated Negative Declaration
MOTI	Muwekma Ohlone Tribe Incorporated

mpg	miles per gallon
MRP	Municipal Regional Stormwater NPDES Permit
MS4s	Municipal Separate Storm Sewer Systems
MT	metric tons
NAAQS	National Ambient Air Quality Standard
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NFHL	National Flood Hazard Layer
NMFS	National Marine Fisheries Service
NO_x	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
O_3	ozone
PG&E	Pacific Gas and Electric Company
PM	particulate matter
$PM_{2.5}$	fine particulate matter
PM_{10}	respirable particulate matter
PPV	peak particle velocity
PRC	Public Resources Code
Rank	California Rare Plant Rank
RCRA	Resource Conservation and Recovery Act
ROG	reactive organic gas
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SJMSHCP	San Joaquin County Multi-Species Habitat Conservation and Open Space Plan
SO_x	sulfur oxide
SRA	State Responsibility Area
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TCE	trichloroethylene
TCP	Traffic Control Plan
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VOC	volatile organic compound
WRA	WRA, Inc.
RWCF	Regional Wastewater Control Facility

1.0 INTRODUCTION AND PURPOSE

This Initial Study of environmental impacts is being prepared to conform to the requirements of the California Environmental Quality Act (CEQA), the CEQA Guidelines (California Code of Regulations 15000 et. seq.), and the regulations and policies of the City of Stockton. This Initial Study evaluates the potential environmental impacts which might reasonably be anticipated to result from implementation of the Stockton San Joaquin River Pipeline Remediation Project (proposed Project).

The City of Stockton is the Lead Agency under CEQA and has prepared this Initial Study to address the impacts of implementing the proposed Project. The purpose of the Project is to bring the cover depth of an underground pipeline into compliance with state and federal regulations.

2.0 PROJECT INFORMATION

2.1 Project Title

Stockton San Joaquin River Pipeline Remediation Project

2.2 Lead Agency Name and Address

City of Stockton, Municipal Utilities Department
2500 Navy Drive
Stockon, CA 95206

2.3 Contact Person and Phone Number

Ana Chiono, Project Manager
City of Stockton, Municipal Utilities Department
2500 Navy Drive
Stockton, CA 95206
Ana.chiono@stocktonca.gov
(209) 937-5650

2.4 Project Location

The Project site is located in the City of Stockton (City), within a portion of the City's Regional Wastewater Control Facility (RWCF) located at 2500 Navy Drive (Assessor's Parcel Number 163-33-003) that spans both sides of the San Joaquin River (river). The Project site includes a staging pad and landside shoreline facilities near the eastern riverbank, and a State Lands Commission (SLC) lease area within the river, where a buried RWCF pipeline used for the occasional diversion of wastewater flows crosses the riverbed to facility facultative ponds on the west side of the river (Figure 1).



Path: L:\Acad 2000 Files\330000\330314\GIS\ArcMap\330314Base.aprx Layout Name:CEQA_Fig1_Project Site Regional Location Map

Sources: National Geographic, WRA | Prepared By: njander, 3/7/2025

Figure 1. Project Site Regional Location

Stockton San Joaquin River Pipeline Remediation Project

Stockton, California

0 0.25 0.5 Miles

N

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Path: L:\Acad 2000 Files\330000\330314\GIS\ArcMap\330314Base.aprx Layout Name: CEQA_Fig2_Aerial Photograph

Sources: USDA NAIP Imagery 2022, WRA | Prepared By: njander, 1/21/2025

Figure 2. Aerial Photograph of the Project Site

Stockton San Joaquin River Pipeline Remediation Project

Stockton, California

0 200 400 Feet

N

wra Environmental Consultants

2.5 Existing General Plan Designation and Zoning District

The area of the Project site outside of the San Joaquin River has a General Plan land use designation of Institutional and a zoning designation of Public Facilities (PF).

2.6 Surrounding Land Uses and Setting

The Project site is immediately adjacent to and partially includes the RWCF. There are also residential uses to the east, mixed commercial and industrial uses immediately to the west, the San Joaquin River Railroad Bridge and other industrial uses to the north, a mixture of vacant and industrial land to the west, and vacant land in addition to the French Camp Slough to the south.

3.0 PROJECT DESCRIPTION

3.1 Existing Setting

The Project is located within the City on the south side of the City's RWCF and south of Navy Drive (Figure 2). The RWCF is adjacent to the San Joaquin River and covers a total of approximately 690 acres, including two buried pipelines within SLC lease areas across the river bottom. The RWCF is the City's primary facility for wastewater, treating up to 55 million gallons of water per day (gpd) before discharging it to the river. Sources of wastewater in the service area are primarily domestic but also include commercial and industrial connections. The RWCF currently operates under a National Pollutant Discharge Elimination System (NPDES) permit issued by the U.S. Army Corps of Engineers (USACE) and thus subject to the USACE's Nationwide Permit Requirements and 33 CFR Part 330, specific to regional conditions in the State of California and the USACE's Sacramento District. The City renewed its NPDES permit on June 20, 2025, which is valid until July 31, 2030. The facility's structures, connections, and other equipment have been upgraded multiple times since 2014.

RWCF structures are situated on both the eastern and western banks of the river, connected via a bridge south of the Project area and two submerged pipelines running from the main RWCF (east of the river) to RWCF ponds (west of the river). An approximate 350-foot long 36-inch pipeline, connected to the RWCF to the east and pump station to the west of the river is located within a 50-foot-wide SLC lease area. East of and parallel to the 36-inch pipeline is the 60-inch effluent pipeline main within a separate 100-foot-wide SLC lease area, connected by crossing access structures on both sides of the river. This 100-foot- wide lease area also contains an outfall structure for tertiary treated effluent. Effluent storage occurs on the west side of the river and tertiary treatment occurs on the east side. The 36-inch pipeline is used for occasional diversion of flows while most of the diversions occur via the 60-inch pipeline.

The SLC lease specifies that the 36-inch pipeline be maintained with a minimum 5-foot native riverbed material cover depth; however, river scour over time has caused a reduction of this cover in a portion of the pipeline crossing. In some locations, the cover has been reduced from the required 5-foot depth to approximately 1-foot depth. As a result, the pipeline no longer meets the lease burial depth criterion.

3.2 Detailed Description of Proposed Project

The City of Stockton proposes improvements to bring the cover depth of the 36-inch pipeline into compliance with state and federal regulations where the minimum cover is currently less than 5 feet. The total Project site is 16.55 acres and the remediation area within the river is approximately 4,703 square feet (0.11 acre).

The proposed Project shall involve both in-water and terrestrial work, including grading on the landside of the levee, dredging/excavation of the channel bed above and around the pipeline, and the addition of gravel and rip rap fill above and around the pipeline. Approximately 115 cubic yards (CY) of existing natural cover above and around the pipeline will be excavated and replaced with approximately 192 CY of riprap and approximately 10 CY of clean gravel fill. The gravel fill will cover approximately 435 square feet in the area immediately around the pipeline, while the rip rap fill will be used as both pipeline cover and backfill to match the existing grade

of excavated natural material at the river bottom. The depth of fill will vary within the remediation area above the pipeline, ranging from -18 feet to -14 feet on the channel bottom. Multiple keyways will be added to augment structural stability of the riprap. The total area of fill on the channel bed is approximately 4,703 square feet (0.11 acres).

An excavated pad with curb and gutter improvements northeast of the pipeline will serve as the staging area for construction equipment, stockpiling, and turnaround. The staging area will be accessed via existing plant roadways entering from Highway 4 and/or Navy Drive (Figure 3). Material and equipment delivery will be via a graded ramp to the levee crown on the north side of the river. Any necessary grading for the staging area and crane pad will be limited to the land side of the levee. A clamshell dredging process using a crane with clamshell attachments or a long reach excavator will excavate the existing natural cover necessary for the substrate repairs, while a crane or long reach excavator will also place the gravel and riprap fill through the water column to the channel bed. Suction dredging may also be utilized within the channel to remove existing material, subject to agency approval.

Portable barges will transport cut and fill material between the staging area and the in-channel work site. Dredged materials will be dewatered by decanting within the river channel or within the landside staging area. Dredged materials will be placed in containers on the portable barges and then ferried back to the loading area along the levee. Here containers will be unloaded from the barge onto the levee top, and their contents then emptied into the level staging area to dry. Rip rap fill materials will be loaded from the staging area, placed on the portable barges with a crane and ferried back to the work area to be placed over the pipeline via a crane with clamshell attachment or a long reach excavator.

Water quality protections during construction activities will include spill prevention and containment measures on the barges, including sorbent mats, spill kits, brooms, buckets, and other equipment as necessary; a Stormwater Prevention Plan (SWPPP) and Best Management Practices (BMPs) for earthwork areas including the use of fiber rolls and/or silt fences as needed; a Spill Prevention, Control, and Countermeasures Plan (SPCC Plan) for equipment operating near the water; and non-structural measures, such as qualified and trained personnel, good housekeeping, and documented emergency procedures. Silt curtains will also be placed around the work site within the water to limit any construction-generated turbidity to the immediate work area.

Project related construction activities are expected to begin in the summer of 2027, with an estimated total construction window of six to seven weeks: three weeks to construct the staging area, access pad and ramp; one week for dredging; one week for rip rap placement and up to two weeks for removal of the access pad and ramp after the in-water work is completed. An in-water work window of August 1 to November 30 will be implemented to avoid and minimize potential effects from construction to aquatic species in the San Joaquin River.

3.3 Use of This Initial Study/Mitigated Negative Declaration

This IS/MND has been prepared by the City to evaluate the potential environmental impacts resulting from the proposed Project to remediate a wastewater pipeline crossing on the bed of the San Joaquin River. Best practices are assumed for the protection of biological resources and cultural resources, both adjacent to and within the Project area. Upon adoption of the IS/MND and any mitigation measures to minimize environmental impacts, the applicable permitting

agencies will review the design plans and environmental analysis to determine if any additional modifications to the Project design and/or mitigation measures are necessary.

3.4 Project-Related Approvals, Agreements, and Permits

The information contained in this IS/MND will be used by the City (the CEQA Lead Agency) as it considers whether to approve the proposed Project. If the Project is approved, the analysis and proposed mitigation measures within the IS/MND would be used by the City to obtain the necessary construction and environmental protection permits to carry out the Project. For the proposed Project, these approvals and permits include, but may not be limited to, the following:

- California Department of Fish and Wildlife Streambed Alteration Agreement
- Central Valley Flood Protection Board Encroachment Permit
- U.S. Army Corps of Engineers Rivers and Harbors Act Section 408 Review and/or Categorical Permission
- U.S. Army Corps of Engineers RHA Section 10 and Clean Water Act Section 404 Authorization
- Endangered Species Act (ESA) Section 7 and Magnuson-Stevens Fisheries Conservation Act (MSFCA) Essential Fish Habitat (EFH) Consultations
- San Joaquin County Multi-Species Habitat Conservation Plan Application for Coverage
- National Pollutant Discharge Elimination System Permit
- Regional Water Quality Control Board Section 401 Water Quality Certification
- Reclamation District 404 Encroachment Permit
- State Lands Commission Application for Use of Lands

Additional approvals by the agencies listed above, and potentially other agencies, may be required for future remediation activities associated with the Project site. Such approvals may include updated design plans, biological studies, and cultural resources studies.

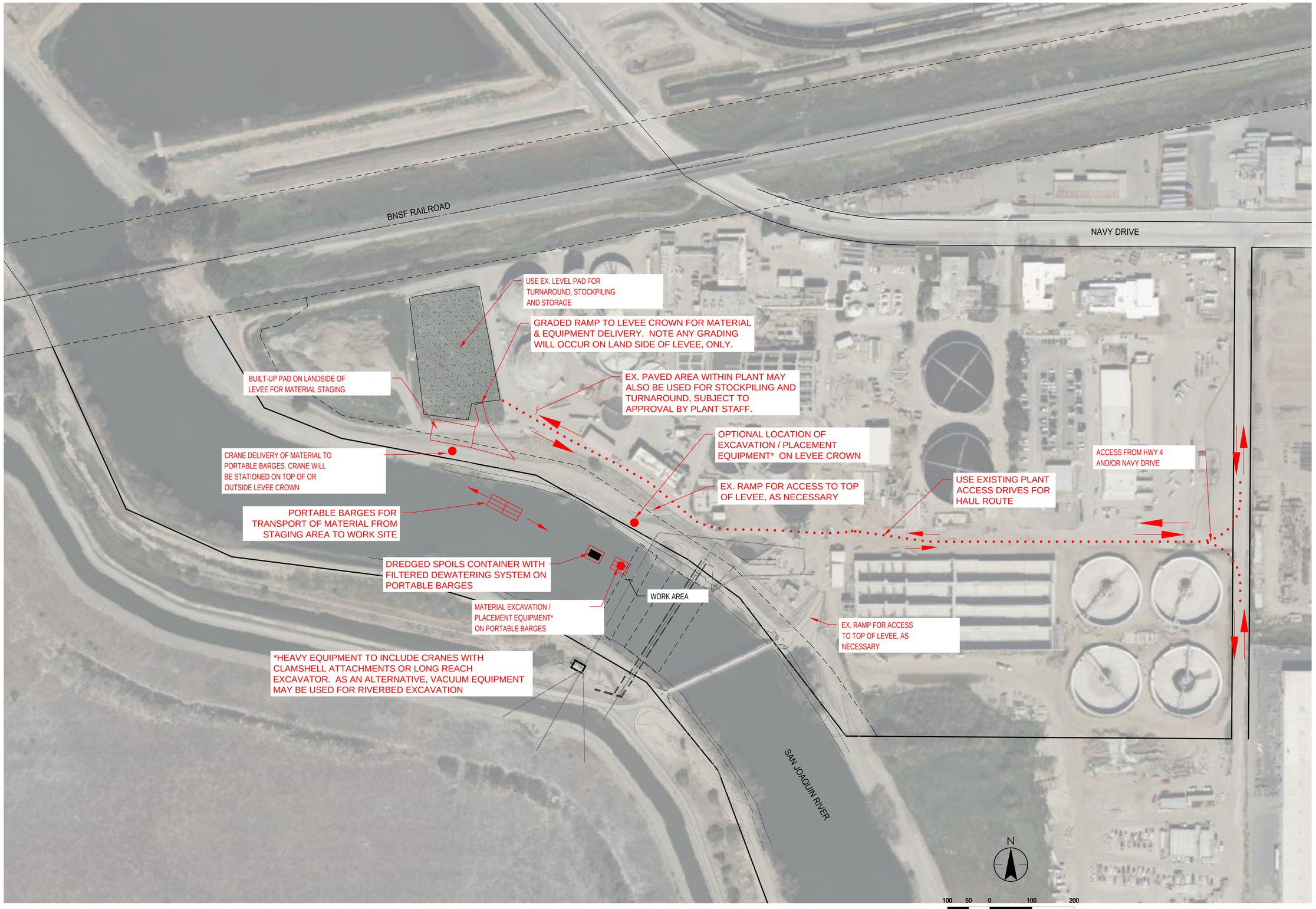


Figure 3. Preliminary Access and Staging Plan

CONSULTING ENGINEERS
430 10th Street
Modesto, CA 95354
Tel.: 209.568.4477
Fax: 209.568.4478

The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawings. Any errors or discrepancies shall be reported to WHCE before proceeding with the work affected. Copyrights to all designs and drawings are the property of WHCE. Reproduction or publication by any method, in whole or part, is prohibited. Title to all plans and drawings remain with WHCE. In the event of publication by others, the following shall be added: "Reproduced from copyrighted work by permission of WHCE." These drawings shall not be used for construction until sealed, signed and dated by the Engineer.

No.	M/D/Y	Description	By	Appd.

Revision

Client/Project
CITY OF STOCKTON
SAN JOAQUIN RIVER PIPELINE CROSSING
COVER REMEDIATION PROJECT
STOCKTON, CALIFORNIA

Title
ACCESS AND STAGING PLAN

Engineer's Seal

Engineer's Signature:
Signature Date:

811
Know what's below.
Call before you dig.

Project Engineer: ROB CHRISTENSEN
Project Number: 1287-0100
File Name: 20251010_prelim_access

JVP	RFC	RFC	12.18.24
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1 of 1 sheets

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ORIGINAL SHEET – ARCH D

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is potentially significant unless mitigation is incorporated, as indicated by the checklist on the following pages.

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

3.5 Determination

On the basis of this initial evaluation:

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

☒ I find that although the 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 Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the 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 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.

Ana Chiono — 6/18/26

Signature **Date**

Name and Title: Ana Chiono, P.E., Associate Engineer

3.6 Initial Study Checklist

This section describes the existing environmental conditions in and near the Project Area and evaluates environmental impacts associated with the proposed Project. The environmental checklist, as recommended in the CEQA Guidelines (Appendix G), was used to identify environmental impacts that could occur if the proposed Project is implemented. The right-hand column in the checklist lists the source(s) for the answer to each question. The cited sources are identified at the end of this section.

Each of the environmental categories was fully evaluated, and one of the following four determinations was made for each checklist question:

> **"No Impact"** means that no impact to the resource would occur as a result of implementing the Project.
>
> **"Less-than-Significant Impact"** means that implementation of the Project would not result in a substantial and/or adverse change to the resource, and no mitigation measures are required.
>
> **"Less-than-Significant Impact with Mitigation Incorporated"** means that the incorporation of one or more mitigation measures is necessary to reduce the impact from potentially significant to less than significant.
>
> **"Potentially Significant Impact"** means that there is either substantial evidence that a Project-related effect may be significant, or, due to a lack of existing information, could have the potential to be significant.

3.6.1 Aesthetics

Would the project:		*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*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 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?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

The Project site is located in the City of Stockton and consists of a portion of the RWCF and a buried pipeline within the San Joaquin River. The site is surrounded by industrial and institutional uses associated with the RWCF. The San Joaquin River Railroad Bridge is further north of the Project site, and French Camp Slough is south of the river. A photograph of an existing view of the Project site is shown in Figure 4.

REGULATORY SETTING

City of Stockton General Plan

The City's General Plan contains the following relevant policies related to aesthetics:

- Policy LU-3.1: Ensure that exterior remodels and the siting, scale, and design of new development are compatible with surrounding and adjacent buildings, public spaces, and cultural and historic resources.
- Policy LU-5.2: Protect natural resource areas, fish and wildlife habitat, scenic areas, open space areas, agricultural lands, parks, and other cultural/historic resources from encroachment or destruction by incompatible development.
- LU-6.3: Ensure that all neighborhoods have access to well-maintained public facilities and utilities that meet community needs and support public health and safety.



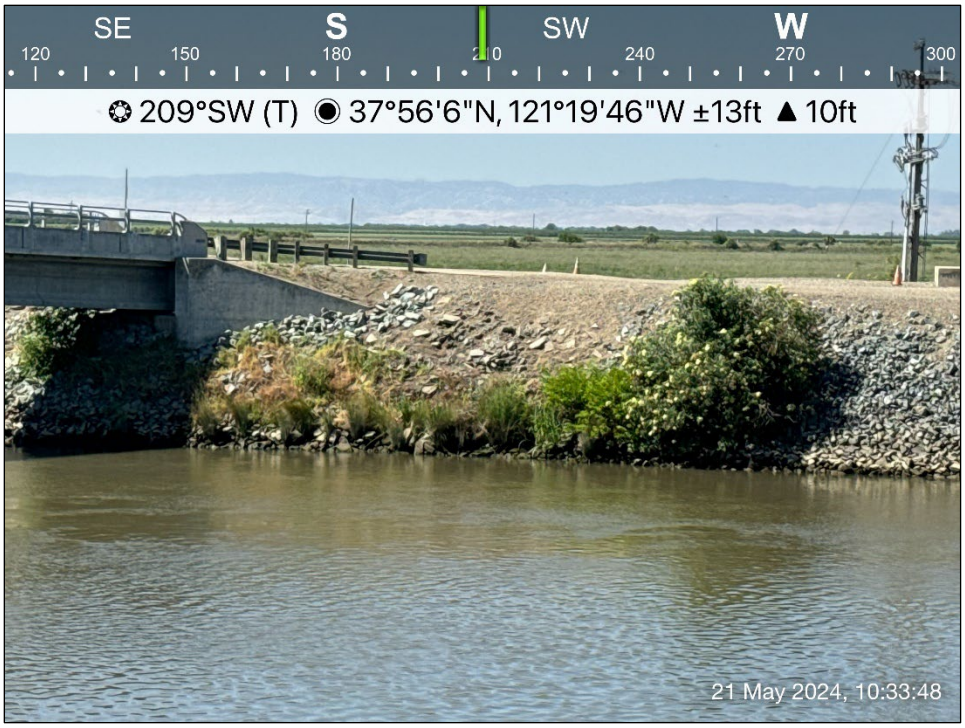


Figure 4. Existing View Photographs

Stockton San Joaquin River Pipeline Remediation Project

Stockton, California

wra Environmental Consultants

DISCUSSION OF IMPACTS

a) Have a substantial adverse effect on a scenic vista?

Less-than-Significant Impact

Under CEQA, scenic vistas are those that can be seen from public locations and include valleys, mountain ranges, and large bodies of water. The Project site includes a portion of the San Joaquin River. During construction, views of the river may be partially obstructed by equipment such as cranes, barges, and haul trucks. These effects will be temporary during construction and therefore would not be significant. Operation of the Project is limited to the addition of natural cover over a wastewater pipe that crosses the river bottom; therefore, no views of the Project site would be impacted by the Project. Operational conditions of the Project would remain similar to existing conditions with regard to views of the Project site. Therefore, the Project would not have a substantial adverse effect on a scenic vista. The impact would be ***less than significant***.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Less-than-Significant Impact

The nearest eligible state scenic highways are portions of State Route 4 and State Route 160, each of these highway segments is more than 20 miles away from the Project site. The Project site is not visible from any portion of the eligible segments of State Route 4 or State Route 160 due to regional topography and development. The impact would be ***less than significant***.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less-than-Significant Impact

The Project site is located in the urbanized area of the City of Stockton, however, there are no urban uses immediately adjacent to the Project site. The Project would not conflict with applicable zoning or other regulations governing scenic quality because the Project would not change the existing land use of the Project site. The Project would replace the cover over a portion of a wastewater pipe buried in the San Joaquin River, which would not conflict with any allowances of the Institutional land use designation or Public Facilities zoning district. Project activities during construction may temporarily degrade public views near the river due to the presence of construction equipment. However, as the current use of the site is industrial, the presence of heavy equipment would not present a significant change from existing conditions. Additionally, once construction is finished, publicly available views of the Project site would be similar to pre-Project views of the site. Therefore, the Project would not substantially degrade the existing visual character or quality of public views of the site, or conflict with applicable zoning and other regulations governing scenic quality. The impact would be ***less than significant***.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No Impact

The Project would not create a new temporary or permanent source of substantial light or glare. The Project would not require nighttime lighting during construction, as all construction work would be conducted during the day. During Project operation, the fill within the San Joaquin River would be completely within in the river, and thus no new source of light or glare would be created. ***No impact*** would occur.

3.6.2 Agricultural and Forestry Resources

Would the project:		*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*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?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

The Project site is located in a developed area in the City of Stockton. The Project site and adjacent areas have been mapped as Urban Built-Up Land in the Farmland Mapping and Monitoring Program by the California Department of Conservation (DOC) (DOC 2025).

DISCUSSION OF IMPACTS

a-e) 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? Conflict with existing zoning for agricultural use, or a Williamson Act contract? 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))? Result in a loss of forest land or conversion of forest land to non-forest use? 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?

No Impact

There is no Farmland, forest land, or timberland located in the Project area. The Project site is mapped by the DOC as Urban and Built-Up Land. Project activities will be limited to the RWCF and San Joaquin River. ***No impact*** would occur.

3.6.3 Air Quality

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

Would the project:	*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*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 in 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) affecting a substantial number of people?	☐	☐	☒	☐

ENVIRONMENTAL SETTING

The Project site is located within the San Joaquin Valley Air Basin (SJVAB), which is comprised of eight counties, including Fresno, Kern (western and central), Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. Topographic and meteorological conditions unique to the area trap these particulates and generate high levels of unhealthy air in the region. The San Joaquin Valley Air Pollution Control District (Air District) oversees plans and control measures to address air pollution, primarily from stationary sources such as industry and power plants (General Plan, 2018).

REGULATORY SETTING

Envision Stockton 2040 General Plan

The City's General Plan contains multiple policies with the goal of improving air quality. Action SAF-4.1A requires the implementation of best practices that reduce air pollutant emissions, the use of low-emission and well-maintained construction equipment with idling time limits, and the development of a dust control plan during construction. Action SAF-41C requires the use of electric-powered construction and landscaping equipment when appropriate.

San Joaquin Valley Air Pollution Control District

The Air District is responsible for developing plans and implementing control measures in the San Joaquin Valley Air Basin set by the U.S. Environmental Protection Agency (EPA). A tiered approach is recommended by the Air District to screen for significant impacts. The Air District has established thresholds of significance for criteria pollutant emissions, which are based on the

Air District's New Source Review offset requirements for stationary sources. Using the project type, size, and number of vehicle trips, the Air District has pre-quantified emissions and determined values below which it is reasonable to conclude that a project would not exceed applicable thresholds of significance for criteria pollutants. Projects up to specified project sizes and below both of the corresponding non-Heavy-Duty Trucks (HHDT) and HHDT trip lengths are deemed to have a less-than-significant impact on air quality, and as such are excluded from quantifying criteria pollutant emissions for CEQA purposes.

DISCUSSION OF IMPACTS

a) Conflict with or obstruct implementation of the applicable air quality plan?

No Impact

The City's General Plan has incorporated regulations that align with the Air District's plans and control measures to address air pollution. The Project site is a public facility in the City; therefore, Project activities would be subject to these regulations. The Project would not disrupt or hinder implementation of any control measures and would be consistent with applicable measures of the Air District or General Plan. Estimated construction emissions of the Project would not exceed the numerical significance thresholds discussed under Impact b) below. Therefore, Project implementation would not conflict with the Air District's air quality plan. The impact would be ***less than significant***.

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?

Less-than-Significant Impact

The Project area is approximately 16.55 acres (720,918 square feet) in total. As an industrial Project, the pre-quantified emissions value applied to Project activities is an average daily one-way trip for all fleet types of 550 or less, and an average of 70 daily one-way trips for HHDTs, limited to a fifty-mile trip length. During construction activities, a maximum of 17 truck trips would be needed to transport the cover which would be placed within the river. In addition to HHDT trips, vehicle trips to transport approximately 10 construction workers to and from the stie each day would be required during Project construction activities. There would be no additional HHDT or non-HHDT trips during Project operation. Thus, as the HHDT trips and non-HHDT trips would be below the applicable Air District's thresholds, impacts related to air quality and criteria pollutants would be ***less than significant***.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less-than-Significant Impact

Haul trucks and other equipment associated with construction activities generate pollutants and will be used during Project implementation. The nearest sensitive receptors are approximately 0.5-mile south of the Project site on the southern side of Highway 4. However, the implementation of General Plan Action SAF-4.1A will limit the generation of pollutants during construction. Upon the completion of construction activities, the Project solely consists of the addition of cover over an underground pipeline within the San Joaquin River, thus there will be no operational pollutant generation. Impacts would be ***less than significant***.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less-than-Significant Impact

Construction activities would involve the use of gasoline- or diesel-powered equipment that emit exhaust fumes. These activities would take place intermittently throughout the workday and the associated odors are expected to dissipate within the immediate vicinity of the work area. People near the construction work area may find these odors objectionable; however, the Project would not include uses that have been identified as potential sources of objectionable odors.

There is a potential for odors to be released creating a temporary nuisance in the immediate vicinity of construction activities. During operation, no odor impacts associated with the underground pipeline would be expected, therefore the impact would be ***less than significant***.

3.6.4 Biological Resources

Would the project:		*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*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, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c)	Have a substantial adverse effect on state or federally protected wetlands (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?	☐	☐	☒	☐

METHODOLOGY

On May 28, 2024, WRA, Inc. (WRA) biologists conducted a survey within the Project site to map vegetation and unvegetated land cover types, document plant and wildlife species present, and evaluate on-site habitat for the potential to support special-status species as defined by CEQA.

The total Study Area for the survey was 29.97 acres, which encompasses the Project site and an additional buffer accounting for Project-related disturbance. Information and conclusions in this section are based on the Biological Resources Technical Report (BRTR) prepared by WRA, Inc. in March 2025 (Appendix B) (WRA 2025).

Prior to visiting the Project site, WRA biologists reviewed literature resources and performed database searches to assess the potential for sensitive biological communities and special-status species. Following the remote assessment, WRA biologists completed a field survey over the course of one day to document 1) land cover types, 2) aquatic resources, 3) existing conditions and to determine if such provide suitable habitat for any special-status plant or wildlife species, and 4) if special-status species are present.

Potential occurrence of special-status species in the Study Area was evaluated by first determining which special-status species occur in the vicinity of the Study Area through a literature and database review as described above. Presence of suitable habitat for special-status species was evaluated during the May 2024 site visit based on physical and biological conditions of the site, as well as the professional expertise of the investigating biologists. The potential for each special-status species to occur within the Study Area was then determined.

REGULATORY SETTING – FEDERAL AND STATE

Vegetation and Aquatic Communities

Sensitive Natural Communities

Sensitive natural communities include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. CDFW ranks sensitive communities as "threatened" or "very threatened" and keeps records of their occurrences in its California Natural Diversity Database (CNDDB). In addition, this general class includes oak woodlands that are protected by local ordinances under the Oak Woodlands Protection Act and Section 21083.4 of California Public Resources Code.

Waters of the United States

The USACE regulates “Waters of the United States” under Section 404 of the Clean Water Act. Waters of the United States, as defined by the Code of Federal Regulations, include territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, such as tributaries, lakes and ponds, impoundments of waters of the U.S., and wetlands that are hydrologically connected with these navigable features. Unvegetated waters including lakes, rivers, and streams may also be subject to Section 404 jurisdiction and are characterized by an ordinary high-water mark. The placement of fill material into Waters of the United States generally requires a permit from the USACE under Section 404 of the Clean Water Act.

The USACE also regulates construction in navigable waterways of the U.S. through Section 10 of the Rivers and Harbors Act of 1899 (33 U.S. Code [USC] 403). Section 10 of the Rivers and Harbors Act requires USACE approval and a permit for excavation or fill, or alteration or modification of the course, location, condition, or capacity of, any port, roadstead, haven, harbor, canal, lake, harbor or refuge, or enclosure within the limits of any breakwater, or of the channel of any navigable water of the United States.

Waters of the State

The term "Waters of the State" is defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." Waters of the State in the context of a CEQA Biological Resources evaluation include wetlands and other surface waters protected by the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (SWRCB 2019). The State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCB) issue permits for the discharge of fill material into surface waters through the State Water Quality Certification Program, which fulfills requirements of Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. Projects that require a Clean Water Act permit are also required to obtain a Water Quality Certification. If a project does not require a federal permit but does involve discharge of dredge or fill material into surface waters of the State, the SWRCB and RWQCB may issue a permit in the form of Waste Discharge Requirements.

Sections 1600-1616 of California Fish and Game Code

Streams and lakes, as habitat for fish and wildlife species, are regulated by CDFW under Sections 1600-1616 of CFGC. Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term "stream" broadly encompasses bodies of water that flow at least periodically or intermittently and supports fish or other aquatic life. Riparian vegetation has been defined as "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

Special-Status Species

Endangered and Threatened Plants, Fish and Wildlife

Specific species of plants, fish, and wildlife may be designated as threatened or endangered by the Federal Endangered Species Act (ESA), or the California Endangered Species Act (CESA). Specific protections and permitting mechanisms for these species differ under each of these acts, and a species' designation under one law does not automatically provide protection under the other.

The ESA (16 USC 1531 et seq.) is implemented by the USFWS and the National Marine Fisheries Service (NMFS), both of which maintain lists of "endangered" and "threatened" plant and animal species (referred to as "listed species"). Under the ESA, authorization must be obtained from the USFWS or NMFS prior to the take of any listed species. "Take" under the ESA includes direct injury or mortality to individuals, disruptions in normal behavioral patterns resulting from factors such as noise and visual disturbance and impacts to habitat for listed species. Actions that may result in "take" of an ESA-listed species may obtain a permit under ESA Section 10, or via the interagency consultation described in ESA Section 7. Federally listed plant species are only protected when take occurs on federal land.

The ESA also provides for designation of critical habitat, which are specific geographic areas containing physical or biological features "essential to the conservation of the species." Protections afforded to designated critical habitat apply only to actions that are funded, permitted, or carried out by federal agencies.

The CESA (California Fish and Game Code (CFGC) 2050 et seq.) prohibits the "take" of any plant and animal species that the California Fish and Game Commission determines to be an endangered or threatened species in California. CESA regulations include take protection for threatened and endangered plants on private lands, as well as extending this protection to "candidate species" which are proposed for listing as threatened or endangered under CESA. The definition of a "take" under CESA only applies to direct impact to individuals and does not extend to habitat impacts or harassment. The CDFW may issue an Incidental Take Permit under CESA to authorize take if it is incidental to otherwise lawful activity and if specific criteria are met. Take of these species is also authorized if the geographic area is covered by a Natural Community Conservation Plan (NCCP), if the NCCP covers that activity. CDFW may also authorize take for voluntary restoration projects through the Restoration Management Permit.

Fully Protected Species and Designated Rare Plant Species

This category includes specific plant and wildlife species that are designated in the CFGC as protected even if not listed under CESA or the ESA. Fully Protected Species includes specific lists of birds, mammals, reptiles, amphibians, and fish designated in the CFGC. Fully protected species may not be taken or possessed at any time. No licenses or permits may be issued for the take of fully protected species, except for necessary scientific research and conservation purposes. The definition of "take" is the same under the CFGC and the CESA.

Special Protections for Nesting Birds and Bats

The federal Bald and Golden Eagle Protection Act provides relatively broad protections to both of North America's eagle species (bald [*Haliaeetus leucocephalus*] and golden eagle [*Aquila chrysaetos*]) that in some regards are like those provided by the ESA. In addition to regulations for special-status species, most native birds in the U.S., including non-status species, have baseline legal protections under the Migratory Bird Treaty Act of 1918 (MBTA) and CFGC, i.e., Sections 3503, 3503.5 and 3513. Under these laws/codes, the harm or collection of adult birds as well as the collection or destruction of active nests, eggs, and young is illegal. For bat species, the Western Bat Working Group designates conservation status for species of bats, and those with a high or medium-high priority are typically given special consideration under CEQA (Western Bat Working Group 2024).

Species of Special Concern, Movement Corridors, and Other Special-Status Species under CEQA

A Species of Special Concern is a species formally designated by CDFW which meet one or more criteria related to federal ESA status (if it is not listed under CESA), extirpation from California, documented population declines, or small population size within California and risk of declines. Section 15280 of the CEQA Guidelines states that species of special concern must be included in project impact analyses. In addition, CDFW has developed a special animals list as "a general term that refers to all of the taxa the CNDDB is interested in tracking, regardless of their legal or protection status." This list includes lists developed by other organizations, including for example, the Audubon Watch List Species, the Bureau of Land Management Sensitive Species, and USFWS Birds of Special Concern. Plant species on the California Native Plant Species (CNPS) Rare Plant Inventory (Inventory; CNPS 2023) with California Rare Plant Ranks (Rank) of 1 and 2, as well as some with a Rank of 3 or 4, are also considered special-status plant species and must be considered under CEQA. Some Rank 3 and Rank 4 species are typically only afforded protection under CEQA when such species are particularly unique to the locale (e.g., range limit, low abundance/low frequency, limited habitat) or are otherwise considered locally rare. Additionally, any species listed as sensitive within local plans, policies and ordinances are likewise considered

sensitive. Movement and migratory corridors for native wildlife (including aquatic corridors) as well as wildlife nursery sites are given special consideration under CEQA.

REGULATORY SETTING – LOCAL

City of Stockton General Plan

The City's General Plan contains policies pertaining to the following biological resources categories:

- Wetlands, streams, riparian, and aquatic areas (Policy LU-5.2, LU-6.2.)
- Vegetation communities (Policy LU-5.1, LU-5.2)

City of Stockton Tree Ordinance

The City of Stockton Tree Ordinance (Stockton Municipal Code 16.130) requires a permit for the removal of heritage trees from any parcel of property in the City. The Ordinance defines a "heritage tree" as:

1. Any valley oak (*Quercus lobata*), coast live oak (*Q. agrifolia*), or interior live oak (*Q. wislizenii*) with a diameter of 16 inches or more (measured 24 inches above grade).
2. For oak trees of the species above with multiple trunks, the combined trunk diameter shall be used for all trunks of six-inch diameter or greater.

The City may require mitigation for the removal of heritage trees as a condition of approval for a tree permit. Residential and commercial applicants are generally required to replace removed trees at a minimum ratio of three new trees for each heritage tree removed, with the size of replacement trees determined by the City based on the size of the tree that was removed. The size of each replacement would ultimately be determined by the City's Community Development Director.

The City of Stockton also defines "public trees" as all trees growing on any public property or public right-of-way owned by the City of Stockton, including boulevards, parks, playgrounds, dikes, parkways, streets, sidewalks, alleys and public parking lots. A permit is required prior to the removal, replacement, or relocation of a public tree. Replacements of public trees are generally required at a minimum ratio of one new tree for each public tree that was removed.

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSHCP) is a 50-year plan managed by San Joaquin County to balance open space conservation and conversion to other land uses such as development. Essentially, the SJMSHCP facilitates county-wide land use and mitigation planning and offers a streamlined permitting process for entities that impact listed species and require mitigation. The SJMSHCP holds permits from the USFWS and CDFW for certain activities that result in or may result in impacts to listed species, i.e. "incidental take." The SJMSHCP provides take authorization to various entities in exchange for a mitigation fee, which the SJMSHCP then uses to acquire and conserve lands to fulfill the mitigation obligations in a holistic and comprehensive way.

Permitted activities include urban development, mining, expansion of existing urban boundaries, non-agricultural activities occurring outside of urban boundaries, levee maintenance undertaken by the San Joaquin Area Flood Control Agency, transportation projects, school expansions, non-

federal flood control projects, new parks and trails, maintenance of existing facilities for non-federal irrigation district projects, utility installation, maintenance activities, managing Preserves, and similar public agency projects (SJCOG 2000).

The City of Stockton is a permittee of the SJMSCP and has opted for coverage under the SJMSHCP for incidental take of covered species associated with future urban growth within the City's service area. As such, the City is required to mitigate for project-related conversion of natural lands and special-status species through in-lieu fees, habitat land dedication, purchase of mitigation bank credits, or by proposing an alternative mitigation plan consistent with the goals of the SJMSHCP.

ENVIRONMENTAL SETTING

Vegetation Communities and Land Cover

WRA observed five land cover types within the Study Area: the San Joaquin River, mixed riparian woodland, Northern California walnut grove, and ruderal/developed areas. The non-sensitive land cover types in the Study Area include eucalyptus groves and ruderal/developed areas, while the sensitive communities include the San Joaquin River, mixed riparian woodlands, and Northern California walnut groves. These vegetative communities and land cover types are described in more detail in the following sections.

Eucalyptus Grove (*Eucalyptus [globulus, camaldulensis]* association)

One eucalyptus grove occurs along the eastern bank of the San Joaquin River in the southern portion of the Study Area, making up approximately 0.08 acres. Within the Study Area, the tree canopy is composed entirely of mature blue gum eucalyptus, with a sparse shrub layer of acacia (*Acacia* sp.) saplings. Eucalyptus groves are not classified as sensitive on their own (CDFW 2024a). However, the eucalyptus grove within the Study Area is classified as riparian woodland, where the individual trees are rooted below the top-of-bank (TOB). Riparian woodlands are separately considered sensitive by CDFW.

Ruderal/Developed Area (no vegetation alliance)

Approximately 9.19-acres of the Study Area is composed of ruderal and developed areas, including the levee roads and most of the levee banks. Gravel paving covers the levee roads, and rock riprap lines the steep levee slopes along the San Joaquin River. Jute netting has been placed along portions of the southern levee slope. This community is not considered sensitive by San Joaquin County, CDFW, or any other regulatory entity.

Mixed Riparian Woodland (no vegetation alliance)

Mixed riparian woodlands are characterized by trees and shrubs which are rooted below the TOB, or which overhang the TOB of the San Joaquin River. This land cover type covers 0.36 acres of the Study Area. Within the Study Area, the mixed riparian tree canopy is composed of blue elderberry, edible fig (*Ficus carica*), Gooding's black willow (*Salix gooddingii*), and boxelder (*Acer negundo*). Mixed riparian woodlands are considered sensitive by CDFW, and CDFW jurisdiction extends to the TOB or the edge of the riparian dripline.

Northern California Walnut Grove (*Juglans hindsii* and *Hybrids* woodland special stands and semi-natural alliance)

Northern California walnut (*Juglans hindsii*) groves cover 0.68 acres of the site and chiefly occur along the inboard levee slopes throughout the Study Area. This alliance is defined by the

dominance of northern California walnut trees in the canopy, with over 50 percent relative cover in the tree canopy (CNPS 2024). Within the Study Area, Northern California walnuts compose the entirety of the closed tree layer. Northern California walnut groves are classified as sensitive natural communities by CDFW (CDFW 2024a). Additionally, most of the northern California walnut groves in the Study Area are also classified as riparian woodlands, where the individual tree is rooted below the TOB.

AQUATIC RESOURCES

San Joaquin River (no vegetation alliance)

The San Joaquin River is a perennial waterway which conveys water flows throughout the entire year and experiences muted tidal action. This land cover type includes the open water of the San Joaquin River, mapped to the ordinary high-water mark. Within the Study Area, the San Joaquin River is unvegetated and covers 12.59 acres.

The San Joaquin River is tidally influenced within the Study Area and is recognized as a traditionally navigable waterway by the USACE Sacramento District (USACE 2024). The San Joaquin River is a jurisdictional aquatic resource subject to regulation by the USACE, RWQCB, and CDFW. The San Joaquin River is also mapped as Essential Fish Habitat (EFH) for groundfish and Chinook salmon (*Oncorhynchus tshawytscha*), as well as USFWS Critical Habitat for delta smelt (*Hypomesus transpacificus*) within the Study Area (NMFS 2024, USFWS 2024b).

SPECIAL STATUS SPECIES

Special-status Plants

Based on a review of literature and resources databases, 24 special-status plant species have been documented in the vicinity of the Study Area. All of these species are unlikely or have no potential to occur for one or more of the following reasons:

- The Study Area does not contain the necessary hydrologic, edaphic (soil), topographic, and pH conditions necessary to support the special-status species.
- Associated natural communities necessary to support the special-status species are not present within the Study Area.
- The Study Area is geographically isolated (e.g. below elevation, coastal environ) from the documented range of the special-status plant species;
- Land use history and contemporary management (e.g., grading, intensive grazing) has degraded the localized habitat necessary to support the special-status plant species.

Special-status Wildlife

Based on a review of literature and resource databases, 29 special-status wildlife species have been documented in the vicinity of the Study Area. Most of these species have no potential to occur in the Study Area based on a lack of habitat features that eliminate components critical to the survival or movement of most special-status species found in the vicinity. Features not found within the Study Area include:

- Vernal pools
- Mines, caves or abandoned buildings
- Broadleaf riparian trees

- Conifer forests or thick woodlands
- Freshwater emergent vegetation
- Presence of specific host plants
- Caves, mine shafts, or abandoned buildings

Fourteen special-status species have moderate to high potential to occur in the immediate vicinity of or in portions of the Study Area: long-eared myotis, Swainson's hawk, white-tailed kite, loggerhead shrike, northern harrier, northwestern pond turtle (NPT), green sturgeon, white sturgeon, steelhead – Central Valley Distinct Population Segment (DPS) (*Oncorhynchus mykiss irideus*), delta smelt, Central Valley spring-run Endangered Species Unit (ESU) Chinook salmon (*Oncorhynchus tshawytscha*), Chinook salmon – Sacramento River Winter-run ESU (*Oncorhynchus tshawytscha*), valley elderberry longhorn beetle (VELB), and Crotch's bumble bee.

DISCUSSION OF IMPACTS

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 Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS)?

Less-than-Significant Impact with Mitigation Incorporated

Special-status Plants

The Project site does not contain suitable habitat to support any special-status plant species. No special-status plant species were observed during the May 2024 site assessment conducted by WRA biologists. All 24 special-status plant species documented in the vicinity of the Project site are unlikely or have no potential to occur within the Project site due to the lack of habitat conditions necessary to support the species. Therefore, ***no impact*** to special-status plant species would occur as a result of the Project.

Special-status and Nesting Birds

Four special-status bird species, Swainson's hawk, northern harrier white-tailed kite and loggerhead shrike, may nest in trees within the Project site or in the immediate vicinity of the site. In addition to special-status nesting birds, common avian species, including great blue heron, may also nest within the Project site and may be similarly affected by Project activities. Grading and vegetation removal proposed within the Project footprint may directly impact the nests of protected species or may impact these species through visual and auditory disturbance sufficient to cause nest abandonment. Due to the protected status of these species under both the MBTA and CDFW, impacts to special-status and common native nesting birds would also be considered a **potentially significant impact** under CEQA. The Project would implement Mitigation Measures BIO-1 and BIO-2 to reduce impacts to special-status and nesting birds. Mitigation Measure BIO-1 requires pre-construction nesting bird surveys and no disturbance buffers for identified nests if Project work would occur within the nesting bird season from February 1-August 31. Mitigation Measure BIO-2 requires implementation of SJMSCP Incidental Take Minimization Measure (ITMM) 5.2.4.11, which requires that, if a nest tree becomes occupied during construction activities, all construction activities must remain a distance of two times the dripline of the tree, away from the nest. Implementation of these measures ensure impacts to Swainson's hawk, white-tailed kite, loggerhead shrike, northern harrier, and other native nesting birds would be reduced to a ***less-than-significant*** level.

Roosting Bats

One species of special-status bat species, long-eared myotis, may roost within large trees within the Project site. Tree removal and construction activity associated with the proposed Project could result in the direct removal of active bat roosts protected under the CFGC and CEQA. Due to the protected status of this species under the CFGC, impacts to special-status bats would also be considered a ***potentially significant impact*** under CEQA. The Project would implement Mitigation Measures BIO-03a and BIO-03b to reduce potential impacts to long-eared myotis. Mitigation Measure BIO-03a requires sealing of nursery and hibernation sites prior to the Project construction and prior to the hibernation season and adhering to work windows for the removal of nursery and hibernation sites. Mitigation Measure BIO-03b requires that removal and trimming of trees must occur outside of the bat maternity season. If this is not feasible, a bat roost assessment shall be conducted no more than 30 days prior to tree removal. If special-status bat species or maternity roosts are detected, the roost tree shall be protected by a no-disturbance buffer. Implementation of these measures would reduce impacts on special-status bats to a ***less-than-significant*** level.

Special-Status Bumblebees

One special-status bumblebee species, Crotch's bumblebee, has the potential to occur in the Project site. Grading activities within grassland habitat may result in the mortality of individuals and their nests. Given that this species is a state candidate, impacts to these species would be considered a ***potentially significant impact*** under CEQA. The Project would implement Mitigation Measure BIO-4, to reduce potential impacts to Crotch's bumblebee. Mitigation Measure BIO-4 requires a survey for Crotch's bumblebee prior to the commencement of construction activities during April 1 to October 31. If a special-status bumblebee is observed or if signs of a special-status bumblebee nest are observed, construction shall not commence until CDFW has provided further guidance, which may include an additional survey by a bumblebee expert. Implementation of this measure would reduce potential impacts to Crotch's bumblebee to a ***less-than-significant*** level.

Valley Elderberry Longhorn Beetle

The VELB has potential to occur within the Project area. Given that this species is federally threatened, impacts to these species would be considered a ***potentially significant impact*** under CEQA. Project-related activities may remove valley elderberry trees, depriving VELB of crucial habitat to complete their lifecycle. If any of the valley elderberry trees are occupied by VELB, then tree removal may result in the mortality of individuals. Mitigation Measure BIO-5a, discussed below, would be required to reduce this impact to a ***less-than-significant level***.

Northwestern Pond Turtle

Northwestern pond turtles have been documented to occur within eight miles of the Project site. As a federally threatened and CDFW Species of Special Concern, impacts to the Northwestern pond turtle would be ***potentially significant*** under CEQA. Project related activities may temporarily disrupt the San Joaquin River Corridor and surrounding wetlands, which the Northwestern pond turtle uses as aquatic foraging, dispersal habitat, and nesting habitat. The Project would implement Mitigation Measures BIO-6a, requiring a pre-construction survey; BIO-6b, establishing a buffer if nesting areas are identified; BIO-6c, an employee environmental awareness training program for construction personnel; and BIO-6d, which requires water quality

protections during construction. Each mitigation measure is discussed in further detail below, would be required to reduce this impact to a ***less-than-significant level***.

Steelhead, Chinook Salmon, White Sturgeon, Green Sturgeon, and Delta Smelt

Special-status fish including steelhead – Central Valley DPS, Central Valley spring-run ESU Chinook salmon, Central Valley winter-run ESU Chinook salmon, green sturgeon, white sturgeon and delta smelt have potential to occur in the San Joaquin River. Impacts to special-status salmonids and other species would be ***potentially significant*** under CEQA, CESA, and the ESA. The installation of infrastructure along the San Joaquin River and Project activities in or adjacent to aquatic habitat, including vegetation removal, excavation, dredging, gravel and rip rap fill placement could directly impact special-status salmonids and other species, if present. Impacts could include direct removal of fish, mortality or injury via crushing or entombment, and adverse impacts to water quality. No spawning of adult green sturgeon is known to occur in the San Joaquin River, and observations of this species are very rare, therefore impacts to this species are not anticipated. The Project would implement Mitigation Measure BIO-6d, establishing procedures for water quality protection during construction activities, the development of a SWPPP and BMPs for earthwork, and BIO-07 which identifies an in-water work window during which time delta smelt and salmonids have lower potential to occur would be required to reduce impacts to special-status fish species. Each mitigation measure is discussed in further detail below, and would be required to reduce this impact to a ***less-than-significant level***.

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 CDFW or USFWS?

Less-than-Significant Impact with Mitigation Incorporated

The Project is anticipated to result in direct impacts to Northern California walnut groves and mixed riparian woodland. Permanent impacts would include tree removals, while temporary impacts may include dripline encroachment and pruning. The Project impacts are not quantifiable at this time, but some removals of riparian trees and northern California walnut trees are likely to result from Project activities. Impacts to riparian vegetation are under jurisdiction of CDFW per Section 1602 of the CFGC, and CDFW jurisdiction extends to the TOB or the edge of riparian dripline, whichever is greater. Due to the sensitive status of Northern California walnut groves and riparian woodlands, impacts would be considered a ***potentially significant impact*** under CEQA. The Project would implement the following Mitigation Measures to reduce a substantial adverse effect on any riparian habitat or other sensitive natural community: BIO-08a, which requires the Project proponent to obtain and comply with applicable permits and regulations regarding public trees; and BIO-08b, which requires native tree replacement along stream channels. Each mitigation measure is discussed in further detail below and would be required to reduce this impact to a ***less-than-significant level***.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less-than-Significant Impact with Mitigation Incorporated

The Project is expected to result in temporary impacts to 0.30 acres and permanent impacts to 0.11 acres of San Joaquin River, which is a federal and state jurisdictional aquatic resource. Due to its status under the jurisdiction of the Army Corps of Engineers, RWQCB, and CDFW, impacts

to the San Joaquin River ***would be considered significant*** under CEQA. Potential Project components under consideration at the time of this report with temporary or permanent impacts include 1) dredging/excavation of the channel bed, 2) placement of gravel and rip rap fill and limited, short-term turbidity increases. Additionally, Project activities could result in indirect discharges to the San Joaquin River. The Project would implement Mitigation Measures: BIO-6d, which requires water quality related protections during construction; BIO-09, which requires the flagging of sensitive habitats and silt fencing prior to ground disturbing activities to reduce potential impacts to aquatic resources. With implementation of these measures, the Project would not have a substantial adverse effect on state or federally protected wetlands. The impact would be ***less-than-significant with mitigation incorporated.***

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?

Less-than-Significant Impact with Mitigation Incorporated

The Project site provides a migratory corridor for special-status fish including steelhead, spring-run and winter-run Chinook salmon, delta smelt and green sturgeon. The Project site is also designated critical habitat for delta smelt (USFWS 2008). The implementation of Mitigation Measure BIO-6 will restrict in-water work to the time period when delta smelt and out-migrating juvenile salmonids have no potential to occur, and green sturgeon is very unlikely to occur. Implementation of this measure will ensure that the Project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species. The impact would be ***less than significant with mitigation incorporated.***

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less-than-Significant Impact with Mitigation Incorporated

The Project was designed to avoid impacts to the extent feasible. No impacts to special-status plant species or wildlife movement corridors are anticipated as a result of the Project. Impacts to special-status wildlife species will be avoided or minimized through the implementation of Mitigation Measures BIO-01 through BIO-07. The Project would likely result in permanent and temporary impacts to Northern California walnut groves and mixed riparian woodlands. Permanent impacts would include tree removal and temporary impacts would include dripline encroachment and pruning. Mitigation Measures BIO-08 and BIO-09 would reduce impacts to trees and aquatic resources to a less-than-significant level. Therefore, the Project would not conflict with any policies of the General Plan or the SJMSHCP.

The City's Municipal Code provides protections for "heritage trees" and "public trees". There are several trees within the Project site which likely qualify as "heritage trees." Additionally, because the entire Project site is located on property owned by the City of Stockton, all trees within the Project site may be considered public trees under the tree ordinance. Under the Stockton Municipal Code Chapter 16.130, the City must send a notice to property owners and residents within 300 feet of the tree to be removed. The City must then accept comments for a 10-day review period and proceed with the decision if no request for a public hearing is received. If a request for a public hearing is received, the City would hold a hearing before deciding whether to remove the heritage tree. Therefore, the City would comply with local policies and ordinances regarding the removal of heritage and public trees.

The Project would implement Mitigation Measures BIO-01 through BIO-09 to mitigate impacts to special-status species, aquatic resources, and sensitive natural communities. With implementation of these measures, the Project would not conflict with any local policies or ordinances protecting biological resources. The impact would be ***less than significant with mitigation incorporated***.

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?

Less-than-Significant Impact with Mitigation Incorporated

The City of Stockton is a signatory to the SJMSCP. The SJMSHCP covers a total of 97 covered species, three of which have potential to occur in the Project site: Swainson's hawk, northwestern pond turtle and valley elderberry longhorn beetle.

Potential impacts to covered species will be mitigated by Mitigation Measures BIO-01 through BIO-05. Implementation of these mitigation measures will reduce potential impacts to covered species to a level that is ***less than significant***. Therefore, the Project will comply with the relevant policies of the SJMSHCP.

MITIGATION MEASURES

Mitigation Measure BIO-01. Nesting Birds

To the extent feasible, Project-related activities should be avoided during the nesting bird season, generally defined as February 1 – August 31. If Project work must occur during the nesting bird season, a pre-construction nesting bird survey shall be conducted by a qualified biologist within seven days of ground disturbance or vegetation removal to avoid disturbance to active nests, eggs, and/or young of nesting birds. Surveys shall be conducted in all potential nesting habitat located at, and adjacent to, Project work sites and in staging and storage areas.

If an active nest is located, a no disturbance buffer shall be established around the nest. Active nest sites and protective buffer zones shall be designated as "Environmentally Sensitive Areas" where no Project-related activities or personnel may enter until a qualified biologist determines that the young have fully fledged, or the nest otherwise becomes inactive (e.g., due to predation), and will no longer be adversely affected by the Project. Suggested buffer zone distances differ depending on species, existing conditions, and nest placement and shall be determined and implemented in the field by a qualified biologist.

Mitigation Measure BIO-02. Nesting Birds

The Project shall minimize impacts to nesting birds through the implementation of SJMSCP ITMM 5.2.4.11: If a nest tree becomes occupied during construction activities, then all construction activities shall remain a distance of two times the dripline of the tree, measured from the nest. If the Project Proponent elects to remove a nest tree, then nest trees may be removed between September 1 and February 15, when the nests are unoccupied (SJCOG 2000).

Mitigation Measure BIO-03. Roosting Bats

- **Mitigation Measure BIO-03a:** Impacts to long-eared myotis should be minimized through the implementation of SJMSCP ITMM 5.2.4.28:

- Prior to the start of initial Project-related disturbance, nursery sites within the Project footprint should be sealed to the extent practicable, including caves, adits, trees or snags (SJCOG 2000).
- Hibernation sites should be sealed prior to the hibernation season (November through March) if identified on the Project Site. Alternatively, grating may be installed in a manner specified by the SJMSCP (SJCOG 2000).
- When colonial roosting sites which are located in trees or structures must be removed, removal shall occur outside of the nursery and/or hibernation seasons and shall occur during dusk and/or evening hours after bats have left the roosting site, unless otherwise approved (SJCOG 2000).

- **Mitigation Measure BIO-03b:** The removal or trimming of all trees with a diameter at breast height greater than 16 inches shall be conducted outside of the bat maternity season (May through August). If this is not feasible, a bat roost assessment shall be performed by a qualified biologist no more than 30 days prior to tree removal to determine if roosting bats are present.

Mitigation Measure BIO-04. Crotch's Bumble bee

A qualified bumble bee biologist shall survey for Crotch's bumble bee prior to the commencement of construction activities during the colony active period or the gyne flight season (generally, April 1 to October 31). The survey shall occur at least two hours after sunrise (> 60F and < 90F with no rain) or two hours before sunset and the survey area shall include the Project site boundaries and a surrounding 100-foot buffer area. The survey duration shall be appropriate to the size of the Project site and buffer area based on the metric of a minimum of one person-hour of searching per three acres of suitable habitat.

During the survey(s) the qualified biologists may not capture or handle bumble bees unless specifically authorized to do so for the Project by CDFW. At a minimum, survey methods shall include the following:

i. Search areas with flowering plants for foraging bumble bees. Observed foraging activity may indicate a nest is nearby, and therefore, the survey duration shall be increased when foraging bees are present.

ii. Watch any bumble bees present and observe their flight patterns. Attempt to track their movements between foraging areas and the nest.

iii. Visually look for nest entrances. Observe burrow, any other underground cavities, logs, or other possible nesting habitat.

iv. Look for concentrated bumble bee activity.

v. Listen for humming of nest colony.

vi. If bumble bees are observed, attempt to identify the species by taking a picture.

vii. If foraging bees are present and a nest has not been found, floral resources within the Project's disturbance footprint may be carefully removed with hand-held tools to minimize foraging bee presence during Project activities. The continuation of bumble bee activity once such floral resources are removed may be an indication that a nest is present.

viii. The biologist conducting the survey shall record when the survey was conducted, a general description of any suitable foraging habitat/floral resources present, a description of

observed bumble bee activity, a description of any vegetation removed to facilitate the survey, and their determination of if the survey observations suggest a Crotch bumble bee nest may be present or if construction activities could otherwise harm the species. The survey may be conducted immediately prior to construction granted all the above and below conditions are met.

If a special-status bumble bee is observed during the survey (not associated with a nest), or if any sign(s) of a bumble bee nest is observed and if it cannot be established the species present is not a special-status bumble bee, then construction shall not commence until CDFW provides further guidance, which may include an additional survey by a bumble bee expert, waiting until the colony active season ends, obtaining take authorization, or other actions.

Mitigation Measure BIO-05. Valley Elderberry Longhorn Beattle

- **Mitigation Measure BIO-05a:** Impacts to VELB shall be avoided through the implementation of SJMSCP ITMM 5.2.4:
    - If elderberry shrubs are present on the Project site, a setback of 20 feet from the dripline of each elderberry bush shall be established (SJCOG 2000).
    - Brightly colored flags or fencing shall be placed surrounding elderberry shrubs throughout the construction process (SJCOG 2000).
    - For all shrubs without evidence of VELB exit holes which cannot be retained on the Project site as described above, the Project shall count all stems of I" or greater in diameter at ground level. The Project should compensate for removal of the stems at an accredited VELB mitigation bank at the ratio of 3:1 in terms of shrubs removed (SJCOG 2000).
    - For all shrubs with evidence of VELB exit holes, the Project shall undertake transplanting of elderberry shrubs displaying evidence of VELB occupation to VELB mitigation sites during the dormant period for elderberry shrubs (November 1 – February 15). For elderberry shrubs with evidence of VELB occupation which cannot be transplanted, the Project should compensate for removal of the stems at an accredited VELB mitigation bank at the ratio of 6:1 in terms of planted: removed.
- **Mitigation Measure BIO-05b:** The following measures shall be implemented to avoid impacts to valley elderberry shrubs:
    - Ground disturbing activities on the Project site should not alter the hydrology of the site or otherwise affect the likelihood of vigor or survival of elderberry shrubs.
    - Project activities, such as truck traffic or other use of machinery, shall not create excessive dust on the Project site, such that the growth or vigor of elderberry shrubs is adversely affected.
    - Areas that are disturbed temporarily shall be restored to pre-disturbance conditions. Erosion control measures shall be implemented to restore areas disturbed within 100 feet of elderberry shrubs.
    - No insecticides, herbicides, fertilizers, or other chemicals shall be used within 100 feet of elderberry shrubs.

Mitigation Measure BIO-06. Northwestern Pond Turtle

The following measures shall be implemented to reduce impacts to northwestern pond turtle:

- **Mitigation Measure BIO-06a:** A qualified biologist shall conduct pre-construction surveys for northwestern pond turtle within 48 hours prior to the initiation of construction activities within or adjacent to aquatic habitat (SJCOG 2000).
- **Mitigation Measure BIO-06b.** If nesting areas for pond turtles are identified on the Project site, a buffer are of 300 feet shall be established between the nesting site (which may be immediately adjacent to aquatic habitat or extend up to 400 feet away from wetland areas in uplands), and the aquatic habitat near the nesting site. These buffers shall be indicated by temporary fencing if construction has or will begin before nesting periods are ended (the period from egg laying to emergence of hatchlings is normally April to November) (SJCOG 2000).
- **Mitigation Measure BIO-06c**: A biological monitor shall provide an environmental awareness training program to all personnel involved in Project construction. At a minimum, the employee education program shall consist of a brief presentation by persons knowledgeable about the biology of sensitive species with potential to occur in the Project footprint, and about their legislative protection to explain concerns to contractors and their employees involved with implementation of the Project. The program shall include a description of these species and their habitat needs, any reports of occurrences in the area; an explanation of the status of these species and their protection under State and Federal legislation; and a list of measures being taken to reduce impacts during construction.
- **Mitigation Measure BIO-06d**: Water quality protections during construction activities will include spill prevention and containment measures on the barges, including sorbent mats, spill kits, brooms, buckets, and other equipment as necessary; a Stormwater Prevention Plan (SWPPP) and Best Management Practices (BMPs) for earthwork areas including the use of fiber rolls and/or silt fences as needed; a Spill Prevention, Control, and Countermeasures Plan (SPCC Plan) for equipment operating near the water; and non-structural measures, such as qualified and trained personnel, good housekeeping, and documented emergency procedures. Silt curtains will also be placed around the work site within the water.

Mitigation Measure BIO-07. Special-status Fish

All in-water work should occur during an in-water work window during which time delta smelt and salmonids have lower potential to occur in the Project site, from August 1 to November 30. This work window also minimizes the likelihood of any adult or juvenile green sturgeon being incidentally present, and juveniles are not likely to occur in the Project Area.

Mitigation Measure BIO-08. Trees

- **Mitigation Measure BIO-08a:** The Project proponent shall obtain and comply with all applicable permits and regulations regarding public trees, including the City of Stockton Tree Ordinance (Ordinance 015-09). Such compliance shall include, but not be limited to, replacement of public tree removals on a one for one basis. The size and species of the replacement shall be determined by the Director based on the size of the tree that was removed, with the minimum size being a 15-gallon container stock. If possible, the replacement tree shall be planted on the same parcel as the tree that was removed; if not possible, it shall be planted in a City Park, or some other location determined by the Director. Such off-site planting shall be performed by a local contractor hired by the City. The applicant shall reimburse the City for the cost of any off-site planting together with a 2.5 percent administration fee based on the actual cost of the planting contract.

- **Mitigation Measure BIO-08b:** Impacts to riparian trees will require replanting of native riparian trees along the stream channels in the preserved portions of the property in accordance with CDFW mitigation ratios listed below:
    i. 1:1 for removal of non-native trees;
    ii. 1:1 for removal of native trees up to 3 inches DBH
    iii. 3:1 for removal of native trees 4 to 6 inches DBH;
    iv. 6:1 for removal of native trees greater than 6 inches DBH;
    v. 4:1 for removal of oak (Quercus sp.) trees up to 6 inches DBH;
    vi. 5:1 for removal of oak trees between 7 and 15 inches DBH; and
    vii. 10:1 for removal of oak trees greater than 15 inches DBH.

  Native replacement trees will be planted along the San Joaquin levee banks onsite and will be monitored for 10 years. A Riparian Mitigation and Monitoring Plan will be developed, which includes a detailed native plant species palette and map showing plant spacing, and specific performance criteria, monitoring, adaptive management and invasive species removal in order to allow for successful habitat creation and maintenance. The Riparian Mitigation and Monitoring Plan shall plan for a 70 percent survival for native replacement trees at the end of the 10-year monitoring program.

Mitigation Measure BIO-09: Aquatic Resources

- **Mitigation Measure BIO-09**: Prior to ground disturbing activities, flagging of sensitive habitats adjacent to Project construction areas and silt fencing shall be installed with oversight from a qualified biologist in the areas adjacent to non-wetland waters.

3.6.5 Cultural Resources

Would the project:		*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
a)	Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	☒	☐
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c)	Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

A Phase I Archaeological Survey for the Project was prepared by ASM Affiliates. The results of the study were documented in a Phase I Archaeological Survey Report prepared in August 2024 (Appendix B). The information in this section is based on and adapted from the findings of the Phase I Archaeological Survey.

ENVIRONMENTAL SETTING

The Project site is located in the City of Stockton on the south side of the RWCF and south of Navy Drive. The area of potential effects (APE) covered by the Phase I Archaeological Survey totals approximately two acres and includes the pipeline, adjacent levee banks, and a buffer for potential access and staging areas, and is bisected by the San Joaquin River. Sewage disposal ponds are located on the west side of the APE and the rest of the APE is surrounded by developed, industrial land on the north and east edges. A cultural resource records search and literature review was conducted within the APE, and a 0.5-mile records search radius around the APE through the California Historical Resources Information System, Central California Information Center at Stanislaus State University. The goal of the search was to determine where archaeological studies have been conducted within this area, and where known cultural resources are located. A Sacred Lands File search request was also submitted to the Native American Heritage Commission (NAHC) for the APE and the 0.5-mile records search radius.

REGULATORY SETTING

City of Stockton General Plan

The General Plan has three policies related to the protection of historic, archeological, and cultural resources.

i. Action LU5.2E requires the coordination with Native American representatives to identify locations of importance, including archaeological sites and traditional cultural properties.

ii. Action LU-5.2F requires developers to contact tribal representatives to train construction workers on appropriate avoidance and minimization measures and other applicable State laws and regulations.

iii. Action LU-5.2G requires compliance with State and federal standards to evaluate and mitigate impacts to cultural resources, including tribal, historic, archaeological, and paleontological resources.

DISCUSSION OF IMPACTS

a-b) Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5? Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?

Less-than-Significant Impact with Mitigation Incorporated

No historic properties are present in the APE. Two ineligible historic-era resources were identified in the APE from the records search and six historic-era sites were identified in the 0.5-mile buffer. A Sacred Lands File search request was also submitted to the NAHC, and the results were negative for cultural resources. An intensive pedestrian survey of 100-percent of the accessible portions of the APE was conducted on July 3, 2024. No new resources were identified, and there is low potential to encounter unidentified cultural resources during Project implementation. The study concluded that efforts to locate archaeological resources and historic properties were sufficient to conclude that no historic properties are present in the APE. However, it is possible that previously disturbed areas may still contain undiscovered archeological resources or other cultural resources. The implementation of Mitigation Measure CUL-1 would reduce potential impacts to undiscovered archeological and cultural resources to ***less than significant with mitigation incorporated***.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less-than-Significant Impact with Mitigation Incorporated

No human remains are known to be buried on the Project site. However, Project construction activities have the potential to disturb human remains that may be interred outside of dedicated cemeteries. California Health and Safety Code section 7050.2 requires that, in the event that human remains are uncovered at the Project site during construction activities, no further disturbance shall occur until the County Coroner has made the necessary findings as to the origin and disposition pursuant to Public Resources Code section 5097.998. The coroner then has 24 hours to notify the California Native American Heritage Commission (NAHC), pursuant to subdivision (c) of section 7050.5 of the California Health and Safety Code. The NAHC will then contact the most likely descendants, who may recommend how to proceed. The implementation of Mitigation Measure CUL-1 would reduce potential impacts with respect to unknown human remains to ***less than significant with mitigation incorporated***.

MITIGATION MEASURES

Mitigation Measure CUL-1: Accidental Discovery of Archeological Resources or Human Remains

If suspected archaeological materials or paleontological resources are uncovered, work at the place of discovery shall be halted immediately until a qualified archaeologist or paleontologist can evaluate the finds as required by the CEQA Guidelines §15064.5(f). Prehistoric archaeological site indicators include the following: obsidian and chert flakes and chipped stone tools, grinding

and mashing implements (e.g., slabs and hand stones, and mortars and pestles), bedrock outcrops and boulders with mortar cups, and locally darkened midden soils. Midden soils may contain a combination of any previously listed items with the possible addition of bone and shell remains, and fire-affected stones. Historic period site indicators generally include the following: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits.

If human remains are encountered, excavation or disturbance of the location shall be halted in the vicinity of the find, and the county coroner shall be contacted. If the coroner determines the remains are Native American, the coroner shall contact the Native American Heritage Commission (NAHC). The NAHC shall identify the person or persons believed to be most likely descended from the deceased Native American. The most likely descendant shall make recommendations regarding the treatment of the remains with appropriate dignity.

3.6.6 Energy

Would the project:		*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*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?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

Beginning in April 2025, Ava Community Energy will be the default provider of electricity generation for 120,000 residents in Stockton, CA. Pacific Gas and Electric (PG&E) is the current provider and will continue to generate and deliver electricity to customers not serviced by Ava.

REGULATORY SETTING

City of Stockton General Plan

The City's General Plan contains the following relevant policies related to energy:

- Policy LU-5.4: Require water and energy conservation and efficiency in both new construction and retrofits.

Action LU-5.4B of the City's General Plan requires that major rehabilitation, renovation, and redevelopment incorporate appropriate energy conservation and green building practices, such as shading, landscaping, and the use of active and passive solar heating and water systems.

City of Stockton 2014 Climate Action Plan (CAP)

The City completed a Capital Improvement and Energy Management Plan in the 2014 CAP to identify actions and measures to enhance operations at the RWCF. *Wastewater -1: Energy Efficiency Improvements at the Regional Wastewater Treatment Plant* outlines the following capital improvements and operational changes that would achieve a reduction in energy usage at the RWCF:

- Reduce Discharge Pressure of Tertiary Air Compressors;
- Install Premium Efficiency Motors on a Replacement Basis;
- Replace Existing HID Fixtures with High Efficiency Fluorescent Fixtures;
- Install Automatic Lighting Controls;
- Replace Air Compressor No. 2 with a VSD Air Compressor
- Install Higher Efficiency DAF Pressurization Pumps.

DISCUSSION OF IMPACTS

a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less-than-Significant Impact

The Project consists of the addition of cover fill above an underground pipeline within the San Joaquin River. During construction, the implementation of Action LU-5.4B would ensure energy efficient construction methods are utilized when appropriate. Upon completion of construction activities, there will be no additional operational energy consumption or utilization of the pipeline compared to current conditions. The impact would be ***less than significant***.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact

The City's 2014 Climate Action Plan established goals, policies, and procedures to improve energy efficiency and reduce greenhouse gas (GHG) emissions to align with State regulations. The Project is limited to the addition of cover of an existing underground pipeline in the San Joaquin River; it is not directly related, nor in conflict, with any actions in the CAP specific to the RWCF. There would be ***no impact***.

3.6.7 Geology and Soils

Would the project:		Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	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?	☐	☐	☒	☐
	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, creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

ENVIRONMENTAL SETTING

The City is not located within an Alquist-Priolo Earthquake Fault Zone (CGS 2025). The closest major earthquake faults to the City are the Greenville Fault, located approximately 22 miles southwest of the Project site, and the Hayward Fault, which is approximately 40 miles west of the Project site (United States Geological Survey 2025). CGS has not identified any landslide or liquefication hazard zones in the Project area (CGS 2025).

According to SoilWeb (CSRL 2024) and Web Soil Survey (USDA 2024), the Project area is underlain by two soil mapping units: Meritt silty clay loam, partially drained, and yellowlark gravelly loam.

DISCUSSION OF IMPACTS

a-i-ii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: 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? Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Strong seismic ground shaking?

Less-than-Significant Impact

The Project site does not lie within a State-mandated Alquist-Priolo Earthquake Fault Zone, as identified by the most recent Alquist-Priolo Fault Zoning Map issued by the State Geologist (CGS 2024). The two closest faults to the City are the Greenville Fault, approximately 22 miles away, and the Hayward Fault, approximately 40 miles away (General Plan 2018). These faults are capable of producing minor to major earthquakes; therefore, there is potential for the Project site to experience high intensity ground shaking. However, the likelihood of surface rupture occurring from active faulting at the site is small. Therefore, potential direct or indirect impacts, including the risk of loss, injury, or death involving rupture of a known earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map would be ***less than significant***.

a-iii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Seismic-related ground failure, including liquefaction?

No Impact

The Project site has not been identified as a liquefaction zone (DOC 2025). Project activities are limited to the addition of fill over an existing underground pipeline; Project operation would not introduce risks associated with seismic-related ground failure or liquefication and there would be ***no impact***.

a-iv) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Landslides?

No Impact

The Project site is not located within a landslide hazard zone as delineated by the CGS (CGS 2025). Construction activities are limited to the addition of natural fill over an existing underground pipeline in the San Joaquin River, which would not cause an increased risk of landslide. The Project would not include any operational changes to the Project area. Therefore,

the Project would not directly or indirectly cause potential substantial adverse effects related to landslides. ***No impact*** would occur.

b) Result in substantial soil erosion or the loss of topsoil?

Less-than-Significant Impact

The Project would add cover to an existing underground pipeline within the San Joaquin River. During construction, Project activities would involve earth excavation. However, the excavated earth would be replaced, leveled, and revegetated after the new infrastructure is installed. Some soil erosion and loss of topsoil will be unavoidable. However, implementation of Mitigation Measure BIO-8c, which requires the development of a replanting and monitoring program where the excavation will take place, and BIO-06d, which requires the development of a SWPPP, will minimize the loss of topsoil and soil erosion impacted by Project related vegetation removal. Furthermore, Project operations would take place entirely within the river, thus risks related to soil erosion and the loss of topsoil would return to current conditions. The impact would be ***less than significant***.

c, d) 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? Be located on expansive soil, as defined in Table 18 1 B of the Uniform Building Code, creating substantial direct or indirect risks to life or property?

Less-than-Significant Impact

The Project is limited to the addition of cover over an existing underground pipeline in the San Joaquin River. Construction equipment will be staged on an existing excavated pad and graded areas near the river levee; all equipment will be transported using roads at RWCF. Grading will occur on the eastern side of the river near the levee during construction, but Project operation will occur entirely within the river. Even though yellowlark gravelly loam and Meritt silty clay loam are potentially expansive, no permanent structures will be constructed landside. Furthermore, with the implementation of a SWPP, impacts related to soil instability and run-off would be reduced. The impact would be ***less than significant.***

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact

No septic tanks or additional alternative wastewater disposal systems are proposed as part of the Project. ***No impact*** would occur.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less-than-Significant Impact with Mitigation Incorporated

As discussed in *Section 4.2.5, Cultural Resources*, the City's General Plan contains three policies related to paleontological and geologic resources. Even though ground disturbing activities will be minimal during construction, and the existing pipeline is underground in the San Joaquin River, there is a small potential for paleontological resources to be encountered during ground-

disturbing work at the Project site. Implementation of Mitigation Measure CUL-1 (see *Section 4.2.5, Cultural Resources*) will ensure that impacts related to unique paleontological resources and geologic features will be ***less than significant with mitigation incorporated.***

3.6.8 Greenhouse Gas Emissions

Would the project:	*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*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 any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

Greenhouse gases (GHGs) are recognized by wide consensus among the scientific community to contribute to global warming/climate change and associated environmental impacts. The most common GHGs released from human activity are carbon dioxide, methane, and nitrous oxide. (Governor's Office of Planning and Research 2008). The primary sources of GHGs are vehicles (including planes and trains), energy plants, and industrial and agricultural activities (e.g., dairies and hog farms). In the United States, the major sources of GHG emissions are transportation, electricity generation, and industrial activities (EPA 2022). Currently, the sole source of GHG from the Project site is the RWCF.

REGULATORY SETTING

Global Warming Solutions Act

Assembly Bill (AB) 32, adopted in 2006, established the Global Warming Solutions Act of 2006 which requires the State to reduce GHG emissions to 1990 level by 2020. In 2016, Senate Bill (SB) 32 was signed into law, amending the California Global Warming Solution Action. SB 32 and Executive Order B-30-15 require the California Air Resources Board (CARB) to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030. CARB updated its Climate Change Scoping Plan in December of 2017 to express the 2030 statewide target in terms of million metric tons of carbon dioxide equivalent (MMTCO2e). Based on the emissions reductions directed by Senate Bill (SB 32), the annual 2030 statewide target emissions level for California is 260 $MMTCO_2e$.

City of Stockton Climate Action Plan (CAP)

The 2014 CAP is the most recently adopted air quality plan in the City of Stockton; it outlines a framework to achieve GHG emissions in accordance with AB 32. The CAP identifies an emissions reduction target and measures for reducing future GHG emissions. Based on the City's existing and future emissions profile, the plan recommends specific actions the City can take to meet this target. Nine local programs were identified by sector, including measures related to off-road vehicles.

City of Stockton General Plan

The City's General Plan contains multiple policies with the goal of improving air quality. Action CH-5.2A, which requires the use of recycled materials and products for City projects and operations where economically feasible. SAF-4.1A encourages best practices that reduce air pollutant emissions, the use of low-emission and well-maintained construction equipment with idling time limits, and the development of a dust control plan during construction. Action CH-5.2B requires recycling in private and public operations, including construction and demolition debris.

DISCUSSION OF IMPACTS

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less-than-Significant Impact

GHG emissions associated with the Project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. However, implementation of General Plan actions SAF-4.1A, which encourages the use of low-emission and well-maintained construction equipment with idling time limits, and the development of a dust control plan during construction in addition to Action CH-5.2B, which requires recycling of construction and demolition debris, would reduce GHG emissions during construction. There will be no Project related GHG emissions during Project operation as compared to current conditions; operationally, the Project is limited to the addition of cover over an existing underwater pipeline. Therefore, impacts related to greenhouse gas emissions would be ***less than significant***.

b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

Less-than-Significant Impact

The Project site falls within the planning jurisdiction of the City of Stockton's CAP. Project operation would not conflict with the CAP. During Project construction activities, the implementation of General Plan actions CH-5.2A, SAF-4.1A, and CH-5.2B would be incorporated. Due to the nature of the Project, vehicle trips and GHG emissions would return to current conditions, as no further maintenance would be needed on an underground pipeline within the San Joaquin River. The Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. ***No impact*** would occur.

3.6.9 Hazards and Hazardous Materials

Would the project:		*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*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 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?	☐	☐	☒	☐

ENVIRONMENTAL SETTING

A search of the State Water Resources Control Board's (SWRCB) GeoTracker and the Department of Toxic Substances Control's (DTSC's) EnviroStor databases indicated three closed Leaking Underground Storage Tank (LUST) cleanup sites within 0.25 mile of the Project site (SWRCB 2025; DTSC 2025). Two LUST sites are located outside of the Project site at the RWCF, approximately 500 feet northeast of the Project site, and at the Learner Company, a recycling services facility located at 2711 Navy Drive approximately 800 feet north of the Project site. The LUST cleanup case at the Learner Company was opened in August 1996. The contaminant released was gasoline and the potential media of concern was an aquifer used for drinking water. Two storage tanks were removed, and 100 CY of soil was bioremediated and reused onsite; the case was closed in June 2005. One active cleanup case at the RWCF was opened in August 1987. The contaminant of concern was gasoline, and the potential media of concern was an aquifer. Remedial actions were taken and the case was closed in June 1993. The most recent LUST cleanup case at the RWCF was opened in July 1994; gasoline was the potential contaminant of concern. The case was closed in December 1997.

No schools are located within 0.25 mile of the Project site. The closest school is Washington Elementary School, located approximately 1.1 miles northeast of the Project site. No airports are located within two miles of the Project site. The nearest airport to the Project site is the Stockton Metropolitan Airport located approximately 5 miles southeast of the Project site. The Project site is located within a Local Responsibility Area (LRA) not a State Responsibility Area (SRA) as mapped by California Department of Forestry and Fire Protection (CalFire 2025). The Project site is not located within or near an area that is designated as Moderate, High, or Very High Fire Hazard Severity Zone (FHSZ) by CalFire (CalFire, 2025).

REGULATORY SETTING

U.S. Department of Transportation, 49 CFR Part 172

The code of federal regulations lists and classifies materials which have been deemed as hazardous materials for purposes of transportation. It outlines requirements for shipping papers, package marking, labeling, and transport vehicle placarding applicable to the shipment and transportation of those hazardous materials.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) gives the Environmental Protection Agency (EPA) the authority to control hazardous waste generation, transportation, and disposal. This also includes the treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid waste. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.

DISCUSSION OF IMPACTS

a-b) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? 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?

Less-than-Significant Impact

Project construction may involve the use and transport of typical construction-related hazardous materials such as fuels, lubricants, adhesives, and solvents. Heavy equipment would be staged and refueled within the Project staging areas. Construction activities, both landside and within the river, would be required to comply with numerous hazardous materials regulations and implement BMPs to ensure that hazardous materials are handled properly and do not pose a threat to worker safety or the environment. All hazardous materials must be transported to and from the Project site in accordance with the Resource Conservation and Recovery Act (RCRA) and U.S. Department of Transportation regulations and disposed of in accordance with RCRA at a facility that is permitted to accept the waste. Due to compliance with existing regulations related to the routine transport and accidental releases of hazardous materials, Project related impacts would be ***less than significant.***

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact

The Project is not located within one-quarter mile of an existing or proposed school. The closest school is Washington Elementary School, located approximately 1.1 miles northeast of the Project site. ***No impact*** would occur.

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?

Less-than-Significant Impact

The Project site is not located on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. There is one cleanup site within 1,000 feet of the Project site, a scrap metal salvage facility; however, a removal action workplan for soil excavation and offsite disposal was completed and approved by the Department of Toxic Substances in March 2012. Three inactive LUST cleanup sites are located within 1,000 feet of the Project site, but do not pose an environmental risk to the site because cleanup actions were administered and the cases were closed in June 1993, August 1996, and June 2005. Due to the nature of the Project, which consists of replacing cover over a buried pipeline in the San Joaquin River, and the distance of the cleanup sites from the Project site, Project activities do not pose a significant environmental risk to the Project site. The impact would be ***less than significant***.

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 for people residing or working in the project area?

No Impact

The Project site is not located within two miles of an airport. The nearest airport to the Project site is the Stockton Metropolitan Airport, located approximately 5 miles southeast of the Project site. ***No impact*** would occur.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less-than-Significant Impact

The Project would not impair implementation of or physically interfere with an adopted emergency response plan or evacuation plan. Interstate 5, Interstate 205, Interstate 580 and State Highways 99, 12, 88, 4, 120, 132, and 26 are the major transportation routes through the County, and would be highly utilized by both County residents and tourists as possible evacuation routes in the event of an emergency (San Joaquin County, 2022). The nearest designated evacuation route is State Highway 4, approximately one-half mile south of the Project site; the Project site would not include any portion of State Highway 4, nor would Project activities or staging areas obstruct the route or prevent residents from accessing the route. All equipment during construction would be staged on a pad at the RWCF and on the eastern side of the river. Construction materials would be transported to the site and remain on-site until construction activities are complete. Upon completion of construction activities, the pipeline would remain underground within the San Joaquin River, and there would be no change as compared to current conditions. The impact would be ***less than significant***.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Less-than-Significant Impact

The Project site is located within an LRA, but not within or near an area that is designated as Moderate, High, or Very High FHSZ by CalFire. As such, the Project would not directly expose people or structures to a significant risk of loss, injury or death involving wildland fires. The risk of wildfire is considered relatively low due to the lack of forest or grassland area in the immediate vicinity of the Project site that could serve as fuel for a potential fire, thus the impact would be ***less than significant***.

3.6.10 Hydrology and Water Quality

Would the project:		*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*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 that 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 off-site;	☐	☐	☒	☐
	iii) create or contribute runoff water that would exceed the capacity of existing or planned storm water 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?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

The Project site is located within the San Joaquin River Basin; therefore, the Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin (Basin Plan) applies to the Project. The Basin Plan identifies beneficial water uses, water quality objectives to protect the designated beneficial water uses, and strategies and time schedules to achieve water quality objectives. Water quality objectives for surface waters encompass features such as bacteria

level, sediment, pH, and temperature. Strategies include Total Maximum Daily Loads required by the Clean Water Act for waterbodies where water quality standards are not currently being met.

Stormwater runoff from the dry land portions of the Project site ultimately flows either by sheet flow or via storm drain outfalls directly into the San Joaquin River. The wet portions of the Project site are located within the San Joaquin River channel. The segment of the San Joaquin River through the Project site is listed as impaired for water temperature exceeding established standards (SWRCB 2024a).

The San Joaquin River is a perennial waterway which conveys water flows throughout the entire year and experiences muted tidal action. The San Joaquin River is recognized as a traditionally navigable waterway by the U.S. Army Corps of Engineers (USACE) Sacramento District (USACE 2024). The San Joaquin River is a jurisdictional aquatic resource subject to regulation by the USACE, Central Valley Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW).

REGULATORY SETTING

Waters of the United States

The USACE regulates "Waters of the United States" under Section 404 of the Clean Water Act. Waters of the United States, as defined by the Code of Federal Regulations, include territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, such as tributaries, lakes and ponds, impoundments of waters of the U.S., and wetlands that are hydrologically connected with these navigable features. Unvegetated waters including lakes, rivers, and streams may also be subject to Section 404 jurisdiction and are characterized by an ordinary high-water mark. The placement of fill material into Waters of the United States generally requires a permit from the USACE under Section 404 of the Clean Water Act.

The USACE also regulates construction in navigable waterways of the U.S. through Section 10 of the Rivers and Harbors Act of 1899 (33 U.S. Code [USC] 403). Section 10 of the Rivers and Harbors Act requires USACE approval and a permit for excavation or fill, or alteration or modification of the course, location, condition, or capacity of, any port, roadstead, haven, harbor, canal, lake, harbor or refuge, or enclosure within the limits of any breakwater, or of the channel of any navigable water of the United States.

Waters of the State

The term "Waters of the State" is defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." Waters of the State include wetlands and other surface waters protected by the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (SWRCB 2019). The State Water Resources Control Board (SWRCB) and RWQCB issue permits for the discharge of fill material into surface waters through the State Water Quality Certification Program, which fulfills requirements of Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. Projects that require a Clean Water Act permit are also required to obtain a Water Quality Certification. If a project does not require a federal permit but does involve discharge of dredge or fill material into surface waters of the State, the SWRCB and RWQCB may issue a permit in the form of Waste Discharge Requirements.

Sections 1600-1616 of California Fish and Game Code

Streams and lakes, as habitat for fish and wildlife species, are also regulated by CDFW under Sections 1600-1616 of the California Fish and Game Code (CFGC). Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term "stream" broadly encompasses bodies of water that flow at least periodically or intermittently and supports fish or other aquatic life. Riparian vegetation has been defined as "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

City of Stockton General Plan

The City's General Plan (Envision Stockton, adopted in 2018) contains policies pertaining to water resources as follows:

- POLICY LU-5.2 Protect natural resource areas, fish and wildlife habitat, scenic areas, open space areas, agricultural lands, parks, and other cultural/historic resources from encroachment or destruction by incompatible development.
    - Action LU-5.2B For projects on or within 100 feet of sites that have the potential to contain special-status species or critical or sensitive habitats, including wetlands, require preparation of a baseline assessment by a qualified biologist following appropriate protocols, such as wetland delineation protocol defined by the US Army Corps of Engineers. If such sensitive species or habitats are found to be present, development shall avoid impacting the resource, and if avoidance is not feasible, impacts shall be minimized through project design or compensation identified in consultation with a qualified biologist.

      Action LU-5.2I Coordinate with water agencies and non-profit organizations to promote public awareness on water quality and conservation issues and consistency in water quality impacts analyses.

DISCUSSION OF IMPACTS

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less-Than-Significant Impact with Mitigation Incorporated

Dredging and other in-water work associated with the remediation of the pipeline river crossing could affect water quality through increased turbidity from the proposed excavation site and the placement of excavated materials, gravel, and rip rap at the pipeline crossing. The potential also exists for the release of contaminants during proposed dredging activities. The condition of sediments in the area proposed for excavation and dredging has not been previously evaluated. If contaminated sediments are present in areas of dredging, there is potential for contaminated materials to be introduced to the water column. This would represent a potentially significant impact.

In addition, in-water construction requires specialized mechanical equipment including cranes, floating barges, and dredging equipment. These larger pieces of equipment require generators or compressors to run equipment, and a variety of petroleum and plant-based fuels or lubricants (greases, oils, coolants, hydraulic fluid, fuels, cement washout, and other construction-related contaminants), many of which can be toxic to aquatic ecosystems if spilled and introduced

accidentally. Similarly, debris from construction in-water can enter the aquatic environment and may itself be contaminated with lubricants or preservatives.

Landside construction close to the shoreline carries a similar risk of introducing contaminants like greases, oils, coolants, etc. from construction equipment to be discharged into the river through sheet flow or conveyance via stormwater infrastructure. Introduction of such materials could cause degradation of water quality. Stormwater runoff from the landside portion of the Project site flows either via sheet flow or storm drains into the San Joaquin River. An excavated pad with curb and gutter improvements northeast of the pipeline river crossing will serve as the staging area for construction equipment, stockpiling, and turnaround. The staging area will be accessed via existing plant roadways. Material and equipment delivery will be via a graded ramp to the levee crown on the north side of the river. Any necessary levee grading would be limited to the land side of the feature. Excessive runoff from the site, including the temporary equipment access route across the levee, could potentially carry pollutants into the river and thus degrade water quality.

The Basin Plan sets narrative and numerical water quality objectives for the San Joaquin River Basin. Numerical objectives typically describe pollutant concentration, physical and chemical conditions of water, and the toxicity of water to aquatic organisms. Because the Project would disturb more than one acre of soil, the Project is required to obtain coverage under SWRCB Order No. 2022-0057-DWQ, Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction and Land Disturbance Activities (Construction General Permit). Through compliance with the terms of this Construction General Permit, the Project would not conflict with any waste discharge requirements.

In order to obtain coverage under the Construction General Permit, an applicant must prepare a Stormwater Pollution Prevention Plan (SWPPP) that contains measures and best management practices (BMPs) to reduce sediment and pollutant runoff. The construction contractor would be responsible for ensuring that the SWPPP is adhered to throughout Project construction.

Construction-related water quality protections in the SWPPP would include spill prevention and containment measures on the barges, including sorbent mats, spill kits, brooms, buckets, and other equipment as necessary; BMPs for earthwork areas including the use of fiber rolls and/or silt fences as needed; a Spill Prevention, Control, and Countermeasures Plan (SPCC Plan) for equipment operating near the water; and non-structural measures, such as qualified and trained personnel, good housekeeping, and documented emergency procedures. Silt curtains would also be placed around the work site within the water to limit any construction-generated turbidity to the immediate work area. These measures are also established in Mitigation Measure BIO-6d.

Additionally, the City would be required to secure various permits from state and federal regulatory agencies, including a U.S. Army Corps of Engineers Section 404 Permit and Section 401 Water Quality Certification issued by the RWQCB. Together, these permits would implement a series of requirements for dredging and in-water construction. These requirements include preliminary and ongoing testing of dredge materials, constraints on dredge machinery and dredging work periods based on biological resources, and completion of a detailed alternatives analysis that identifies and supports implementation of alternatives to aquatic disposal of dredge materials. These alternatives may include upland disposal, on-site use, or wetland enhancement. Additionally, the application of dredging BMPs would be required under the indicated permitting scheme. BMPs may include, but would not be limited to, the following:

- Debris booms to control unintentional waste and debris from entering the water column;

- Mechanical dredge operational controls, including increased cycle time, elimination of multiple bites, and elimination of bottom stockpiling;
- Avoidance and proper disposal of contaminated sediments;
- Measures, such as silt curtains to avoid dispersal of contaminated sediments (if present) during dredging;
- Use of specialty equipment including pneuma pumps, closed buckets, large-capacity dredges, and use of precision dredging; and
- Work window restrictions to avoid impacts on sensitive resources.

Implementation of these BMPs along with the other permit conditions described above would minimize the potential release of contaminants and sediments contained in dredge materials and associated with dredge operations. Project-related dredging would not proceed until all permits (and applicable consultations for biological resources) are complete.

With implementation of Mitigation Measure BIO-6d and through compliance with the Construction General Permit and the terms of other regulatory permits issued for the Project, the Project would not result in violation of water quality standards or waste discharge requirements and would not degrade surface or groundwater quality. The impact would be ***less than significant with mitigation incorporated***.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

No Impact

The Project site is located on the boundary of the San Joaquin Valley – Tracy and the San Joaquin Valley – Eastern San Joaquin Groundwater Sustainability Plan Areas, with the San Joaquin River representing the boundary. The Tracy Subbasin is designated as a medium priority basin and the Eastern San Joaquin Subbasin as a critically overdrafted basin by the Sustainable Groundwater Management Act. Groundwater Sustainability Plans have been adopted for each subbasin. The Project would not introduce any new impervious surface area to the site, nor would it interfere with any groundwater wells or water supply aquifers. Water needed for dust suppression and plant watering during construction would be obtained from an existing source. Groundwater may comprise a portion or all of the water used during construction; however, the quantity of water required would be limited to only what is needed to suppress fugitive dust and water newly planted vegetation. The potential use of groundwater for Project construction activities would not substantially impact groundwater supplies and groundwater recharge.

Following construction, the Project would not include the pumping of groundwater and would not result in new impervious surfaces that would interfere with groundwater recharge. Therefore, the Project would have ***no impact*** on groundwater supply and recharge.

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 off-site; (iii) create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or

provide substantial additional sources of polluted runoff; or (iv) impede or redirect flood flows?

Less-than-Significant Impact

Project construction work on the landside portion of the Project site is not anticipated to result in substantial erosion or siltation, nor would it substantially increase the rate or amount of surface runoff. The removal of some vegetation along the river levee could slightly increase the amount of runoff, but the incremental change would be minimal. No changes to existing drainage patterns are proposed and the implementation of required erosion and sediment control and pollution prevention BMPs pursuant to the SWPPP that will be prepared as a part of the Project's General Construction Permit obligations will reduce the incidence of polluted runoff to the maximum practicable extent. No additional runoff water would be generated, and no flood flows would be redirected.

The in-water portion of the construction work would not alter surface runoff, nor would it create or contribute runoff water. However, as discussed above under Impact a), the in-water work could introduce pollutants to the water column. As with the landside component of the Project, the implementation of required BMPs pursuant to the SWPPP that will be prepared as a part of the Project's General Construction Permit obligations will reduce the incidence of polluted runoff to the maximum practicable extent. Compliance with the requirements of the USACE 404 permit and the RWQCB's Water Quality Certification will further serve to reduce or avoid potential impacts related to polluted runoff.

Although the in-water component of the Project would take place in the San Joaquin River channel, it would not occur over an extensive enough area to either impede or significantly redirect flood flows.

Therefore, Project construction work would not substantially alter the existing drainage patter of the site or add impervious surfaces in a manner which would result in substantial erosion or siltation, increase surface runoff resulting in flooding, create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems, or impede or redirect flood flows. Impacts would be less than significant.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less-than-Significant Impact with Mitigation Incorporated

The Project is located within Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 06077C0465F, effective October 16, 2009 (FEMA 2016). The FIRM indicates that the landside portion of the Project site is located in an area classified by FEMA as Zone X with 0.2 percent annual chance (or 500-year) flood hazard. This area is noted as having a reduced flood risk due to the river levee. The in-water portion of the Project site is classified by FEMA as Zone AE with a 1 percent annual chance flood hazard. This is considered a high-risk zone due to its proximity to rivers and other waterbodies. In the case of the Project site, this area is within the active channel of the San Joaquin River. The Project site is not within any tsunami or seiche hazard zone (CDOC 2024) due to its distance from the Pacific Ocean and the presence of a river current.

As discussed above under Impact a), during construction, in-water work could risk release of pollutants, including sediment and pollutants associated with construction activities (i.e., fuel, lubricants, solvents), into the river channel. Landside construction close to the river edge carries

a similar risk of introducing contaminants like greases, oils, coolants, etc. from construction equipment to be discharged into the river through sheet flow or conveyance via stormwater infrastructure. Introduction of such materials could cause degradation of water quality. This would represent a potentially significant impact.

As noted previously, the Project would be required to implement applicable stormwater quality requirements contained in the General Construction Permit. These construction-related water quality protections will include spill prevention and containment measures on the barges, including sorbent mats, spill kits, brooms, buckets, and other equipment as necessary; a Stormwater Prevention Plan (SWPPP) and Best Management Practices (BMPs) for earthwork areas including the use of fiber rolls and/or silt fences as needed; a Spill Prevention, Control, and Countermeasures Plan (SPCC Plan) for equipment operating near the water; and non-structural measures, such as qualified and trained personnel, good housekeeping, and documented emergency procedures. Silt curtains will also be placed around the work site within the water to limit any construction-generated turbidity to the immediate work area. These measures are also established in Mitigation Measure BIO-6d.

Additionally, the Project will be required to secure various permits from state and federal regulatory agencies, including a U.S. Army Corps of Engineers Section 404 Permit and Section 401 Water Quality Certification issued by the RWQCB. Together, these permits would implement a series of requirements for dredging and in-water construction. Implementation of these BMPs along with the other permit conditions described above would minimize the potential release of contaminants and sediments contained in dredge materials and associated with dredge operations.

With implementation of Mitigation Measure BIO-6d and through compliance with the General Construction Permit and the terms of other regulatory permits issued for the Project, the Project would not risk the release of pollutants due to Project inundation within a flood hazard zone. The impact would be ***less than significant with mitigation incorporated***.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact

The Project site is located on the boundary of the San Joaquin Valley – Tracy and the San Joaquin Valley – Eastern San Joaquin Groundwater Sustainability Plan Areas. The Tracy Subbasin is designated as a medium priority basin and the Eastern San Joaquin Subbasin as a critically overdrafted basin by the Sustainable Groundwater Management Act. Groundwater Sustainability Plans have been adopted for each subbasin. The Project would not introduce new impervious surface area to the site, nor would it interfere with any groundwater wells or water supply aquifers. Upon completion, the Project site would be restored to the existing condition. Therefore, the Project would not conflict with the contents of any sustainable groundwater management plan.

The applicable water quality control plan is the Basin Plan. As discussed above under Impact a), the Project would not violate any water quality standards or waste discharge requirements established in the Basin Plan. Therefore, the Project would not conflict with any applicable water quality control plan.

The Project would not conflict with any applicable water quality control plan or sustainable groundwater management plan. No impact would occur.

3.6.11 Land Use and Planning

Would the project:		*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*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?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

The Project site is zoned as Public Facilities (PF). The General Plan land use designation for the Project site is Institutional. The Project site is immediately adjacent to and partially includes the RWCF, consistent with the site's zoning and land use designation.

DISCUSSION OF IMPACTS

a) Physically divide an established community?

No Impact

No residences or communities exist on the Project site. The Project site is located on the eastern portion of the RWCF and a portion of the San Joaquin River. Construction activities would require space for the staging area at the RWCF and portions of the eastern bank of the San Joaquin River may be inaccessible during construction. As the Project would be limited to the addition of cover over an existing pipeline, Project operational conditions would be similar to existing conditions at the Project site. Thus, there would be ***no impact*** related to physically dividing 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?

No Impact

The RWCF is designated as Institutional by the City's General Plan. The landside areas of the Project site are designated as PF and Institutional. Therefore, the Project would not conflict with any land use designation, plan, policy, or regulation in the General Plan because the conditions after Project construction would be similar to existing conditions at the Project site. ***No impact*** would occur.

3.6.12 Mineral Resources

Would the project:	*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*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?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

Mineral resources in California are mapped and classified by the California Geological Survey (CGS) pursuant to the Surface Mining and Reclamation Act (SMARA). Areas within the City of Stockton have been classified as "MRZ-1." An MRZ-1 designation indicates that geologic information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence. This zone applies to areas where geologic and economic data indicates that the likelihood for occurrence of significant mineral deposits is very low.

DISCUSSION OF IMPACTS

a-b) 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? 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?

No Impact

There are no known mineral deposits within the Project site. The CGS has classified areas within and surrounding Stockton as MRZ-1, which indicates that the likelihood for significant mineral deposits is very low. The City's General Plan does not identify any locally important mineral resources or recovery sites within the Project area. Therefore, the Project would not result in the loss of availability of a known mineral resource that would be of value to the region or residents of the state, or one that is identified as a locally important mineral resource recovery site. ***No impact*** would occur.

3.6.13 Noise

Would the project result in:	*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*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?	☐	☐	☐	☒

BACKGROUND INFORMATION

Noise Concepts and Terminology

Noise is commonly defined as unwanted sound that annoys or disturbs people and can have an adverse psychological or physiological effect on human health. Sound is measured in decibels (dB), which is a logarithmic scale. Decibels describe the purely physical intensity of sound based on changes in air pressure, but they cannot accurately describe sound as perceived by the human ear since the human ear is only capable of hearing sound within a limited frequency range. For this reason, a frequency-dependent weighting system is used, and monitoring results are reported in A-weighted decibels (dBA). Decibels and other acoustical terms are defined in

Table 1.

A typical method for determining a person's subjective reaction to a new noise is by comparing it to existing conditions. The following describes the general effects of noise on people: 1) a change of 1 dBA cannot typically be perceived except in carefully controlled laboratory experiments; 2) a 3-dBA change is considered a just-perceivable difference; 3) a minimum of 5-dBA change is required before any noticeable change in community response is expected; and 4) a 10-dBA change is subjectively perceived as approximately a doubling or halving in loudness (Charles M. Salter Associates, Inc. 1998).

Table 1. Definition of Acoustical Terms

TERM	DEFINITION
Frequency (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure.
Decibel (dB)	A unit describing the amplitude of sound on a logarithmic scale. Sound described in decibels is usually referred to as sound or noise "level." This unit is not used in this analysis because it includes frequencies that the human ear cannot detect.
A-Weighted Sound Level (dBA)	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound, in a manner similar to the frequency response of the human ear, and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.
Maximum Sound Levels (Lmax)	The maximum sound level measured during a given measurement period.
Equivalent Noise Level (Leq)	The average A-weighted noise level during the measurement period. For this CEQA evaluation, Leq refers to a 1-hour period unless otherwise stated.
Community Noise Equivalent Level (CNEL)	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels to sound levels during the evening from 7:00 to 10:00 p.m. and after addition of 10 decibels to sound levels during the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level (Ldn)	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to sound levels during the night between 10:00 p.m. and 7:00 a.m.
Ambient Noise Level	The existing level of environmental noise at a given location from all sources near and far.
Vibration Decibel (VdB)	A unit describing the amplitude of vibration on a logarithmic scale.
Peak Particle Velocity (PPV)	The maximum instantaneous peak of a vibration signal.
Root Mean Square (RMS) Velocity	The average of the squared amplitude of a vibration signal.

Sources: Charles M. Salter Associates, Inc. 1998. Federal Transit Administration 2018.

General Information on Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Several different methods are used to quantify vibration. Typically, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors to vibration include structures (especially older masonry structures) and people (especially residents, the

elderly, and sick). Vibration amplitudes are usually expressed as either Peak Particle Velocity (PPV) or as Root Mean Square (RMS) velocity. PPV is appropriate for evaluating potential damage to buildings, but it is not suitable for evaluating human response to vibration because it takes the human body time to respond to vibration signals. The response of the human body to vibration is dependent on the average amplitude of a vibration event. Thus, RMS is more appropriate for evaluating human response to vibration. PPV and RMS are described in units of inches per second (in/sec), and RMS is also described in vibration decibels (VdB).

ENVIRONMENTAL SETTING

Sensitive Receptors

Sensitive receptors are defined as land uses where noise-sensitive people may be present or where noise-sensitive activities may occur. Examples of noise-sensitive land uses include residences, schools, hospitals, and retirement homes. Examples of noise-sensitive activities are those that occur in locations such as churches and libraries. The nearest noise-sensitive receptors to the Project site are residences approximately 0.5-mile south of the site.

Existing Ambient Noise Conditions

Existing noise in the Project area can be attributed to various stationary and mobile sources, including tractor-trailer truck traffic, rail activity, wastewater treatment plant operation, and equipment operation at other nearby industrial sites. Other sources that contribute to the existing noise environment in the general site vicinity include local and regional roadway traffic on nearby local roads and highways. Noise monitoring previously conducted at nearby Rough and Ready Island concluded that the equivalent continuous noise level (Leq) generally ranges between 60 and 84 dBA, with higher levels from short-term increases in noise levels 85 dBA or higher (Port of Stockton, 2022).

REGULATORY SETTING

City of Stockton General Plan

The City's General Plan establishes maximum allowable noise exposure by land use type. For industrial land uses, noise levels between 70 and 80 Ldn are conditionally acceptable, and noise levels above 80 Ldn are unacceptable. The General Plan contains the following relevant policies related to noise:

- Policy SAF-2.8: Protect the community from health hazards and annoyance associated with excessive noise levels.

In addition, Action SAF-2.8A directs the City to prohibit new commercial, industrial, or other noise-generating land uses adjacent to existing sensitive noise receptors such as residential uses, schools, health care facilities, libraries, and churches if noise levels are expected to exceed 70 dBA Community Noise Equivalent (CNEL) when measured at the property line of the noise sensitive land use.

Action SAF-2.8B directs the City to require Projects that would locate noise sensitive land uses where the Projected ambient noise level is greater than the "normally acceptable" noise level to provide an acoustical analysis that meets certain requirements identified in the General Plan.

City of Stockton Code of Ordinances

Chapter 16.60, Noise Standards, of the City's Code of Ordinances establishes noise standards, identifies activities exempt from noise regulations, clarifies activities that are deemed violations of the ordinance, and outlines acceptable noise attenuation and mitigation measures. Section 16.60.030(A) states that construction activities and loading and unloading operations between the hours of 10:00 p.m. and 7:00 a.m. generating sound that creates a noise disturbance across a residential property line, is a violation of the noise ordinance.

Section 16.60.040(B)(2)(ii) states that the maximum sound level (Lmax) produced by industrial land uses or by other permitted noise-generating activities on any industrial or public facilities zoning district shall not exceed 80 dB, and the hourly equivalent sound level (Leq) from these land uses shall not exceed 70 dB during the daytime or nighttime hours as measured at the property line of any other adjoining industrial or public facilities district.

Section 16.60.050 requires the preparation of an acoustical study in instances where it has been determined that a Project may expose existing or proposed noise-sensitive land uses to noise levels exceeding applicable noise standards.

DISCUSSION OF IMPACTS

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?

Less-than-Significant Impact

Standards for ambient noise levels in the vicinity of the Project site are established by the City's General Plan and Code of Ordinances. The Project site is zoned for Industrial land uses, which allows ambient noise levels up to 70 Ldn and conditionally acceptable noise levels up to 80 Ldn. Existing ambient noise levels in the vicinity occasionally exceed these limits. The General Plan contains actions to protect the community with health hazards and annoyance associated with excessive noise levels, which include prohibiting noise-excessive development types near sensitive receptors, requiring projects that are projected to generate noise levels above the "normally acceptable" level to prepare an acoustical analysis, prohibiting noise from commercial uses above 75 Ldn at the nearest property line, and requiring new habitable structures to be set back from railroad tracks.

The Project would not include any new operational uses that would permanently increase ambient noise levels at the Project site. Project construction may generate a temporary increase in ambient noise levels within the immediate vicinity of the Project site. However, construction activities are not expected to result in ambient noise conditions that are above the "normally acceptable" noise level of 70 Ldn. Noise generated from Project construction would primarily include noise from the engines of heavy machinery operating on the Project site. Construction activities would include levee excavation, dredging of the channel bed, and addition of gravel and rip rap fill within the river. The Project would not include construction activities that are generally associated with excessive noise levels, such as pile driving or breaking and chipping concrete. While some activities may generate noise levels above 70 dBA intermittently throughout construction, these noises would not result in continuous ambient noise levels that exceed 70 Ldn at the Project site boundary. In addition, there are no noise sensitive receptors in the vicinity of the Project site. The nearest noise-sensitive receptors are residences approximately 0.5-mile south of the Project site. Therefore, intermittent construction noises

above the normally acceptable level of 70 dBA would not impact any noise-sensitive receptors. As such, the Project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project site in excess of standards established in the General Plan or Noise Ordinance. The impact would be ***less than significant.***

b) Generation of excessive groundborne vibration or groundborne noise levels?

No Impact

The Project would not include any new operational uses; therefore, no permanent increase in groundborne noise levels or vibration would occur. Project construction would not include activities which are known to cause excessive vibration or groundborne noise, such as blasting operations, pile driving, jackhammering, concrete breaking, or building demolition. Furthermore, as described above in Impact a), there are no sensitive receptors within 0.5-mile of the Project site. Therefore, the Project would not generate excessive groundborne vibration or groundborne noise levels. ***No impact*** would occur.

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?***

No Impact

The Project is not located in the vicinity of a private airstrip or an airport land use plan, nor is it located within two miles of a public airport. The nearest airport is the Stockton Metropolitan Airport, located approximately five miles southeast of the Project site. Therefore, the Project would not expose people residing or working int the Project areas to excessive noise levels associated with airport activities. ***No impact*** would occur.

3.6.14 Population and Housing

Would the project:	*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
a) Induce substantial unplanned 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 people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

There are no residences within or adjacent to the Project site. The nearest residential areas are located approximately 0.5 mile to the south adjacent to the southern side of State Route 4.

DISCUSSION OF IMPACTS

a, b) Induce substantial unplanned 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)? Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact

There are no residences within or adjacent to the Project site. The Project would not impact any existing residences or construct any new residences. The Project would increase cover depth of a RWCF pipeline under the San Joaquin River in order to meet permit conditions. This action would not increase the capacity of either the pipeline or the RWCF; therefore, the Project would not directly or indirectly induce population growth. No impact would occur.

3.6.15 Public Services

Would the project:	*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
a) 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:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

Fire services in the City are provided by the City of Stockton Fire Department. The nearest fire station to the Project site is Stockton Fire Station No. 1, located approximately one mile southeast of the Project site.

Police services in the City are provided by the City of Stockton Police Department, which is located approximately 2.5 miles east of the site.

The are seven schools within two miles of the Project site, including San Joaquin Elementary School, Washington Elementary School, One Success School, Victory Elementary School, Marshall Elementary School, Taylor Leadership Academy, and Hazelton Elementary School.

Parks within two miles of the Project site include Louis Park, Victory Park, and Honorable Sandra B. Smith Park, located approximately 1.5 miles northwest, 1.9 miles northeast, and 1.8 miles south, respectively.

DISCUSSION OF IMPACTS

a) 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:

- ***Fire Protection?***
- ***Police Protection?***
- ***Schools?***
- ***Parks?***
- ***Other Public Facilities?***

No Impact

The Project would not include the provision of any new governmental facilities. As discussed in *Section 4.2.14, Population and Housing*, the Project would not cause population growth which would result in the need for new or physically altered governmental facilities. The Project would not have any impact on fire protection, police protection, schools, or parks, or other public facilities. ***No impact*** would occur.

3.6.16 Recreation

Would the project:		*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
a)	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)	Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

Parks within two miles of the Project site include Louis Park, Victory Park, and Honorable Sandra B. Smith Park, located approximately 1.5 miles northwest, 1.9 miles northeast, and 1.8 miles south, respectively.

REGULATORY SETTING

City of Stockton General Plan

The City's General Plan contains the following relevant policies related to recreation:

- Policy LU-3.3: Maintain or expand the currently available amount of public park and open space area in each neighborhood.

DISCUSSION OF IMPACTS

a) 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? Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact

The Project would involve replacing cover over a buried pipeline in the San Joaquin River. As described in *Section 4.2.14, Population and Housing*, the Project would not cause population growth that could result in an increased usage of recreational facilities. There are no recreational facilities within the immediate vicinity of the Project site; therefore, no facilities would be impacted by construction or operation of the Project. The Project would not include any recreational facilities or require the construction or expansion of any recreational facilities. ***No impact*** would occur.

3.6.17 Transportation

Would the project:		*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*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)	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?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

The Project site does not contain any transportation facilities such as roads, bicycle lanes, or sidewalks. Local access to the Project site is provided via Navy Drive. Regional access to the Project site is provided via Interstate 5 from the north and south and State Route 4 from the east and west.

REGULATORY SETTING

City of Stockton General Plan

The City's General Plan contains the following relevant actions related to transportation:

- Policy LU-6.4: Ensure that land use decisions balance travel origins and destinations in as close proximity as possible and reduce vehicle miles traveled (VMT).
- Policy TR-4.2: Replace Level of Service (LOS) with: 1) VMT per capita; and 2) impacts to non-automobile travel modes, as the metrics to analyze impacts related to land use proposals under the CEQA, in accordance with SB 743.
- Policy TR-4.3: Use the threshold recommended by the California Office of Planning and Research for determining whether VMT impacts associated with land uses are considered significant under State environmental analysis requirements.

Action TR-1.1A of the General Plan directs the City to direct truck traffic to designated truck routes that facilitate efficient goods movement and minimize risk to areas with concentrations of sensitive receptors, such as schools.

DISCUSSION OF IMPACTS

a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

No Impact

The Project site does not contain any transportation facilities, such as public roads, bicycle lanes, or sidewalks. Trucks hauling materials needed for Project construction would access the Project site via regional freeways and would follow designated truck routes within the City. Therefore, the Project would not conflict with any program, plan, ordinance, or policy addressing the circulation system. ***No impact*** would occur.

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Less-than-Significant Impact

In accordance with the Technical Advisory on Evaluating Transportation Impacts in CEQA, Section 21099 of the Public Resources Code (PRC) states that the criteria for determining the significance of transportation impacts must promote: (1) reduction of GHG emissions; (2) development of multimodal transportation networks; and (3) a diversity of land uses. Section 21099 subd. (b)(1) further directed the Office of Planning and Research (OPR) to prepare and develop criteria for determining significance. The OPR identifies a screening threshold for small, land use projects as a project that generates or attracts fewer than 110 trips per day. Projects that generate fewer than this threshold may be assumed to cause a less-than-significant transportation impact (OPR 2018).

According to information regarding vehicle trips provided by the Project design engineer, the daily number of vehicle trips associated with the Project would not exceed 110 trips per day, which is the OPR's screening threshold for conducting a VMT analysis. Operation of the Project would not result in an increase in VMT, as no operational changes are proposed as part of the Project. Therefore, the Project would not conflict with CEQA Guidelines section 15064.3, subdivision (b). The impact would be ***less than significant***.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact

The Project would not alter any existing transportation facilities. Project work is all located within the San Joaquin River and in portions of the RWCF. Therefore, the Project would not create any transportation hazards due to geometric design features or incompatible uses. ***No impact*** would occur.

d) Result in inadequate emergency access?

No Impact

The Project would not alter or obstruct any emergency access or evacuation routes. The Project site does not include any transportation facilities; all work would be within the San Joaquin River and in portions of the RWCF site. All trucks hauling materials for construction would access the site via regional freeway networks and designated truck routes within the City. Therefore, the Project would not result in inadequate emergency access. ***No impact*** would occur.

3.6.18 Tribal Cultural Resources

Would the project:		*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
a)	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 size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i)	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)?	☐	☒	☐	☐
ii)	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 Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

ENVIRONMENTAL SETTING

The Project site is located at the far northern extent of the traditional territory of the North Valley Yokuts. Ethnographic information for the study area is summarized by Davis-King (2009) and other regional sources and indicates that Indigenous communities in the area were likely organized into distinct tribelets during the Contact Period. Yokuts tribelets were generally landholding social and political units centered around a primary village and associated territory, with members linked through shared ancestry. Population estimates for individual tribelets typically ranged from approximately 150 to 500 individuals (Kroeber 1925).

Each tribelet was generally led by a chief and supported by other leadership roles, including assistants, messengers, and religious leaders. Shamans played an important role in the spiritual and ceremonial life of Yokuts communities and were central participants in seasonal ceremonial practices. These ceremonies were closely tied to the annual subsistence cycle and reflected the cultural importance of seasonal resource availability and community gatherings.

Subsistence and settlement practices varied depending on local environmental conditions, but generally included hunting, fishing, and the gathering of acorns, seeds, waterfowl, and other natural resources. Acorns were a particularly important dietary staple throughout much of Yokuts territory. Settlement patterns typically involved winter aggregation in larger villages located near major waterways and lakeshores, where stored food resources were consumed, followed by seasonal dispersal into smaller family-based camps to take advantage of regionally available

resources in valley and foothill environments. Winter villages were often situated on elevated landforms to avoid seasonal flooding.

Prior to Euro-American contact, the Yokuts represented one of the largest Indigenous populations in California. Population estimates vary, but researchers have noted that Yokuts communities occupied a substantial portion of the Central Valley prior to the introduction of disease, displacement, and other disruptions associated with Euro-American settlement (Cook 1978).

REGULATORY SETTING

Tribal Cultural Resources AB 52

AB 52 (Chapter 532, Statutes 2014) required an update of the CEQA Guidelines to include questions related to impacts to tribal cultural resources. AB 52 establishes a consultation process with all California Native American Tribes on the NAHC List, as well as federal and non-federal recognized tribes. AB 52 also establishes a new class of resources: tribal cultural resources. Key components of AB 52 include consideration of tribal cultural values in determination of project impacts and mitigation and required tribal notice and meaningful consultation.

PRC Section 21080.3.2(b) states that consultation ends when either 1) parties agree to mitigation measures or avoid a significant effect on a tribal cultural resource, or 2) a party, acting in good faith and after reasonable effort concludes that mutual agreement cannot be reached.

State of California Public Resources Code

Section 21074 of the PRC defines historical resources related to tribal cultural resources.

a) "Tribal cultural resources" are either of the following:
    a. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are either of the following:
        A. Included or determined to be eligible for inclusion in the California Register of Historical Resources.
        B. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
    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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American Tribe.

b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

Section 5020.1(k) defines “Local register of historical resources” as a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution.

Section 5024.1 is the establishment of the California Register of Historical Resources (California Register).

NATIVE AMERICAN CONSULTATION

ASM Affiliates contacted the NAHC to request a search of the Sacred Lands File for the APE and a 0.5-mile records search radius. The Sacred Lands File indicated negative results for cultural resources within the search area. A list of contacts for six Native American groups was provided for further information: the Amah Mutsun Tribal Band, Confederated Villages of Lisjan Nation, Muwekma Ohlone Tribe of the San Francisco Bay Area, Northern Valley Yokut/Ohlone Tribe, Tule River Indian Tribe, and Wilton Rancheria. Consultation letters were sent to each Tribe by mail and email on December 18, 2025.

Three tribes responded to the City’s letter and requested to open consultation: the Confederated Villages of Lisjan Nation, the Muwekma Ohlone Tribe of the San Francisco Bay Area, and the Wilton Rancheria.

The City provided information about the Project to the Confederated Villages of Lisjan Nation via email in January 2026. The Tribe requested to be notified if cultural resources of Native American origin are discovered during Project construction, and provided recommended mitigation measures for accidental discovery of cultural resources and Native American remains, which have been incorporated into the mitigation measures included in this IS/MND. The Tribe had no further information or concerns to express regarding the Project.

The City provided information about the Project to the Muwekma Ohlone Tribe of the San Francisco Bay Area and a consultation meeting was requested by the tribe. A meeting was held with City and Muwekma Ohlone representatives on February 25, 2026. During the meeting, the representatives expressed their desire to have a tribal cultural monitor present for ground-disturbing activities associated with the Project, and for construction crews to receive a cultural sensitivity training prior to ground-disturbing work. The City agreed to incorporate these requests into the Project and they are reflected in the mitigation measures presented below.

The City provided information about the Project to the Wilton Rancheria and a consultation meeting was requested by the tribe. A meeting was held with City and Wilton Rancheria representatives on March 23, 2026. During the meeting, the City presented the Project and gave an overview of the CEQA process, and the tribe’s representatives asked questions about the Project. Wilton Rancheria agreed to submit requests in writing to the City and requested to be notified on any future Project alterations. No requests or follow-up was received from Wilton Rancheria following the meeting.

DISCUSSION OF IMPACTS

a) ***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 size and scope of the landscape,***

sacred place, or object with cultural value to a California Native American tribe, and that is:

i) 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)?

ii) 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 Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less-than-Significant Impact with Mitigation Incorporated

The results of the Cultural Resources Study indicated that there are no documented tribal cultural resources within the Project site (ASM Affiliates 2024). The City sent letters to representative of local Native American groups affiliated with the Project area to solicit input regarding tribal cultural resources that may be impacted by the proposed Project. As described above, a response was received from the Confederated Villages of Lisjan Nation, the Muwekma Ohlone Tribe of the San Francisco Bay Area, and the Wilton Rancheria. No other tribal cultural resources were identified within the Project site as a result of consultation; however, there is potential for archaeological resources, which may be tribal cultural resources, to be discovered during ground-disturbing activities. As a result of tribal consultation, Mitigation Measure TCR-1 and TCR-2 were incorporated into the IS/MND. Mitigation Measure TCR-1 requires that all construction personnel shall receive a Tribal Cultural Sensitivity Training, if they have not yet received the training. Mitigation Measure TCR-2 requires that a qualified Tribal Cultural Monitor from the Muwekma Ohlone Tribe be present during all ground-disturbing activities associated with the Project. With implementation of these measures, along with Mitigation Measure CUL-1, the proposed Project would not result in a substantial adverse effect to tribal cultural resources. The impact would be ***less than significant with mitigation incorporated***.

MITIGATION MEASURES

Mitigation Measure TCR-1. Tribal Cultural Sensitivity Training

The City shall coordinate with the construction contractor to ensure that, prior to the initiation of ground-disturbing activities, all Project personnel, including contractors and subcontractors, participate in a Tribal Cultural Sensitivity Training conducted by Muwekma Ohlone Tribe Incorporated (MOTI) representatives. This training shall provide education regarding the Tribe's history, cultural resources, legal protections, and procedures in the event of an inadvertent discovery. This training shall not be required if the contractor has previously undergone this specific training.

Mitigation Measure TCR-2. Tribal Cultural Monitoring

The City shall retain a qualified Tribal Cultural Monitor designated by MOTI to be present during all ground-disturbing activities, including but not limited to grading, dredging, trenching, excavation, boring, and any subsurface work. Monitoring shall occur from the commencement of

ground disturbance through Project completion or until such time as monitoring is determined no longer necessary through consultation.

3.6.19 Utilities and Service Systems

Would the project:	*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*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 management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

ENVIRONMENTAL SETTING

The Project site includes portions of the City's RWCF, which is the City's primary facility for wastewater, treating up to 55 million gallons of wastewater per day. The RWCF operates under an NPDES permit and is subject to the USACE's Nationwide Permit Requirements and 33 CFR Part 330, which is specific to regional conditions in California and the USACE's Sacramento District.

DISCUSSION OF IMPACTS

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?

No Impact

The Project would not result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities. The Project includes bringing the cover depth of a submerged wastewater pipeline into compliance with state and federal regulations. ***No impact*** would occur.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

Less-than-Significant Impact

The Project would require some water for temporary construction activities on-site for activities such as watering exposed soils. This demand for water would be temporary and would not be substantial. The Project would not include any change in existing operations that would generate an increased demand for water; therefore, no permanent increase in water demand would occur. The impact would be ***less than significant***.

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?

No Impact

The Project would not include any activities that would increase residents, employees, or visitors to the area. The Project would not generate any temporary or permanent increase in demand for wastewater facilities. ***No impact*** would occur.

d-e) 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? Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less-than-Significant Impact

The Project would not include demolition of any structures; therefore, construction activities would not generate substantial amounts of solid waste. The State of California requires all cities to divert 65 percent of waste materials from landfills. Chapter 8.28, Construction and Demolition Debris Waste Reduction, of the City's Code of Ordinances outlines requirements for the disposal of construction and demolition debris. All applicants for a City permit for construction, demolition, or renovation projects must comply with the City's construction and demolition waste reduction program. For City-sponsored projects, applicants must complete and submit a construction and demolition recycling plan at the time of permit application and must submit construction and demolition recycling reports and related receipts and weight tickets within 14 days of final project clean up. As a City-sponsored Project, the Project would comply with these requirements in order to meet the City's construction and demolition waste diversion goals. Therefore, the Project would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure. The Project would comply with all federal, state, and local management and reduction statutes and regulations related to solid waste. The impact would be ***less than significant***.

3.6.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	*Potentially Significant Impact*	*Less-than-Significant Impact with Mitigation Incorporated*	*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

CAL FIRE is responsible for creating and updating Fire Hazard Severity Zone Maps, which show areas of Moderate, High, and Very High Fire Hazard in California. The Project site is not located within a designated Fire Hazard Severity Zone (CAL FIRE 2025). The nearest Very High Fire Hazard Severity Zone is approximately 20 miles south, south of the City of Tracy.

The City's General Plan identifies that the risk of wildfire in Stockton, and larger San Joaquin County, is relatively low due to the lack of forest or grassland area that could serve as fuel sources for a wildfire. Although the wildfire risk in Stockton is low, there is a risk of structural fires that can occur due to faulty wiring or mechanical equipment and combustible construction materials.

DISCUSSION OF IMPACTS

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact

As discussed in *Section 4.2.17, Transportation*, the Project would have no impact on emergency evacuation routes, as there are no transportation facilities within the Project site. The City does not have an Emergency Operations Plan or Emergency Evacuation Plan. The Project would not interfere with any policies of the General Plan related to emergency preparedness and

operations. Therefore, the Project would not substantially impair an adopted emergency response plan or emergency evacuation plan. ***No impact*** would occur.

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?

No Impact

Wildfire risk within the Project site area is relatively low due to the flat topography and absence of grassland and forest vegetation. The Project would not result in any conditions which would exacerbate wildfire risk. Construction activities on the Project site would consist of increasing the cover depth of a submerged wastewater pipeline, excavation, temporary levee modifications to permit equipment access, and addition of gravel and rip rap around the pipeline. These activities would not change the conditions of the Project site in a way that would exacerbate wildfire risk. No operational changes would occur as part of the Project. Therefore, the Project would not expose Project occupants to pollutant concentrations from wildfire or uncontrolled spread of a wildfire. ***No impact*** would occur.

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?

No Impact

The Project would not require the installation or maintenance of associated infrastructure such as roads, fuel breaks, emergency water sources, power lines, or other utilities, that would exacerbate wildfire risk or result in impacts to the environment. ***No impact*** would occur.

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?

No Impact

The Project would include increasing the cover depth of a submerged wastewater pipeline in the San Joaquin River, as well as terrestrial work such as temporary levee modification. These alterations would not expose any people or structures to significant risk as a result of post-fire instability. The Project is located in a flat area and is not near any significant slopes. Additionally, there are no residences within 0.5-mile of the Project site. ***No impact*** would occur.

3.6.21 Mandatory Findings of Significance

		Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
a)	Does the project have the potential to substantially 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 that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

DISCUSSION OF IMPACTS

a) Does the project have the potential to substantially 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?

Less-than-Significant Impact with Mitigation Incorporated

The proposed Project would have the potential to impact special-status birds, common native nesting birds, roosting bats, bumblebees, beetles, pond turtles, and fish. As described in *Section 4.2.4, Biological Resources*, the Project would implement Mitigation Measures BIO-1, BIO-2, BIO-3a, BIO-3b, BIO-4, BIO-5a, BIO-6a, BIO-6b, BIO-6c, BIO-6d, and BIO-7 to reduce impacts to these species to a less-than-significant level. The Project would not result in any permanent impacts to habitat for special-status species or threaten to eliminate a plant or animal community. The impact would be less than significant with mitigation incorporated.

As discussed in *Section 4.2.5, Cultural Resources*, there are no cultural resources within the Project site that are eligible for inclusion on the National Register or California Register. Mitigation Measure CUL-1 would be implemented which requires for the proper analysis and treatment of any archaeological resources that may be discovered by Project construction work.

Mitigation Measures TCR-1 and TCR-2 would require construction crews to receive a Tribal Cultural Sensitivity Training and for a qualified Tribal Monitor to be present during Project ground-disturbing activities. With implementation of these measures, the Project would not eliminate any important examples of major periods of California history or prehistory. The impact would be ***less than significant with mitigation incorporated.***

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)?

Less-than-Significant Impact

Cumulatively considerable means that the incremental effects of an individual 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. No other projects are currently proposed within the vicinity of the proposed Project site.

Construction of the Project is not anticipated to result in any impacts that could combine with impacts associated with other projects to produce an augmented cumulative effect. Impacts would be ***less than significant***.

c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

Less-than-Significant Impact

Potential impacts to human beings have been addressed in this IS/MND, including impacts related to air quality, noise, and transportation. Project construction activities would not cause significant temporary impacts to humans due to the generation of criteria air pollutants, as discussed in *Section 4.2.3, Air Quality*. As discussed in *Section 4.2.13, Noise,* Project noise impacts were found to be less than significant; therefore, no cumulative noise impact on human beings would occur. As discussed in *Section 4.2.17, Transportation*, Project transportation impacts were concluded to be less than significant. Overall impacts would be ***less than significant***.

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APPENDIX A. BIOLOGICAL RESOURCES TECHNICAL REPORT

Stockton San Joaquin Rover Pipeline Remediation Project

Biological Resources Technical Report

Stockton, San Joaquin County, California









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List of Acronyms

AMM	Avoidance and Minimization Measure
BCC	USFWS Birds of Conservation Concern
BRTR	Biological Resources Technical Report
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CFP	California Fully Protected Species
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	County of San Joaquin
Corps	U.S. Army Corps of Engineers
CPRC	California Public Resources Code
CSRL	California Soils Resource Lab
CWA	Clean Water Act
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Federal Endangered Species Act
Inventory	California Native Plant Society Rare Plant Inventory
MBTA	Migratory Bird Treaty Act
NCCP	Natural Community Conservation Plan
NETR	National Environmental Title Research
NOAA	National Oceanic and Atmospheric Administration
NMFS	National Marine Fisheries Service
NPPA	California Native Plant Protection Act
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
OHWM	Ordinary High Water Mark
Rank	California Rare Plant Ranks
RHA	Rivers and Harbors Act
RWQCB	Regional Water Quality Control Board
SC	State Candidate
SFEI	San Francisco Estuary Institute
SSC	Species of Special Concern
SSI	Special-status Invertebrates
SWRCB	State Water Resource Control Board
TOB	Top of Bank
USC	U.S. Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WBWG	Western Bat Working Group
WRA	WRA, Inc.
WRC	Wastewater Recovery Center

1.0 INTRODUCTION

This Biological Resources Technical Report evaluates existing biological resources, potential impacts, and mitigation measures (if required) for the San Joaquin River Pipeline Depth of Cover Remediation Project located on the San Joaquin River in the City of Stockton, San Joaquin County, California (Appendix A – Figure 1). The proposed project (Project) involves repairs to depth of cover for one existing 36-inch diameter pipeline crossing the San Joaquin River from the City of Stockton Wastewater Recovery Center (WRC), as a precondition of the Plant's lease with the California State Lands Commission (SLC). The Project will involve equipment and materials staging, landside levee excavation for work access, and in-water work including excavation and the addition of rip rap and gravel fill above and surrounding the pipeline as needed.

1.1 Overview and Purpose

The City of Stockton proposes improvements to bring the cover depth of the 36-inch pipeline into compliance with state and federal regulations where the minimum cover is currently less than 5 feet. The total Project Area is 16.55 acres (see **Error! Reference source not found.**) and the depth of cover remediation area within the river is approximately 4,703 square feet (0.11 acre). The Study Area encompasses the Project Area and an additional buffer accounting for Project-related disturbance, for a total Study Area acreage of 26.97 acres.

This Biological Resources Technical Report provides an assessment of biological resources within the Study Area and immediate vicinity. The assessment included an initial site walk, focused rare plant survey and a wildlife habitat assessment. The purpose of the assessment was to develop and gather information on sensitive land cover types and special-status plant and wildlife species to support an evaluation of the Project under the California Environmental Quality Act (CEQA). This report describes the results of the site visit, which assessed the Study Area for (1) the presence of sensitive land cover types, special-status plant species, and special-status wildlife species, (2) the potential for the site to support special-status plant and wildlife species. Based on the results of the site assessment, potential impacts to sensitive land cover types and special-status species resulting from the proposed project were evaluated. If the project has the potential to result in significant impacts to these biological resources, measures to avoid, minimize, or mitigate for those significant impacts are described.

A biological resources assessment provides general information on the presence, or potential presence, of sensitive species and habitats. Additional focused studies (such as protocol level pollinator surveys and giant garter snake surveys) may be required to support regulatory permit applications or to implement mitigation measures included in this report. This assessment is based on information available at the time of the study and on-site conditions that were observed on the dates the site was visited. Conclusions are based on currently available information used in combination with the professional judgement of the biologists completing this study.

1.2 Project Description

1.2.1 Project Purpose and Need

The City of Stockton proposes improvements to depth of cover for an existing 36-inch diameter pipeline which crosses the San Joaquin River at the Wastewater Recovery Center (WRC). This

pipeline connects the main WRC (west of the river) and tertiary WRC facilities. Due to river scour, the cover above the pipeline at the river bottom has receded below the minimum depth of cover specified by the facility's lease from the SLC (City of Stockton 2023).

1.2.2 Project Activities

The proposed project shall involve both in-water and terrestrial work, including landside levee excavation, dredging/excavation of the channel bed above and around the pipeline, and the addition of gravel and rip rap fill above and around the pipeline. A total of 115 cubic yards (CY) of existing natural cover above and around the pipeline will be excavated and replaced with 192 CY of riprap and 10 CY of clean gravel fill. The gravel fill will cover approximately 283 square feet in the area immediately around the pipeline, while the rip rap fill will be used as both pipeline cover and backfill to match the existing grade of excavated natural material at the river bottom. The depth of fill will vary within the remediation area above the pipeline, ranging from -18 feet to -14 feet on the channel bottom. Multiple keyways will be added to augment structural stability of the riprap. The total area of fill on the channel bed is approximately 4,703 square feet (0.11 acres).

An excavated pad with curb and gutter improvements northeast of the pipeline will serve as the staging area for construction equipment, stockpiling, and turnaround. The staging area will be accessed via existing plant roadways entering from Highway 4 and/or Navy Drive (Figure 3). Material and equipment delivery will be via a graded ramp to the levee crown on the north side of the river. Any necessary levee grading will be limited to the land side of the feature. A clamshell dredging process using a crane with clamshell attachments or a long reach excavator will excavate the existing natural cover necessary for the substrate repairs, while a crane or long reach excavator will also place the gravel and riprap fill through the water column to the channel bed.

Portable barges will transport cut and fill material between the staging area and the in-channel work site. Dredged materials will be dewatered by decanting within the river channel or within the landside staging area. Dredged materials will be placed in containers on the portable barges and then ferried back to the loading area along the levee. Here containers will be unloaded from the barge onto the levee top, and their contents then emptied into the level staging area to dry. Rip rap fill materials will be loaded from the staging area, placed on the portable barges with a crane and ferried back to the work area to be placed over the pipeline via a crane with clamshell attachment or a long reach excavator.

Water quality protections during construction activities will include spill prevention and containment measures on the barges, including sorbent mats, spill kits, brooms, buckets, and other equipment as necessary; a Stormwater Prevention Plan (SWPPP) and Best Management Practices (BMPs) for earthwork areas including the use of fiber rolls and/or silt fences as needed; a Spill Prevention, Control, and Countermeasures Plan (SPCC Plan) for equipment operating near the water; and non-structural measures, such as qualified and trained personnel, good housekeeping, and documented emergency procedures. Silt curtains will also be placed around the work site within the water to limit any construction-generated turbidity to the immediate work area.

Project related construction activities are expected to begin in the summer of 2027, with an estimated total construction window of six to seven weeks: three weeks to construct the staging

area, access pad and ramp; one week for dredging; one week for rip rap placement and up to two weeks for removal of the access pad and ramp after the in-water work is completed. An in-water work window of August 1 to November 30 will be implemented to avoid and minimize potential effects from construction to aquatic species in the San Joaquin River.

1.3 Summary of Results

The Project is expected to result in temporary and permanent impacts to the San Joaquin River levee, including ruderal/developed, northern California walnut groves, and riparian woodland land cover types. Project activities will result in temporary and permanent impacts to jurisdictional aquatic resources. Land cover impacts are detailed in Table 2, Section 5.1.

No special-status plant species have potential to occur within the Study Area. Fourteen (14) special-status wildlife species have potential to occur in the Study Area, including:

- Green sturgeon (*Acipenser medirostris* pop. 1). Federal Threatened
- White Sturgeon (*Acipenser transmontanus*). State Candidate Threatened
- Northwestern pond turtle (*Actinemys marmorata*). Federal Proposed Threatened (FPT), CDFW Species of Special Concern (SSC)
- Crotch bumble bee (*Bombus crotchii*). State Candidate Endangered (SCE)
- Swainson's hawk (*Buteo swainsoni*). State Threatened
- Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). Federal Threatened
- Delta smelt (*Hypomesus transpacificus*). State Endangered and Federal Threatened
- Steelhead - Central Valley DPS (*Oncorhynchus mykiss irrideus* pop. 11). Federal Threatened
- Central Valley spring-run ESU Chinook salmon (*Oncorhynchus tshawytscha* pop. 11). Federal Threatened
- Sacramento River winter-run ESU Chinook salmon (*Oncorhynchus tshawytscha* pop. 11). Federal Endangered
- Northern harrier (*Circus hudsonia*). SSC
- White-tailed kite (*Elanus leucurus*). CFP
- Loggerhead shrike (*Lanius ludovicianus*). SSC, BCC
- Long-eared myotis (*Myotis evotis*). WBWG Medium Priority

In addition, the Study Area has the potential to support non-status birds with baseline legal protections. Mitigation measures and best management practices have been developed and provided herein to avoid impacts to these resources.

Table 1. Summary of Biological Resources Evaluation

CEQA Assessment Category[1] IV – Biological Resources	Biological Resources Considered	Relevant Laws & Regulations	Responsible Regulatory Agency	Summary of Findings & Report Section[2]
Question A. **Special-status Species**	Special-status Plants Special-status Wildlife Designated Critical Habitat	Federal Endangered Species Act CA Endangered Species Act CA Native Plant Protection Act Migratory Bird Treaty Act Bald & Golden Eagle Protection Act	U.S. Fish & Wildlife Service National Marine Fisheries Service CA Department of Fish & Wildlife	Potentially significant impacts were identified, and mitigation measures are included that reduce those impacts to a level that is less than significant. **See Section 7.1 for more information.**
Question B. **Sensitive natural communities & riparian habitat**	Sensitive Natural Communities Streams, Lakes & Riparian Habitat	CA Fish & Game Code Oak Woodland Conservation Act Porter-Cologne Act Clean Water Act	CA Department of Fish & Wildlife U.S. Army Corps of Engineers U.S. Environmental Protection Agency State Water Resources Control Board Regional Water Quality Control Board	Potentially significant impacts were identified, and mitigation measures are included that reduce those impacts to a level that is less than significant. **See Section 7.2 for more information.**
Question C. **State and federally protected wetlands**	Wetlands Unvegetated surface waters	Clean Water Act: Sections 404/401 Rivers & Harbors Act: Section 10 Porter-Cologne Act	U.S. Army Corps of Engineers U.S. Environmental Protection Agency State Water Resources Control Board Regional Water Quality Control Board	Potentially significant impacts were identified, and mitigation measures are included that reduce those impacts to a level that is less than significant. **See Section 7.3 for more information**

[1] *CEQA Questions have been summarized here, see Section 6.2 for details.*
[2] *As given in this report, see Section 5.0 subheadings.*

Table 1. Summary of Biological Resources Evaluation

CEQA Assessment Category[1] IV – Biological Resources	Biological Resources Considered	Relevant Laws & Regulations	Responsible Regulatory Agency	Summary of Findings & Report Section[2]
Question D. **Fish & Wildlife corridors**	Essential Fish Habitat Wildlife Corridors	CA Fish & Game Code Magnuson-Stevens Fishery Conservation & Management Act	CA Department of Fish and Wildlife National Marine Fisheries Service	Potentially significant impacts were identified, and mitigation measures are included that reduce those impacts to a level that is less than significant. **See Section 7.1 for more information**
Question E. **Local policies**	Protected Trees Coastal zone resources Other biological protections	Local Tree Ordinance General Plan (e.g. Stream & Wetland Setbacks) Local ordinances	Local and regional agencies CA Coastal Commission San Francisco Bay Conservation and Development Commission	Potentially significant impacts were identified, and mitigation measures are included that reduce those impacts to a level that is less than significant. **See Section 7.5 for more information**
Question F. **Local, state, federal conservation plans**	Habitat Conservation Plans Natural Community Conservation Plans	Federal Endangered Species Act Natural Community Conservation Planning Act	U.S. Fish and Wildlife Service CA Department of Fish and Wildlife	Potentially significant impacts were identified, and mitigation measures are included that reduce those impacts to a level that is less than significant. **See Section 7.6 for more information**

2.0 REGULATORY BACKGROUND

The following sections explain the regulatory context of the biological assessment, including applicable laws and regulations that were applied to the field investigations and analysis of potential project impacts. Table 1 shows the correlation between these regulations and each Biological Resources question in the Environmental Checklist Form (Appendix G) of the CEQA guidelines.

2.1 Federal and State Regulatory Setting

2.1.1 Vegetation and Aquatic Communities

CEQA provides protections for particular vegetation types defined as sensitive by the California Department of Fish and Wildlife (CDFW) and aquatic features protected by laws and regulations administered by the U.S Army Corps of Engineers (Corps), State Water Resources Control Board (SWRCB), and Regional Water Quality Control Boards (RWQCB). The laws and regulations that provide protection for these resources are summarized below.

Sensitive Natural Communities: Sensitive natural communities include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. CDFW ranks sensitive communities as "threatened" or "very threatened" (CDFW 2024a) and keeps records of their occurrences in its California Natural Diversity Database (CNDDB; CDFW 2024b). Natural communities are ranked 1 through 5 in the CNDDB based on NatureServe's (2020) methodology, with those communities ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or U.S. Fish and Wildlife Service (USFWS) must be considered and evaluated under CEQA (California Code of Regulations [CCR] Title 14, Div. 6, Chap. 3, Appendix G). In addition, this general class includes oak woodlands that are protected by local ordinances under the Oak Woodlands Protection Act and Section 21083.4 of California Public Resources Code (CPRC).

Waters of the United States, Including Wetlands: The Corps regulates “Waters of the United States” under Section 404 of the Clean Water Act (CWA). Waters of the United States are defined in the Code of Federal Regulations (CFR) as including the territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, such as tributaries, lakes and ponds, impoundments of waters of the U.S., and wetlands that are hydrologically connected with these navigable features (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Unvegetated waters including lakes, rivers, and streams may also be subject to Section 404 jurisdiction and are characterized by an ordinary high water mark (OHWM) identified based on field indicators such as the lack of vegetation, sorting of sediments, and other indicators of flowing or standing water. The placement of fill material into Waters of the United States generally requires a permit from the Corps under Section 404 of the CWA.

The Corps also regulates construction in navigable waterways of the U.S. through Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 U.S. Code [USC] 403). Section 10 of the RHA

requires Corps approval and a permit for excavation or fill, or alteration or modification of the course, location, condition, or capacity of, any port, roadstead, haven, harbor, canal, lake, harbor or refuge, or enclosure within the limits of any breakwater, or of the channel of any navigable water of the United States. Section 10 requirements apply only to navigable waters themselves, and are not applicable to tributaries, adjacent wetlands, and similar aquatic features not capable of supporting interstate commerce.

Waters of the State, Including Wetlands: The term "Waters of the State" is defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The SWRCB and nine RWQCB protect waters within this broad regulatory scope through many different regulatory programs. Waters of the State in the context of a CEQA Biological Resources evaluation include wetlands and other surface waters protected by the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (SWRCB 2019). The SWRCB and RWQCB issue permits for the discharge of fill material into surface waters through the State Water Quality Certification Program, which fulfills requirements of Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a Clean Water Act permit are also required to obtain a Water Quality Certification. If a project does not require a federal permit but does involve discharge of dredge or fill material into surface waters of the State, the SWRCB and RWQCB may issue a permit in the form of Waste Discharge Requirements.

Sections 1600-1616 of California Fish and Game Code: Streams and lakes, as habitat for fish and wildlife species, are regulated by CDFW under Sections 1600-1616 of California Fish and Game Code (CFGC). Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term "stream," which includes creeks and rivers, is defined in the CCR as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life [including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). The term "stream" can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG 1994). Riparian vegetation has been defined as "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

2.1.2 Special-status Species

Endangered and Threatened Plants, Fish, and Wildlife. Specific species of plants, fish, and wildlife species may be designated as threatened or endangered by the federal Endangered Species Act (ESA), or the California Endangered Species Act (CESA). Specific protections and permitting mechanisms for these species differ under each of these acts, and a species' designation under one law does not automatically provide protection under the other.

The ESA (16 USC 1531 et seq.) is implemented by the USFWS and the National Marine Fisheries Service (NMFS). The USFWS and NMFS maintain lists of endangered and threatened plant and animal species (referred to as "listed species"). "Proposed" or "candidate" species are those that are being considered for listing and are not protected until they are formally listed as threatened or endangered. Under the ESA, authorization must be obtained from the USFWS or NMFS prior to

take of any listed species. “Take” under the ESA is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Take under the ESA includes direct injury or mortality to individuals, disruptions in normal behavioral patterns resulting from factors such as noise and visual disturbance and impacts to habitat for listed species. Actions that may result in take of an ESA-listed species may obtain a permit under ESA Section 10, or via the interagency consultation described in ESA Section 7. Federal-listed plant species are only protected when removal or destruction occurs on federal land; however, if a federal agency authorizes, funds, or carries out an action, that agency must insure through Section 7 consultation that the action is not likely to jeopardize the continued existence of the species.

The ESA also provides for designation of critical habitat, which are specific geographic areas containing physical or biological features “essential to the conservation of the species.” Protections afforded to designated critical habitat apply only to actions that are funded, permitted, or carried out by federal agencies. Critical habitat designations do not affect activities by private landowners if there is no other federal agency involvement.

The CESA (CFGC 2050 et seq.) prohibits the take of any plant and animal species that the CFGC determines to be an endangered or threatened species in California. CESA regulations include take protection for threatened and endangered plants on private lands, as well as extending this protection to candidate species that are proposed for listing as threatened or endangered under CESA. The definition of a "take" under CESA ("hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") only applies to direct impact to individuals, and does not extend to habitat impacts or harassment. CDFW may issue an Incidental Take Permit under CESA to authorize take if it is incidental to otherwise lawful activity and if specific criteria are met. Take of these species is also authorized if the geographic area is covered by a Natural Community Conservation Plan (NCCP), as long as the NCCP covers that activity. CDFW may also authorize take for voluntary restoration projects through the Restoration Management Permit (RMP).

Fully Protected Species and Designated Rare Plant Species. This category includes specific plant and wildlife species that are designated in the CFGC as protected even if not listed under CESA or ESA. Fully Protected Species includes specific lists of birds, mammals, reptiles, amphibians, and fish designated in CFGC. Fully protected species may not be taken or possessed at any time. No licenses or permits may be issued for take of fully protected species, except for necessary scientific research and conservation purposes. The definition of "take" is the same under the California Fish and Game Code and the CESA. By law, CDFW may not issue an Incidental Take Permit for Fully Protected Species. Under the California Native Plant Protection Act (NPPA), CDFW has listed 64 “rare” or “endangered” plant species, and prevents “take,” with few exceptions, of these species. CDFW may authorize take of species protected by the NPPA through the Incidental Take Permit process, or under a NCCP. CDFW may also authorize take for voluntary restoration projects through the Restoration Management Permit (RMP).

Special Protections for Nesting Birds and Bats. The federal Bald and Golden Eagle Protection Act provides relatively broad protections to both of North America’s eagle species [bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*)] that in some regards are similar to those provided by the ESA. In addition to regulations for special-status species, most native birds in the United States, including non-status species, have baseline legal protections under the Migratory Bird Treaty Act of 1918 and CFGC, i.e., sections 3503, 3503.5 and 3513.

Under these laws/codes, the intentional harm or collection of adult birds as well as the intentional collection or destruction of active nests, eggs, and young is illegal. For bat species, the Western Bat Working Group (WBWG) designates conservation status for species of bats, and those with a high or medium-high priority are typically given special consideration under CEQA.

Essential Fish Habitat. The Magnuson-Stevens Fishery Conservation and Management Act provides for conservation and management of fishery resources in the U.S., administered by NMFS. This Act establishes a national program intended to prevent overfishing, rebuild overfished stocks, ensure conservation, and facilitate long-term protection through the establishment of Essential Fish Habitat (EFH). EFH consists of aquatic areas that contain habitat essential to the long-term survival and health of fisheries, which may include the water column, certain bottom types, vegetation (e.g., eelgrass (*Zostera* spp.)), or complex structures such as oyster beds. Any federal agency that authorizes, funds, or undertakes action that may adversely affect EFH is required to consult with NMFS.

Species of Special Concern, Movement Corridors, and Other Special-status Species under CEQA. A Species of Special Concern (SSC) is a species formally designated by the CDFW which meets one or more criteria related to a Federal ESA status (if it is not listed under CESA), including extirpation from California, documented population declines, or small population size within California and risk of declines. In addition, CDFW has developed a special animals list as "a general term that refers to all of the taxa the CNDDB is interested in tracking, regardless of their legal or protection status." This list includes lists developed by other organizations, including for example, the Audubon Watch List Species, the Bureau of Land Management Sensitive Species, and USFWS Birds of Conservation Concern. Plant species on the California Native Plant Society (CNPS) Rare Plant Inventory (Inventory; CNPS 2024) with California Rare Plant Ranks (Rank) of 1 and 2, as well as some with a Rank of 3 or 4, are also considered special-status plant species and must be considered under CEQA. Some Rank 3 and Rank 4 species are typically only afforded protection under CEQA when such species are particularly unique to the locale (e.g., range limit, low abundance/low frequency, limited habitat) or are otherwise considered locally rare. Additionally, any species listed as sensitive within local plans, policies and ordinances are likewise considered sensitive. Movement and migratory corridors for native wildlife (including aquatic corridors) as well as wildlife nursery sites are given special consideration under CEQA.

2.2 Local Plans and Policies

City of Stockton General Plan. The City of Stockton General Plan contains policies pertaining to the following biological resources categories:

- Wetlands, streams, riparian, and aquatic areas (Policy LU-5.2, LU-6.2.)
- Vegetation communities (Policy LU-5.1, LU-5.2)

City of Stockton Tree Ordinance. The City of Stockton Tree Ordinance requires a permit for the removal of heritage trees from any parcel of property in the City. The Ordinance defines a "heritage tree" as:

1. Any valley oak (*Quercus lobata*), coast live oak (*Q. agrifolia*), or interior live oak (*Q. wislizenii*) with a diameter (measured 24 inches above grade) of 16 inches or more.
2. For oak trees of the species above with multiple trunks, the combined trunk diameter shall be used for all trunks of 6 inch diameter or greater.

The City of Stockton may require mitigation for the removal of heritage trees as a condition of approval for a tree permit. Residential and commercial applicants are generally required to replace removed trees at a minimum ratio of 3 new trees for each heritage tree removed, with the size of replacement trees determined by the City based on the size of the tree that was removed. The size of each replacement would ultimately be determined by the City's Community Development Director.

The City of Stockton also defines "public trees" as all trees growing on any public property or public right-of-way owned by the City of Stockton, including boulevards, parks, playgrounds, dikes, parkways, streets, sidewalks, alleys and public parking lots. A permit is required prior to the removal, replacement, or relocation of a public tree. Replacements of public trees are generally required at a minimum ratio of 1 new tree for each public tree that was removed.

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSHCP).
The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSHCP) is a 50-year plan managed by San Joaquin County to balance open space conservation and conversion to other land uses such as development. Essentially, the SJMSHCP facilitates county-wide land use and mitigation planning and offers a streamlined permitting process for entities that impact listed species and require mitigation. The SJMSHCP holds permits from the USFWS and CDFW for certain activities that result in or may result in impacts to listed species, i.e. "incidental take." The SJMSHCP provides take authorization to various entities in exchange for a mitigation fee, which the SJMSHCP then uses to acquire and conserve lands to fulfill the mitigation obligations in a holistic and comprehensive way. SJMSHCP Covered Species include GGS and SWHA (SJCOG 2000).

Permitted activities include urban development, mining, expansion of existing urban boundaries, non-agricultural activities occurring outside of urban boundaries, levee maintenance undertaken by the San Joaquin Area Flood Control Agency, transportation projects, school expansions, non-federal flood control projects, new parks and trails, maintenance of existing facilities for non-federal irrigation district projects, utility installation, maintenance activities, managing Preserves, and similar public agency projects (SJCOG 2000).

The City of Stockton is a permittee of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) and has opted for coverage under the SJMSCP for incidental take of covered species associated with future urban growth within the City's service area. As such, the City is required to mitigate for project-related conversion of natural lands and special-status species through in-lieu fees, habitat land dedication, purchase of mitigation bank credits, or by proposing an alternative mitigation plan consistent with the goals of the SJMSCP.

3.0 ASSESSMENT METHODOLOGY

3.1 General Site Assessment

On May 28, 2024, WRA, Inc. (WRA) biologists visited the Study Area to map vegetation, aquatic features, and other land cover types; document plant and wildlife species present; and evaluate on-site habitat for the potential to support special-status species as defined by CEQA. Prior to the site visit, WRA biologists reviewed literature resources and performed database searches to assess the potential for sensitive land cover types and special-status species, including:

- Web Soil Survey (USDA 2024)
- Stockton West 7.5-minute U.S. Geological Survey (USGS) quadrangle (USGS 2021)
- Contemporary aerial photographs (Google Earth 2024)
- Historical aerial photographs (NETR 2024)
- National Wetlands Inventory (USFWS 2024a)
- California Aquatic Resources Inventory (SFEI 2023)
- CNDDB (CDFW 2024b)
- CNPS Inventory (CNPS 2024)
- Consortium of California Herbaria (CCH1 2024, CCH2 2024)
- USFWS Information for Planning and Consultation (USFWS 2024b)
- eBird Online Database (Cornell Lab of Ornithology 2024)
- California Bird Species of Special Concern in California (Shuford and Gardali 2008)
- California Amphibian and Reptile Species of Special Concern (Thomson et al. 2016)
- A Field Guide to Western Reptiles and Amphibians (Stebbins 2003)
- A Manual of California Vegetation, Online Edition (CNPS 2024)
- California Natural Community List (CDFW 2024a)
- Database searches (i.e., CNDDB, CNPS) for special-status species focused on the Stockton West, Terminous, Lodi South, Waterloo, Holt, Stockton East, Union Island, Lathrop, and Manteca USGS 7.5-minute quadrangles.

Following the remote assessment, WRA biologists completed a field review over the course of 1 day to document: (1) land cover types (e.g., vegetation communities, aquatic resources), (2) existing conditions and to determine if such provide suitable habitat for any special-status plant or wildlife species, (3) if and what type of aquatic land cover types (e.g., wetlands) are present, and (4) if special-status species are present.[3]

Within the Study Area, direct access to the ordinary high water mark (OHWM) was not feasible due to safety issues (i.e., steep levee slopes and fast, high volume flows within the San Joaquin). Therefore, the OHWM was identified using a combination of indicators observed on the ground, most often corresponding to changes in topography and dominant vegetation, in addition to surface water and other indicators. The location of the OHWM was hand drawn in the field on aerial photographs and topographical maps for subsequent digitizing in ArcGIS. Additionally, inundation signatures visible in recent and historical aerial imagery from Google Earth (April 6, 2022) were used to determine OHWM elevation. Based on a hydrologic analysis, WRA determined that the aerial photographs represent periods with normal to below-normal precipitation levels. Using imagery from normal periods allowed WRA to identify the normal extent of wetland conditions across the site. Using imagery from drier-than-normal periods allowed WRA to

[3] Due to the timing of the assessment, the field review does not constitute protocol-level species surveys.

visualize trends in vegetation and soil conditions more easily due to the strong comparison of wet and dry areas.

3.2 Vegetation Communities and Other Land Cover Types

During the site visit, WRA evaluated the species composition and area occupied by distinct vegetation communities, aquatic communities, and other land cover types. Mapping of these classifications utilized a combination of aerial imagery and ground surveys. In most instances, communities are characterized and mapped based on distinct shifts in plant assemblage (vegetation) and follow the California Natural Community List (CDFW 2024a) and A Manual of California Vegetation, Online Edition (CNPS 2024). These resources cannot anticipate every component of every potential vegetation assemblage in California, and so in some cases, it is necessary to identify other appropriate vegetative classifications based on best professional judgment of WRA biologists. When undescribed variants are used, it is noted in the description. Vegetation alliances (natural communities) with a CDFW Rank of 1 through 3 (globally critically imperiled [S1/G1], imperiled [S2/G2], or vulnerable [S3/G3]) (CDFW 2021a), were evaluated as sensitive as part of this evaluation.

The site was reviewed for the presence of wetlands and other aquatic resources according to the methods described in the Corps Manual (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West* (Corps 2008) and A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (Lichvar and McColley 2008). Areas meeting these indicators were mapped as aquatic resources and categorized using the vegetation community classification methods described above. Aquatic communities which are mapped in the NMFS EFH Mapper (NMFS 2024) or otherwise meet criteria for designation as EFH are indicated as such in the community description below in Section 5.1. As stated above, the presence of riparian habitat was evaluated based on woody plant species meeting the definition of riparian provided in *A Field Guide to Lake and Streambed Alteration Agreements, Section 1600-1607, California Fish and Game Code* (CDFG 1994) and based on best professional judgement of biologists completing the field surveys.

3.3 Special-status Species

3.3.1 General Assessment

Potential occurrence of special-status species in the Study Area was evaluated by first determining which special-status species occur in the vicinity of the Study Area through a literature and database review as described above. Presence of suitable habitat for special-status species was evaluated during the site visit based on physical and biological conditions of the site as well as the professional expertise of the investigating biologists. The potential for each special-status species to occur in the Study Area was then determined according to the following criteria:

- **No Potential.** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

- **Unlikely.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- **Moderate Potential.** Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- **High Potential.** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- **Present.** Species is observed on the site or has been recorded (i.e., CNDDB, other reports) on the site in the recent past.

If a more thorough assessment was deemed necessary, a targeted or protocol-level assessment or survey was conducted or recommended as a future study. If a special-status species was observed during the site visit, its presence was recorded and discussed below in Section 5.2. If designated critical habitat is present for a species, the extent of critical habitat present and an evaluation of critical habitat elements is provided as part of the species discussions below.

3.3.2 Special-Status Plants

No targeted or protocol-level surveys for special-status plant species have been conducted to date. During the site visit on May 28, 2024, the site was assessed for potential habitat suitable to support special-status plant species.

3.3.3 Special-status Wildlife

No targeted or protocol-level surveys for special-status wildlife species have been conducted to date. During the site visit on May 28, 2024, the site was assessed for potential habitat suitable to support special-status wildlife species.

3.4 Wildlife Corridors and Native Wildlife Nursery Sites

To account for potential impacts to wildlife movement/migratory corridors, biologists reviewed maps from the California Essential Connectivity Project (CalTrans 2010), and habitat connectivity data available through the CDFW Biogeographic Information and Observation System (CDFW 2020). Additionally, aerial imagery (Google Earth 2020) for the local area was referenced to assess if local core habitat areas were present within, or connected to the Study Area. This assessment was refined based on observations of on-site physical and/or biological conditions, including topographic and vegetative factors that can facilitate wildlife movement, as well as on-site and off-site barriers to connectivity.

The potential presence of native wildlife nursery sites is evaluated as part of the site visit and discussion of individual wildlife species below. Examples of native wildlife nursery sites include nesting sites for native bird species (particularly colonial nesting sites), marine mammal pupping sites, and colonial roosting sites for other species (such as for monarch butterfly [*Danaus plexippus*]).

4.0 ECOLOGICAL SETTING

The Study Area is located in Stockton, CA (City), within a portion of the City's Wastewater Recovery Center (WRC) located at 2500 Navy Drive (Assessor's Parcel Number 163-33-003) that spans both sides of the San Joaquin River (river). The Study Area includes a staging pad and landside shoreline facilities near the ~~western~~ eastern riverbank, and a State Lands Commission (SLC) lease area within the river, where a buried WRC pipeline used for the occasional diversion of wastewater flows crosses the riverbed to facility facultative ponds on the west side of the river (**Error! Reference source not found.**).

4.1 Soils and Topography

Pertinent topographic features in the Study Area include the San Joaquin River channel and levee banks. The overall topography of the Study Area is characterized by a trapezoidal river channel with steep earthen levee banks. The surrounding topography is flat with minor terraces, depressions and levees associated with wetlands, sloughs and agricultural tracts of the surrounding San Joaquin River Delta.

Elevations in the study area range from approximately 10 to 30 feet above sea level. According to SoilWeb (CSRL 2024) and Web Soil Survey (USDA 2024), the Study Area is underlain by three soil mapping units: Meritt silty clay loam, partially drained, 0 to 2 percent slopes, yellowlark gravelly loam, 2 to 5 percent slopes, and water. Soils within the Study Area are shown in Appendix A – Figure 4. The parent soil series of all the Study Area's mapping units are summarized below.

Merritt Series: This series consists of shallow, loamy soils formed from alluvium derived from mixed rock sources and is situated on floodplains at elevations ranging from 0 to 50 feet. These soils are poorly drained with medium runoff and moderately high porosity. They range from neutral to moderately alkaline. The Merrit soil mapping units within the Study Area are considered hydric (USDA 2024).

Yellowlark Series: This series consists of shallow, gravelly loam soils formed from alluvium derived from mixed rock sources and is situated on fan remnants at elevations ranging from 110 to 270 feet. These soils are well drained with high runoff and very low porosity. They range from neutral to moderately acidic. The Yellowlark soil mapping units within the Study Area are not considered hydric (USDA 2024).

Water: This map unit has no applicable soil unit properties.

4.2 Climate and Hydrology

The Study Area is located in the southwestern portion of the City of Stockton, San Joaquin County, California. The average monthly maximum temperature in the area is 91 degrees Fahrenheit, while the average monthly minimum temperature is 56 degrees Fahrenheit. Predominantly, precipitation falls as rainfall between November and March with an annual average precipitation of 16 inches (WRCCI 2024).

The local watershed is Roberts Island – Trapper Slough (HUC 12: 180400030502) and the regional watershed is San Joaquin Delta (HUC 8: 180400030502). The Study Area is located in the upper portion of the San Joaquin Delta watershed. The Study Area is dominated by the San

Joaquin River channel, a traditional navigable waterway and mapped blue line stream (USGS 2024). Aside from the river channel, there are no other mapped resources in the NWI (USFWS 2020a) and California Aquatic Resources Inventory (CARI; SFEI 2017). Detailed descriptions of aquatic resources are provided in Section 5.1 below. A delineation report of the Study Area is provided in Appendix D.

4.3 Land Use

The Study Area is immediately adjacent to and partially includes the WRC. French Camp Slough is further south of the project site at the southern end of Sacramento-San Joaquin Delta. There are also industrial uses to the east, mixed commercial and industrial uses immediately to the west, the San Joaquin River Railroad Bridge and other industrial uses to the north, a mixture of vacant and industrial land to the west, and a mixture of residential uses and vacant land approximately one-half mile to the south. Undeveloped areas include the San Joaquin River and patches of riparian woodland, including northern California walnut groves and eucalyptus groves. Developed areas include the ruderal and bare ground habitat along the levees, and a single-lane bridge spanning the San Joaquin River. Ruderal vegetation is sparse and is dominated by non-native annual species. Several outbuildings are located south of the San Joaquin River as well.

Detailed land cover type descriptions are included in Section 5.1 below, and all observed plant species are included in Appendix B. Surrounding land uses include industrial, agriculture, and urban development (Google Earth 2024). Historically, the Study Area was surrounded by agricultural land uses to the west, south, and east, with urban and industrial development encroaching from the northeast over time (NETR 2024). The WRC facility has been located immediately northeast of the Study Area since at least 1957 (NETR 2024).

5.0 ASSESSMENT RESULTS

5.1 Vegetation Communities and Other Land Cover

WRA observed five (5) land cover types within the Study Area: the San Joaquin River (mapped to the OHWM), mixed riparian woodland, northern California walnut grove, and ruderal/developed areas. The non-sensitive land cover types in the Study Area include Eucalyptus groves and ruderal/developed areas, while the sensitive communities include the San Joaquin River, mixed riparian woodlands, and northern California walnut groves. Land cover types within the Study Area are illustrated in Appendix A – Figure 4. A list of all plant species observed within the Study Area is provided in Appendix B. Table 2, below, lists the land cover types and associated acreages within the Study Area.

Table 2. Vegetation Communities and Other Land Cover Types

COMMUNITY / LAND COVERS	SENSITIVE STATUS	RARITY RANKING	ACRES WITHIN STUDY AREA	PERMANENT IMPACTS	TEMPORARY IMPACTS
TERRESTRIAL / COMMUNITY LAND COVER					
Eucalyptus grove (*Eucalyptus* [*globulus, camaldulensis*] association)	Not Sensitive	SNA/GNA	0.08		
Ruderal/developed areas (no vegetation alliance)	Not Sensitive	-	13.24	0.24	1.16
Mixed riparian woodland (no vegetation alliance)	Sensitive	-	0.38		
Northern California walnut grove (*Juglans hindsii* and *Hybrids* woodland special stands and semi-natural alliance)	Sensitive	S1/G1	0.68		
AQUATIC RESOURCES					
San Joaquin River (OHWM) (no vegetation alliance)	Sensitive	-	12.59	0.11	0.30

5.1.1 Terrestrial Land Cover

Eucalyptus Grove (*Eucalyptus [globulus, camaldulensis]* association). CDFW Rank: SNA/GNA. One eucalyptus grove occurs along the eastern bank of the San Joaquin River in the southern portion of the Study Area. This land cover type covers 0.08 acre. This association is defined by having over 80% relative cover of blue gum (*Eucalyptus globulus*) or red gum (*E. camaldulensis*) in the tree canopy (CNPS 2024). Within the Study Area, the tree canopy is composed entirely of mature blue gum eucalyptus, with a sparse shrub layer of acacia (*Acacia* sp.) saplings. The herbaceous layer is sparse but includes Baltic rush (*Juncus balticus* ssp. *ater*) at the river's edge.

Eucalyptus groves are ranked SNA/GNA by CDFW, and this land cover type is not classified as sensitive on its own (CDFW 2024a). However, the eucalyptus grove within the Study Area is classified as riparian woodland, where the individual trees are rooted below the top-of-bank (TOB). Riparian woodlands are separately considered sensitive by the CDFW, and CDFW jurisdiction extends to the TOB or the edge of the riparian dripline, whichever is farther.

Ruderal/Developed Area (no vegetation alliance). CDFW Rank: None. Approximately 9.19-acres of the Study Area is composed of ruderal and developed areas, including the levee roads and most

of the levee banks. Gravel paving covers the levee roads, and rock riprap lines the steep levee slopes along the San Joaquin River. Jute netting has been placed along portions of the southern levee slope.

The vegetation is minimal and is dominated by non-native and invasive species, including Italian rye grass (*Festuca perennis*), ripgut brome (*Bromus diandrus*), stinkwort (*Dittrichia graveolens*), prickly lettuce (*Lactuca serriola*), and short-podded mustard (*Hirschfeldia incana*). Occasional trees and shrubs form an open and discontinuous cover, including blue elderberry (*Sambucus mexicana*), Mexican fan palm (*Washingtonia robusta*), and date palms (*Phoenix* sp.). Other common species include shore vervain (*Verbena litoralis*), Indian tobacco (*Nicotiana quadrivalvis*), horseweed (*Erigeron* sp.), and perennial pepperweed (*Lepidium latifolium*). This community is not considered sensitive by San Joaquin County, CDFW, or any other regulatory entity.

Mixed Riparian Woodland (no vegetation alliance). CDFW Rank: Sensitive. Mixed riparian woodlands are characterized by trees and shrubs which are rooted below the TOB, or which overhang the TOB of the San Joaquin River. This land cover type covers 0.36 acres of the Study Area and excludes the riparian eucalyptus groves and riparian northern California walnut groves, which are described separately. Within the Study Area, the mixed riparian tree canopy is composed of blue elderberry, edible fig (*Ficus carica*), Gooding's black willow (*Salix gooddingii*), and boxelder (*Acer negundo*). The shrub layer is characterized by Himalayan blackberry (*Rubus armeniacus*), blue elderberry saplings, and common buttonbush (*Cephalanthus occidentalis*), with occasional pampas grass (*Cortaderia selloana*). Herbaceous vegetation is characterized by non-native and invasive species common throughout the site, including ripgut brome, slim oat, short-podded mustard, prickly lettuce, and Italian thistle. The mixed riparian woodland does not qualify for a specific vegetation alliance.

Mixed riparian woodlands are considered sensitive by CDFW, and CDFW jurisdiction extends to the TOB or the edge of the riparian dripline, whichever is farther.

Northern California Walnut Grove (*Juglans hindsii* and *Hybrids* woodland special stands and semi-natural alliance). CDFW Rank: S1/G1. Northern California walnut (*Juglans hindsii*) groves cover 0.68 acres of the site, and chiefly occur along the inboard levee slopes throughout the Study Area. One additional northern California walnut grove occurs along the landward side of the levee. This alliance is defined by the dominance of northern California walnut trees in the canopy, with over 50% relative cover in the tree canopy (CNPS 2024). Within the Study Area, northern California walnuts compose the entirety of the closed tree layer, creating a shaded and sheltered understory. The shrub layer includes Himalayan blackberry (*Rubus armeniacus*) and English ivy (*Hedera helix*). The herbaceous layer is dominated by common non-native species including ripgut brome, Italian rye grass, short-podded mustard, prickly lettuce, Italian thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*), and Baltic rush.

Northern California walnut groves are sensitive natural communities and are ranked S1/G1 by CDFW (CDFW 2024a). Additionally, most of the northern California walnut groves in the Study Area are also classified as riparian woodlands, where the individual tree is rooted below the top-of-bank (TOB). Riparian woodlands are separately considered sensitive by CDFW, and CDFW jurisdiction extends to the TOB or the edge of the riparian dripline, whichever is farther.

5.1.2 Aquatic Resources



Photo 1. Photograph of San Joaquin River.

San Joaquin River (OHWM). (No vegetation alliance). CDFW Rank: Sensitive. This land cover type includes the open water of the San Joaquin River, mapped to the Ordinary High Water Mark (OHWM). The San Joaquin River is a perennial waterway which conveys water flows throughout the entire year and experiences muted tidal action. Within the Study Area, the San Joaquin River is unvegetated (<1% absolute cover) and covers 12.59 acres or 2,244 linear feet.

Indicators of the OHWM included the presence of surface water, water staining on the levee bank riprap, and gage data from the on-site USGS monitoring location (USGS Gage Name: San Joaquin River BL Garwood Bridge - 11304810). The San Joaquin River is tidally influenced within the Study Area (CARI 2023) and is recognized as a traditionally navigable waterway by the Army Corps of Engineers (Corps) Sacramento District (Corps 2024). The San Joaquin River is a jurisdictional aquatic resource subject to regulation by the Corps, RWQCB, and CDFW. The San Joaquin River is also mapped as EFH for groundfish and Chinook salmon (*Oncorhynchus tshawytscha* pop 11), as well as USFWS Critical Habitat for Delta Smelt (*Hypomesus transpacificus*) within the Study Area (NMFS 2024, USFWS 2024b).

5.2 Special-status Species

5.2.1 Special-status Plants

Based upon a review of the resource databases listed in Section 3.0, 24 special-status plant species have been documented in the vicinity of the Study Area. None of these species have the potential to occur in the Study Area; all of these are unlikely or have no potential to occur for one or more of the following:

- Hydrologic conditions (e.g., tidal, riverine) necessary to support the special-status plant species are not present in the Study Area;
- Topographic conditions (e.g., north-facing slope, montane) necessary to support the special-status plant species are not present in the Study Area;
- Unique pH conditions (e.g., alkali scalds, acidic bogs) necessary to support the special-status plant species are not present in the Study Area;
- Associated natural communities (e.g., interior chaparral, tidal marsh) necessary to support the special-status plant species are not present in the Study Area;
- The Study Area is geographically isolated (e.g. below elevation, coastal environ) from the documented range of the special-status plant species;
- Land use history and contemporary management (e.g., grading, intensive grazing) has degraded the localized habitat necessary to support the special-status plant species.

No targeted or protocol-level surveys for special-status plant species have been conducted to date. During the site visit on May 28, 2024, the site was assessed for potential habitat suitable

to support special-status plant species and no special-status plant species were observed within the Study Area.

5.2.2 Special-status Wildlife

Of the 29 special-status wildlife species documented in the vicinity of the Study Area, most are excluded from the Study Area based on a lack of habitat features. Features not found within the Study Area that are required to support special-status wildlife species include:

- Vernal pools
- Mines, caves or abandoned buildings
- Broadleaf riparian trees
- Conifer forests or thick woodlands
- Freshwater emergent vegetation
- Presence of specific host plants
- Caves, mine shafts, or abandoned buildings

The absence of such habitat features eliminates components critical to the survival or movement of most special-status species found in the vicinity. For instance, California tiger salamander (*Ambystoma californiense*) is known to occur in the open spaces in the vicinity. However, suitable grassland and ephemeral breeding ponds are absent, precluding this species from existing on the Study Area. Given the Study Area's relative proximity to sensitive habitats on the San Joaquin- Sacramento Delta, many species documented nearby are additionally obligates to marine or tidal marsh habitats which are not present on or in the immediate vicinity of the Study Area.



Photo 2. Study Area

Fourteen (14) special-status species have moderate to high potential to occur in the immediate vicinity of or in portions of the Study Area: long-eared myotis (*Myotis evotis*), Swainson's hawk (SWHA; *Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), loggerhead shrike (*Lanius ludovicianus*), northern harrier (*Circus hudsonia*), northwestern pond turtle (*Actinemys marmorata*), green sturgeon (*Acipenser medirostris*), white sturgeon (*Acipenser transmontanus*), steelhead – Central Valley DPS (*Oncorhynchus mykiss irideus* pop 11), delta smelt (*Hypomesus transpacificus*), Central Valley spring-run ESU Chinook salmon (*Oncorhynchus tshawytscha pop 11*), Central Valley winter-run ESU Chinook salmon (*Oncorhynchus tshawytscha pop 11*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), and Crotch's bumble bee (*Bombus crotchii*). These species are discussed in greater detail below.

Table 3. Potential Special-status Wildlife

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL HABITAT IN THE STUDY AREA
FORMALLY LISTED WILDLIFE (FESA, CESA)			
***Acipenser medirostris* pop. 1**	Green sturgeon	Federal threatened	**Moderate Potential.** Suitable aquatic habitat is present within the Study Area. However, confirmed encounters of this species are highly uncommon throughout the San Joaquin River with only two confirmed occurrences (CDFW 2024b, Root et. al., 2020).
Acipenser transmontanus	White sturgeon	State Candidate Threatened CDFW Species of Special Concern.	**Moderate Potential.** Suitable aquatic habitat is present within the Study Area. This species is known to spawn within the lower reaches of the San Joaquin River (Moyle 2002).
Actinemys marmorata	northwestern pond turtle	Federal Proposed Threatened CDFW Species of Special Concern	**Moderate Potential.** The Study Area provides suitable aquatic habitat to support this species.
Bombus crotchii	Crotch bumble bee	State Candidate Endangered	**Moderate Potential.** The Study Area contains foraging and nesting habitat to support this species. Foraging resources include Himalayan blackberry and shore vervain. Nesting habitat includes sparse ground squirrel burrows, jute netting, and riprap along levee slopes. The nearest documented CNDDB occurrence of this species is approximately 12 miles southeast of the Study Area (CDFW 2024b).
Buteo swainsoni	Swainson's hawk	State Threatened	**Present.** This species was observed foraging and soaring throughout the Study Area. Furthermore, suitable large trees are present within the Study Area that provide nesting habitat for this species.
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	Federal Threatened	**Moderate Potential.** Blue elderberry within the Study Area provides suitable habitat for this species. No suitable VELB exit holes were observed in blue elderberry plants within the Study Area.
Hypomesus transpacificus	delta smelt	State Endangered and Federal Threatened	**Moderate Potential.** While suitable aquatic habitat is present within the Study Area during the winter months, CDFW's FMWT has not documented a single observation nearby since 1999 (CDFW 2024d). While unlikely, presence of this species in the Study Area cannot be ruled out (USFWS 2022).

SCIENTIFIC NAME	COMMON NAME	CONSERVATION STATUS	POTENTIAL HABITAT IN THE STUDY AREA
***Oncorhynchus mykiss irrideus* pop. 11**	steelhead - Central Valley DPS	Federal Threatened	**Moderate Potential.** Suitable migratory habitat is present within the Study Area. Steelhead would be present during seasonal spawning migrations from July through March, and juvenile outmigration from January through June.
***Oncorhynchus tshawytscha* pop. 11**	Central Valley spring-run ESU Chinook salmon	Federal Threatened	**Moderate Potential.** Suitable migratory habitat is present within the Study Area. Spring-run Chinook salmon would be present during seasonal spawning migrations and juvenile outmigration from February through May.
***Oncorhynchus tshawytscha* pop. 11**	Sacramento River winter-run ESU Chinook salmon	Federal Endangered	**Moderate Potential.** Suitable rearing habitat is present in the Mainstem Sacramento River (Phillis et al. 2018). Rearing juvenile winter run are unlikely to utilize the mainstem San Joaquin River but this possibility cannot be excluded (Robertson-Bryan 2022).
OTHER SPECIAL-STATUS WILDLIFE (CEQA, OTHER)			
Circus hudsonia	northern harrier	SSC	**Moderate Potential.** The Study Area does not contain suitable nesting habitat, but it may provide suitable foraging habitat.
Elanus leucurus	white-tailed kite	CFP	**Moderate Potential.** Woodland bordering grassland may provide suitable nesting habitat for this species. This species has been observed in the vicinity.
Lanius ludovicianus	loggerhead shrike	SSC, BCC	**Moderate Potential.** Woodland bordering grasslands may provide suitable nesting habitat for this species. This species has been observed in the vicinity.
Myotis evotis	Long-eared myotis	WBWG Medium Priority	**Moderate Potential.** Trees and a single bridge within the Study Area may provide suitable roosting habitat for this species.

Green sturgeon (*Acipenser medirostris*) – southern DPS; Federal Threatened. The southernmost spawning population of green sturgeon is in the Sacramento River, with the principal spawning area located in the lower Feather River (Moyle 2002). Spawning populations of green sturgeon in the San Joaquin River are presumed to have been lost in the past 25-30 years. Green sturgeon are primarily marine species, entering into freshwater rivers mainly to spawn, although early life stages may reside in freshwater for up to two years (Moyle 2002). Adults typically migrate into fresh water from late February through late July. The spawning period occurs from March to July, with peak spawning occurring from mid-April to mid-June (Emmett et al. 1991). Green sturgeon prefers deep pools in large, turbulent, freshwater river mainstreams to spawn (Moyle et al. 1992). Juvenile green sturgeon emigrate out to sea primarily during the summer and fall before the end of their second year (Emmett et al. 1991). Green sturgeon adults, subadults, and juveniles are

widely distributed throughout the Delta and estuary. Adults typically migrate upstream on the western edge of the Delta, returning to the ocean when river temperatures decrease and flows increase during the fall and early winter. They may hold in low gradient or off-channel sloughs or coves where temperatures are within acceptable thresholds. Larvae prefer open aquatic habitats for foraging but utilize structure habitat during the day. Juvenile rearing habitats for green sturgeon include spawning areas and migration corridors. Rearing habitat utilization varies depending on seasonal flows and temperatures. Juvenile green sturgeon are found year round in the Delta and use the region as a migration corridor, feeding area, and juvenile rearing area. Juvenile green sturgeon are strong swimmers and thus have the ability to select or avoid habitats. Green sturgeon are salvaged at the CVP and SWP pumping plants on an irregular basis throughout the year, verifying their presence in the south Delta (EPIC et al. 2001).

White sturgeon (*Acipenser transmontanus*), State Candidate Threatened, CDFW Species of Special Concern. This sturgeon is found in most estuaries along the Pacific coast and are known to the San Francsico Bay Estuary and Sacramento-San Joaquin river systems. Adults in the San Francisco Bay Estuary system spawn in the lower reaches of the Sacramento and San Jaquin Rivers and are not known to enter freshwater or non-tidal reaches of Estuary streams. White sturgeon predominantly spawn in Sacramento and Feather Rivers and may spawn in the San Joaquin River when conditions permit. This species typically spawns in May through June; white sturgeon are highly episodic spawners, with a small portion of the population spawning in any given year (Moyle 2002). White sturgeon have been documented spawning during wet and dry years, with successful recruitment correlated with elevated river flows during the larval dispersal and juvenile outmigration period (April – July, SWRCB 2017). The diet consists of crustaceans, mollusks, and some fish (Moyle 2002).

This species has experienced a persistent decline across its range in California since the 1980s (Blackburn et Al. 2019). Population decline is attributed to increased water diversion, altered natural hydrographs, overharvest in the recreational fishery, decreased water quality, and harmful algal blooms in San Francisco Bay and San Pablo Bay (CDFW 2023, California Fish and Game Commission 2023). Considering this species' known range in the mainstem San Joaquin River, it is considered moderate potential to occur in the Study Area.

Northwestern pond turtle (*Actinemys marmorata*), Proposed Federal Threatened, CDFW Species of Special Concern. The northwestern pond turtle (NWPT) is the only native freshwater turtle in most of California. This turtle is uncommon to common in suitable aquatic habitat throughout California, west of the Sierra-Cascade crest and Transverse Ranges. NWPT inhabits annual and perennial aquatic habitats, such as coastal lagoons, lakes, ponds, marshes, rivers, and streams from sea level to 5,500 feet in elevation. Pond turtles also occupy man-made habitats such as stock ponds, wastewater storage, percolation ponds, canals, and reservoirs. This species requires low-flowing or stagnant freshwater aquatic habitat with suitable basking structures, including rocks, logs, algal mats, mud banks, and sand. Warm, shallow, nutrient-rich waters are ideal as they support prey items, which include aquatic invertebrates and occasionally fish, carrion, and vegetation. Turtles require suitable aquatic habitat for most of the year; however, NWPT often occupies creeks, rivers, and coastal lagoons that become seasonally unsuitable. To escape periods of high water flow, high salinity, or prolonged dry conditions, NWPT may move upstream and/or take refuge in vegetated, upland habitat for up to four months (Rathbun et al. 2002). Although upland habitat is utilized for refuging and nesting, this species preferentially utilizes aquatic and riparian corridors for movement and dispersal.

NWPT nests from late April through July. This species requires open, dry upland habitat with friable soils for nesting and prefers to nest on unshaded slopes within 15 to 330 feet of suitable aquatic habitat (Rathbun et al. 1992). Females venture from water for several hours in the late afternoon or evening during the nesting season to excavate a nest, lay eggs, and bury the eggs to incubate and protect them. Nests are well-concealed, though native mammals are occasionally able to locate and predate upon eggs. Hatchlings generally emerge in late fall but may overwinter in the nest and emerge in early spring of the following year. The Study Area provides suitable aquatic habitat in the San Joaquin River for this species.

Crotch bumble bee (*Bombus crotchii*), State candidate. Crotch bumble bee occurs primarily in central and southern California, from coastal areas inland to the foothills (Williams et al. 2014). This species is now largely absent from the Central Valley, although it was historically common in this region (Hatfield et al. 2015). Crotch bumble bee occurs in grassland and scrub habitats and has also been documented in agricultural areas. Like other bumble bee species, Crotch bumble bee is a social species with an annual life cycle. Queens emerge from hibernation in the late winter/early spring to establish a new colony. The colony produces workers throughout the spring and summer, and reproductives (i.e., drones and queens) in the early fall. Nests are built in pre-existing cavities. They are commonly found underground, in abandoned rodent burrows, or aboveground in grass tufts, rock piles, abandoned bird nests, or tree cavities. Crotch bumble bee feeds on pollen and nectar during all life stages; preferred host species include (but are not limited to) milkweeds (*Asclepias* spp.), chaenactis (*Chaenactis* spp.), clarkias (*Clarkia* spp.), larkspurs (*Delphinium* spp.), buckwheats (*Eriogonum* spp.), lupines (*Lupinus* spp.), medicks (*Medicago* spp.), bladderpod (*Peritoma arborea*), phacelias (*Phacelia* spp.), poppies (*Eschscholzia* spp.), and sages (*Salvia* spp.). Queens overwinter in hibernacula; little is known about habitat requirements for hibernacula; bare ground, leaf litter and/or duff, and pre-existing cavities may provide overwintering habitat.

Major threats to Crotch bumble bee include agricultural intensification and rapid urbanization (Hatfield et al. 2015). Additionally, Crotch bumble bee has a narrow climatic range compared to most bumble bee species and may be threatened by increasing aridity and global climate change (NatureServe 2022). In general, bumble bees are threatened by a combination of factors including pesticide use, resource competition with non-native bees, and pathogen spillover from managed pollinators (Goulson 2010, Cameron et al. 2011). The Study Area supports flowering herbaceous vegetation along the northern levee banks, which may provide adequate forage for this species. The Study Area also supports leaf litter and small rodent burrows which may provide suitable hibernacula.

Swainson's hawk (*Buteo swainsoni*). State Threatened, USFWS Bird of Conservation Concern. Swainson's hawk is a summer resident and migrant in lowlands of California, primarily in the Central Valley but also in other areas inland and near the coast. Nests are constructed of sticks and placed in trees located in otherwise largely open areas. Areas typically used for nesting include the edge of narrow bands of riparian woodland, isolated patches of oak woodland, lone trees, and planted and natural trees associated with roads, farmyards and sometimes adjacent residential areas. Foraging occurs in open habitats, including grasslands, open woodlands, and some types of agricultural areas. While breeding, adults feed primarily on rodents (and other vertebrates); for the remainder of the year, large insects (e.g., grasshoppers, dragonflies) comprise most of the diet. In many areas, Swainson's hawks have adapted to foraging primarily in and around agricultural plots (particularly alfalfa, wheat and row crops), as prey is both numerous and conspicuous at harvest and/or during flooding or burning (Bechard et al. 2010). This species was observed foraging above the Study Area and perching approximately 400 feet northwest of the Study Area. There is also a documented CNDDB Occurrence (Occ # 2361) located in the Study Area.

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*, VELB), Federal Threatened Species. This beetle is found throughout the Central Valley in elderberry (*Sambucus sp.*) shrubs, on which it is completely dependent for larval development, and to a lesser degree, adult feeding. Adult VELB live for a few days to weeks in the spring months. Larval VELB hatch within a few days of fertilization and bore to the center of elderberry stems to feed on pith in the center of the stem, forming characteristic feeding galleries (USFWS 2005). Larvae take 1-2 years to mature. Just before pupation, late instar larvae will chew through the stem to the surface, then plug the hole behind them with wood shavings and frass. Pupation is thought to last for one month, followed by a resting period of the adult inside of the pupation chamber, lasting up to several weeks. Adults will emerge from the valley elderberry stem in time for the elderberry flowering season, between mid-March and mid-June, creating characteristic exit holes ranging from 4-10mm in diameter. Typical habitat is characterized as large stands of mature elderberry shrubs in riparian or floodplain areas (USFWS 2005). WRA biologists documented elderberry shrubs in the Study Area during the site survey. No exit holes or VELB individuals were observed. Considering the presence of host plants and suitable habitat, VELB has moderate potential to occur in the Study Area.

Delta smelt (*Hypomesus transpacificus*). Federal Threatened, State Endangered. The Delta smelt is endemic to the Sacramento-San Joaquin Delta and eastern portion of the San Francisco Bay estuary. This species is pelagic (lives in the open water column away from the bottom) and euryhaline (tolerant of a wide salinity range), found in brackish water. Delta smelt occurs as far upstream as the mouth of the American River (on the Sacramento River) and Mossdale on the San Joaquin River, extending downstream as far as San Pablo Bay. During the late winter to early summer, individuals migrate to freshwater to spawn. Larvae hatch between 10-14 days, are planktonic (floating with water currents), and washed downstream until reaching areas near the entrapment zone where salt and freshwater mix. This species is fast growing and short-lived with most growth achieved during the first seven to nine months of life. Most individuals die after spawning in the early spring although a few survive to a second year. The only known important habitat characteristic relates to spawning, which requires open, unvegetated, shallow (less than ten feet) subtidal waters with sand- or pebble-sized substrates within freshwater sloughs (USFWS 2008, Moyle 2002). Delta smelt feed entirely on small crustaceans (zooplankton). Recent data indicate that the species is in sharp decline and may be approaching extinction in the wild. No Delta smelt have been observed in or near the Study Area since 1999.

Steelhead - Central California Coast DPS (*Oncorhynchus mykiss irideus*), Federal Threatened. The Central California Coast DPS includes all naturally spawned populations of steelhead (and their progeny) in California streams from the Russian River to Aptos Creek, and the drainages of San Francisco and San Pablo Bays eastward to the Napa River (inclusive), excluding the Sacramento-San Joaquin River Basin. Steelhead typically migrate to marine waters after spending two years in freshwater, though they may stay up to seven. They then reside in marine waters for 2 or 3 years prior to returning to their natal stream to spawn as 4-or 5-year-olds. Steelhead adults typically spawn between December and June. In California, females typically spawn two times before they die. Preferred spawning habitat for steelhead is in perennial streams with cool to cold water temperatures, high dissolved oxygen levels and fast flowing water. Abundant riffle areas (shallow areas with gravel or cobble substrate) for spawning and deeper pools with sufficient riparian cover for rearing are necessary for successful breeding (Moyle 2002). The Study Area does not provide suitable spawning or juvenile rearing habitat. This species is documented to use the mainstem San Joaquin River as a migratory corridor between upstream spawning grounds and downstream estuarine and marine habitats, and therefore has moderate potential to occur (NMFS 2014).

Chinook salmon - Central Valley Spring-run ESU (*Oncorhynchus tshawytscha*), Federal Threatened, State Threatened. The Central Valley Spring-run ESU includes all naturally spawned spring-run populations from the Sacramento San Joaquin River mainstem and its tributaries. Chinook salmon are anadromous (adults migrate from a marine environment into the fresh water streams and rivers of their birth) and semelparous (spawn only once and then die). Spring-run Chinook salmon enter the Sacramento River between February and June. They move upstream and enter tributary streams from February through July, peaking in May-June. These fish migrate into the headwaters, hold in pools until they spawn, starting as early as mid-August and ending in mid-October, peaking in September. They are fairly faithful to the home streams in which they were spawned, using visual and chemical cues to locate these streams. While migrating and holding in the river, spring Chinook do not feed, relying instead on stored body fat reserves for maintenance and gonadal maturation. Eggs are laid in large depressions (redds) hollowed out in gravel beds. Some fish remain in the stream until the following October and emigrate as "yearlings", usually with the onset of storms starting in October through the following March, peaking in November-December. Large pools with cold water are essential over-summering habitat for this species (Moyle 2002). The Study Area does not provide suitable spawning or juvenile rearing habitat. This species is documented to use the Study Area as a migratory corridor between upstream spawning grounds and downstream estuarine and marine habitats, and therefore has moderate potential to occur (CDFW 2024b, NMFS 2012).

Chinook salmon - Sacramento River Winter-run ESU (*Oncorhynchus tshawytscha),* Federal Endangered, State Endangered. The ESU includes all naturally spawned populations of winter-run Chinook salmon in the Sacramento River and its tributaries in California, as well as two artificial propagation programs: winter run Chinook from the Livingston Stone National Fish Hatchery (NFH), and winter run Chinook in a captive broodstock program maintained at Livingston Stone NFH and the University of California Bodega Marine Laboratory. Winter-run Chinook salmon are unique because they spawn during summer months when air temperatures usually approach their yearly maximum. As a result, these salmon require stream reaches with cold water sources that will protect embryos and juveniles from the warm ambient conditions in summer. Winter-run Chinook salmon are primarily restricted to the mainstem Sacramento River but may use the entire Sacramento-San Joaquin Delta as juvenile rearing habitat (NMFS 2014).

This species has been documented at the San Joaquin River at Mossdale (US Bureau of Reclamation 2011). Considering its use of the San Joaquin River as juvenile rearing habitat, this species has moderate potential to occur in the Study Area.

Northern harrier (*Circus hudsonius [cyaneus]*). CDFW Species of Special Concern. The northern harrier occurs as a resident and winter visitor in open habitats throughout most of California, including freshwater and brackish marshes, grasslands and fields, agricultural areas, and deserts. Harriers typically nest in treeless areas within patches of dense, relatively tall, vegetation, the composition of which is highly variable; nests are placed on the ground and often located near water or within wetlands (Shuford and Gardali 2008). Harriers are birds of prey and subsist on a variety of small mammals and other vertebrates. The Study Area provides suitable foraging habitat for this species.

White-tailed kite (*Elanus leucurus*). CDFW Fully Protected Species. The white-tailed kite is resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities (Dunk 1995). Nests are constructed mostly of twigs and placed in trees, often at habitat edges. Nest trees are highly variable in size, structure, and immediate surroundings, ranging from shrubs to trees greater than 150 feet tall (Dunk 1995). This species preys upon a variety of small mammals, as well as other vertebrates and invertebrates. Trees in the Study Area provide suitable nesting habitat for this species. The closest occurrence is approximately 3.7 miles east of the Study Area (CDFW 2024b).

Long-eared myotis (*Myotis evotis*). WBWG Medium Priority. Moderate Potential. The long-eared myotis (bat) is primarily associated with coniferous forest (from sea level to approximately 9,000 feet elevation), but also occurs in semiarid shrublands, sage scrub, chaparral, and agricultural areas. This species roosts under loose tree bark, in tree hollows, caves, mines, crevices in rocky outcrops, in buildings, under bridges and occasionally on the ground. Long-eared myotis primarily consume beetles and moths, gleaning prey from foliage, trees, rocks, and from the ground (WBWG 2018). The bridge within the Study Area is not conducive to roosting, as it lacks interstitial spaces, crevices, or cavities. However, the Study Area provides suitable roosting habitat in the form trees along the San Joaquin River.

5.3 Wildlife Corridors and Native Wildlife Nursery Sites

Wildlife movement between suitable habitat areas can occur via open space areas lacking substantial barriers. The terms “landscape linkage” and “wildlife corridor” are often used when referring to these areas. The key to a functioning corridor or linkage is that it connects two larger habitat blocks, also referred to as core habitat areas (Beier and Loe 1992; Soulé and Terbough 1999). It is useful to think of a “landscape linkage” as being valuable in a regional planning context, a broad scale mapping of natural habitat that functions to join two larger habitat blocks. The term “wildlife corridor” is useful in the context of smaller, local area planning, where wildlife movement may be facilitated by specific local biological habitats or passages and/or may be restricted by barriers to movement. Above all, wildlife corridors must link two areas of core habitat and should not direct wildlife to developed areas or areas that are otherwise void of core habitat (Hilty et al. 2019). The San Joaquin River in the Study Area functions as a migratory corridor for listed salmonids (Section 5.2). The Study Area is mapped as critical habitat for delta smelt. The Study Area does not support any nursery or rearing habitat for listed salmonids.

6.0 ANALYTICAL METHODOLOGY AND SIGNIFICANCE THRESHOLD CRITERIA

Pursuant to Appendix G, Section IV of the State CEQA Guidelines, a project would have a significant impact on biological resources if it would:

1. 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 CDFW or U.S. Fish and Wildlife Service;
2. 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 CDFW or U.S. Fish and Wildlife Service;
3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
4. 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;
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or,
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

These thresholds were utilized in completing the analysis of potential project impacts for CEQA purposes. For the purposes of this analysis, a "substantial adverse effect" is generally interpreted to mean that a potential impact could directly or indirectly affect the resiliency or presence of a local biological community or species population. Potential impacts to natural processes that support biological communities and special-status species populations that can produce similar effects are also considered potentially significant. Impacts to individuals of a species or small areas of existing biological communities may be considered less than significant if those impacts are speculative, beneficial, de minimis, and/or would not affect the resiliency of a local population.

7.0 IMPACTS AND MITIGATION EVALUATION

Using the CEQA analysis methodology outlined in Section 6.2 above, the following section describes potential significant impacts to sensitive resources within the Project Area as well as suggested mitigation measures which are expected to reduce impacts to less than significant. As described in Section 1, The City of Stockton is a signatory to the SJMSCP, and the Project is consistent with the objectives of the SJMCP. Through the City's participation in the SJSMCP, the Project will comply with all relevant Incidental Take Minimization Measures (ITMM). When applicable, these measures are summarized with the suggested mitigation measures below.

7.1 Special-status Species

This section analyzes the Project's potential impacts and mitigation for special-status species in reference to the significance threshold outlined in CEQA Appendix G, Part IV (a):

> *Does the project have the potential to 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 CDFW or U.S. Fish and Wildlife Service?*

Potential impacts and mitigation for potentially significant impacts are discussed below.

7.1.1 Special-Status Plant Species

The Project Area does not contain suitable habitat to support any special-status plant species. No special-status plant species were observed during the May 2024 site assessment conducted by WRA biologists. All 24 special-status plant species documented in the vicinity of the Project Area are unlikely or have no potential to occur within the Project Area. Therefore, **no impact** to special-status plant species is anticipated from the Project.

7.1.2 Special-Status and Nesting Birds

This assessment determined that four special-status bird species, Swainson's hawk, northern harrier white-tailed kite and loggerhead shrike, may nest in trees within the Study Area or in the immediate vicinity. In addition to special-status nesting birds, common avian species, including great blue heron (*Ardea herodias*), may also nest within the Study Area and may be similarly affected by Project activities. Grading and vegetation removal proposed within the Project footprint may directly impact the nests of protected species or may impact these species through visual and auditory disturbance sufficient to cause nest abandonment. Due to the protected status of these species under both the MBTA and CDFW, impacts to special-status and common native nesting birds would also be considered a **potentially significant impact** under CEQA.

> **Potential Impact BIO-01:** Grading activities and vegetation removal associated with the proposed Project could result in the destruction or abandonment of nests of special-status or non-special-status bird species protected under the MBTA and CDFW.

To reduce potential impacts to special-status birds and native nesting birds to a **less-than-significant** level, the following measures should be implemented:

> **Mitigation Measure BIO-01:** To the extent feasible, Project-related activities should be avoided during the nesting bird season, generally defined as February 1 – August 31. If Project work must occur during the nesting bird season, a pre-construction nesting bird survey shall be conducted by a qualified biologist within 7 days of ground disturbance or vegetation removal to avoid disturbance to active nests, eggs, and/or young of nesting birds. Surveys shall be conducted in all potential nesting habitat located at, and adjacent to, Project work sites and in staging and storage areas.
>
> If an active nest is located, a no disturbance buffer shall be established around the nest. Active nest sites and protective buffer zones shall be designated as "Environmentally Sensitive Areas" where no Project-related activities or personnel may enter until a

qualified biologist determines that the young have fully fledged, or the nest otherwise becomes inactive (e.g., due to predation), and will no longer be adversely affected by the Project. Suggested buffer zone distances differ depending on species, existing conditions, and nest placement and shall be determined and implemented in the field by a qualified biologist.

Mitigation Measure BIO-2: The Project should minimize impacts to through the implementation of SJMSCP ITMM 5.2.4.11: If a nest tree becomes occupied during construction activities, then all construction activities shall remain a distance of two times the dripline of the tree, measured from the nest. If the Project Proponent elects to remove a nest tree, then nest trees may be removed between September 1 and February 15, when the nests are unoccupied (SJCOG 2000).

Implementation of this mitigation measure will reduce potential impacts to Swainson's hawk, white-tailed kite, loggerhead shrike, northern harrier and native nesting birds to a **less-than-significant** level.

7.1.3 Roosting Bats

This assessment determined that one species of special-status bat species, long-eared myotis, may roost within large trees within the Study Area. Due to the protected status of this species under the CFGC, impacts to special-status bats would also be considered a **potentially significant impact** under CEQA.

Potential Impact BIO-03: Tree removal and construction activity associated with the proposed Project could result in the direct removal of active bat roosts protected under the CFGC and CEQA.

To reduce potential impacts to special-status bat species to a less-than-significant level, the following measure shall be implemented:

Mitigation Measure BIO-03a: Impacts to long-eared myotis should be minimized through the implementation of SJMSCP ITMM 5.2.4.28:

- Prior to the start of initial Project-related disturbance, nursery sites within the Project footprint should be sealed to the extent practicable, including caves, adits, trees or snags (SJCOG 2000).
- Hibernation sites should be sealed prior to the hibernation season (November through March) if identified on the Project Site. Alternatively, grating may be installed in a manner specified by the SJMSCP (SJCOG 2000).
- When colonial roosting sites which are located in trees or structures must be removed, removal shall occur outside of the nursery and/or hibernation seasons and shall occur during dusk and/or evening hours after bats have left the roosting site, unless otherwise approved (SJCOG 2000).

Mitigation Measure BIO-3b. The removal or trimming of all trees with a diameter at breast height greater than 16 inches shall be conducted outside of the bat maternity season (May through August). If this is not feasible, a bat roost assessment shall be performed by a qualified biologist no more than 30 days prior to tree removal to determine if roosting bats are present.

If special-status bat species or potential maternity roosts of any species are detected during these surveys, the roost trees shall be protected, and a no-disturbance buffer of no less than 100-feet should be avoided until maternity activities have ceased. Irrespective of time of year, all felled trees should remain on the ground for at least 24 hours prior to chipping, off-site removal, or other processing to allow any bats to escape.

Implementation of this mitigation measure will reduce potential impacts to special-status bats to a **less-than-significant** level.

7.1.4 Special-Status Bumblebees

This assessment determined that one special-status bumblebee species have potential to occur: Crotch's bumblebee. Given that this species is a state candidate, impacts to these species would be considered a **potentially significant impact** under CEQA.

> **Potential Impact BIO-4:** If special-status bumble bees are present, grading activities within grassland habitat may result in the mortality of individuals and their nests.

To reduce potential impacts to special-status bumble bee to a less-than-significant level, the following measure shall be implemented:

> **Mitigation Measure BIO-4:** A qualified bumble bee biologist shall survey for Crotch bumble bee prior to the commencement of construction activities during the colony active period or the gyne flight season (generally, April 1 to October 31). The survey shall occur at least two hours after sunrise (> 60F and < 90F with no rain) or two hours before sunset and the survey area shall include the Project boundaries and a surrounding 100-foot buffer area. The survey duration shall be appropriate to the size of the Project site and buffer area based on the metric of a minimum of one person-hour of searching per three acres of suitable habitat.
>
> During the survey(s) the qualified biologists may not capture or handle bumble bees unless specifically authorized to do so for the Project by CDFW. At a minimum, survey methods shall include the following:
>
> - Search areas with flowering plants for foraging bumble bees. Observed foraging activity may indicate a nest is nearby, and therefore, the survey duration shall be increased when foraging bees are present.
> - Watch any bumble bees present and observe their flight patterns. Attempt to track their movements between foraging areas and the nest.
> - Visually look for nest entrances. Observe burrow, any other underground cavities, logs, or other possible nesting habitat.
> - Look for concentrated bumble bee activity.
> - Listen for humming of nest colony.
> - If bumble bees are observed, attempt to identify the species by taking a picture.
> - If foraging bees are present and a nest has not been found, floral resources within the Project's disturbance footprint may be carefully removed with hand-held tools to minimize foraging bee presence during Project activities. The continuation of bumble bee activity once such floral resources are removed may be an indication that a nest is present.

- The biologist conducting the survey shall record when the survey was conducted, a general description of any suitable foraging habitat/floral resources present, a description of observed bumble bee activity, a description of any vegetation removed to facilitate the survey, and their determination of if the survey observations suggest a Crotch bumble bee nest may be present or if construction activities could otherwise harm the species. The survey may be conducted immediately prior to construction granted all the above and below conditions are met.

If a special-status bumble bee is observed during the survey (not associated with a nest), or if any sign(s) of a bumble bee nest is observed and if it cannot be established the species present is not a special-status bumble bee, then construction shall not commence until CDFW provides further guidance, which may include an additional survey by a bumble bee expert, waiting until the colony active season ends, obtaining take authorization, or other actions.

Implementation of this mitigation measure will reduce potential impacts to special-status bumble bees to a **less-than-significant** level.

7.1.5 Valley Elderberry Longhorn Beetle (VELB)

This assessment determined that VELB has potential to occur. Given that this species is federal threatened, impacts to these species would be considered a **potentially significant impact** under CEQA.

> **Potential Impact BIO-5:** Project-related activities may remove valley elderberry trees, depriving VELB of crucial habitat to complete their lifecycle. If any of the valley elderberry trees are occupied by VELB, then tree removal may result in the mortality of individuals.

To reduce potential impacts to VELB to a less-than-significant level, the following measures shall be implemented:

> **Mitigation Measure BIO-5a:** Impacts to VELB should be avoided through the implementation of SJMSCP ITMM 5.2.4:
>
> - If elderberry shrubs are present on the Project site, a setback of 20 feet from the dripline of each elderberry bush shall be established (SJCOG 2000).
> - Brightly colored flags or fencing shall be placed surrounding elderberry shrubs throughout the construction process (SJCOG 2000).
> - For all shrubs without evidence of VELB exit holes which cannot be retained on the project site as described above, the Project shall count all stems of I" or greater in diameter at ground level. The Project should compensate for removal of the stems at an accredited VELB mitigation bank at the ratio of 3:1 in terms of shrubs removed (SJCOG 2000).
> - For all shrubs with evidence of VELB exit holes, the Project shall undertake transplanting of elderberry shrubs displaying evidence of VELB occupation to VELB mitigation sites during the dormant period for elderberry shrubs (November 1 – February 15). For elderberry shrubs with evidence of VELB occupation which cannot be transplanted, the Project should compensate for removal of the stems at an accredited VELB mitigation bank at the ratio of 6:1 in terms of planted: removed.

Mitigation Measure BIO-5b: Impacts to valley elderberry shrubs should be avoided through the following measures.

- Ground disturbing activities on the Project site should not alter the hydrology of the site or otherwise affect the likelihood of vigor or survival of elderberry shrubs.
- Project activities, such as truck traffic or other use of machinery, shall not create excessive dust on the project site, such that the growth or vigor of elderberry shrubs is adversely affected.
- Areas that are disturbed temporarily shall be restored to pre-disturbance conditions. Erosion control measures shall be implemented to restore areas disturbed within 100 feet of elderberry shrubs.
- No insecticides, herbicides, fertilizers, or other chemicals shall be used within 100 feet of elderberry shrubs.

7.1.6 Northwestern Pond Turtle

NWPT has been documented to occur within 8 miles of the Study Area (CDFW 2024b). This species has potential to utilize the San Joaquin River corridor and surrounding wetlands as aquatic foraging and dispersal habitat and may utilize uplands in the Study Area for nesting habitat. Impacts to NWPT would be **potentially significant** under CEQA.

Impact BIO-06: Project activities of vegetation removal, excavation, heavy equipment operation, dredging and placement of gravel and riprap fill have potential to induce mortality or injury to NWPT individuals via crushing, entombment or adverse affects to water quality, if present.

To reduce potential impacts to NWPT to a less-than-significant level, the following measures shall be implemented. Measures BIO-6a to 6c are consistent with ITMM 5.2.4.10 in the SJSMCP:

Mitigation Measure BIO-06a: A qualified biologist shall conduct pre-construction surveys for NWPT within 48 hours prior to the initiation of construction activities within or adjacent to aquatic habitat (SJCOG 2000).

Mitigation Measure BIO-06b: If nesting areas for pond turtles are identified on the Study Area, a buffer are of 300 feet shall be established between the nesting site (which may be immediately adjacent to aquatic habitat or extend up to 400 feet away from wetland areas in uplands), and the aquatic habitat near the nesting site. These buffers shall be indicated by temporary fencing if construction has or will begin before nesting periods are ended (the period from egg laying to emergence of hatchlings is normally April to November) (SJCOG 2000).

Mitigation Measure BIO-06c: A biological monitor shall provide an environmental awareness training program to all personnel involved in Project construction. At a minimum, the employee education program shall consist of a brief presentation by persons knowledgeable about the biology of sensitive species with potential to occur in the Project footprint, and about their legislative protection to explain concerns to contractors and their employees involved with implementation of the Project. The program shall include a description of these species and their habitat needs, any

reports of occurrences in the area; an explanation of the status of these species and their protection under State and Federal legislation; and a list of measures being taken to reduce impacts during construction.

Mitigation Measure BIO-06d: Water quality protections during construction activities will include spill prevention and containment measures on the barges, including sorbent mats, spill kits, brooms, buckets, and other equipment as necessary; a Stormwater Prevention Plan (SWPPP) and Best Management Practices (BMPs) for earthwork areas including the use of fiber rolls and/or silt fences as needed; a Spill Prevention, Control, and Countermeasures Plan (SPCC Plan) for equipment operating near the water; and non-structural measures, such as qualified and trained personnel, good housekeeping, and documented emergency procedures. Silt curtains will also be placed around the work site within the water.

The implementation of these mitigation measures will reduce potential impacts to NWPT to a **less than significant** level.

7.1.7 Steelhead, Chinook Salmon, White Sturgeon, Green Sturgeon and Delta Smelt

Special-status fish including steelhead – Central Valley DPS, Central Valley spring-run ESU Chinook salmon, Central Valley winter-run ESU Chinook salmon, green sturgeon, white sturgeon and delta smelt have potential to occur in the San Joaquin River. Impacts to special-status salmonids and other species would be **potentially significant** under CEQA, CESA and the ESA.

Impact BIO-07: The installation of infrastructure along the San Joaquin River and Project activities in or adjacent to aquatic habitat, including vegetation removal, excavation, dredging, gravel and riprap fill placement could directly impact special-status salmonids and other species, if present. Impacts could include direct removal of fish, mortality or injury via crushing or entombment, and adverse impacts to water quality. No spawning of adult green sturgeon is known to occur in the San Joaquin River, and observations of this species are very rare, therefore impacts to this species are not anticipated.

To reduce potential impacts to special-status fish to a less-than-significant level, the following measures shall be implemented:

Mitigation Measure BIO-06d (as above).

Mitigation Measure BIO-07: All in-water work should occur during an in-water work window during which time delta smelt and salmonids have lower potential to occur in the Study Area, from August 1 to November 30. This work window also minimizes the likelihood of any adult or juvenile green sturgeon being incidentally present, and juveniles are not likely to occur in the Project Area.

The implementation of this mitigation measure will reduce potential impacts to special-status fish to a **less than significant** level.

7.2 Sensitive Natural Communities and Land Cover Types

This section addresses the question:

> *b) Does the Project 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 CDFW or U.S. Fish and Wildlife Service;*

Sensitive natural communities within the Project Area include northern California walnut groves (S1/G1) and mixed riparian woodland.

The Project is anticipated to result in direct impacts to northern California walnut groves and mixed riparian woodland. Permanent impacts would include tree removals, while temporary impacts may include dripline encroachment and pruning. The Project impacts are not quantifiable at this time, but some removals of riparian trees and northern California walnut trees are likely to result from Project activities. Impacts to riparian vegetation are under jurisdiction of CDFW per Section 1602 of the CFGC, and CDFW jurisdiction extends to the TOB or the edge of riparian dripline, whichever is greater. Due to the sensitive status of northern California walnut groves and riparian woodlands, impacts would be considered a **potentially significant impact** under CEQA.

> **Potential Impact BIO-08:** Grading, grubbing, and vegetation removal associated with the proposed Project could result in direct impacts to northern California walnut groves and riparian woodlands, including the permanent impacts (removal) or temporary impacts (i.e. dripline encroachment or pruning) to northern California walnut trees within the northern California walnut groves and to riparian trees within the mixed riparian woodland.

To reduce potential impacts to northern California walnut groves and mixed riparian woodland to a **less-than-significant** level, the following measures will be implemented:

> **Mitigation Measure BIO-08a:** The Project will be designed to avoid removals of riparian trees and northern California walnut grove trees, as far as feasible.

> **Mitigation Measure BIO-08b:** The project proponent shall obtain and comply with all applicable permits and regulations regarding public trees, including the City of Stockton Tree Ordinance (Ordinance 015-09). Such compliance shall include, but not be limited to, replacement of public tree removals on a one (1) for one (1) basis. The size and species of the replacement shall be determined by the Director based on the size of the tree that was removed, with the minimum size being a 15-gallon container stock. If possible, the replacement tree shall be planted on the same parcel as the tree that was removed; if not possible, it shall be planted in a City Park, or some other location determined by the Director. Such off-site planting shall be performed by a local contractor hired by the City. The applicant shall reimburse the City for the cost of any off-site planting together with a two and one-half (2.5) percent administration fee based on the actual cost of the planting contract.

Mitigation Measure BIO-08c: Impacts to riparian trees will require replanting of native riparian trees along the stream channels in the preserved portions of the property in accordance with CDFW mitigation ratios listed below:

- 1:1 for removal of non-native trees;
- 1:1 for removal of native trees up to 3 inches DBH
- 3:1 for removal of native trees 4 to 6 inches DBH;
- 6:1 for removal of native trees greater than 6 inches DBH;
- 4:1 for removal of oak (*Quercus* sp.) trees up to 6 inches DBH;
- 5:1 for removal of oak trees between 7 and 15 inches DBH; and
- 10:1 for removal of oak trees greater than 15 inches DBH.

Native replacement trees will be planted along the San Joaquin levee banks onsite and will be monitored for 10 years. The mitigation plantings will have 70% survival at the end of the 10-year monitoring program. A Riparian Mitigation and Monitoring Plan will be developed, which includes a detailed native plant species palette and map showing plant spacing, and specific performance criteria, monitoring, adaptive management and invasive species removal in order to allow for successful habitat creation and maintenance.

Implementation of these mitigation measures will reduce this potential impact to a level that is **less than significant**.

7.3 Aquatic Resources

This section analyzes the Project's potential impacts and mitigation for wetlands and other areas presumed or determined to be within the jurisdiction of the Corps or BCDC in reference to the significance threshold outlined in CEQA Appendix G, Part IV (c):

> *c) Does the Project have the potential to have a substantial adverse effect on state or 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;*

The Project is expected to **result in temporary impacts to 0.30 acres and permanent impacts to 0.11 acres of San Joaquin River (Table 2, Section 5.1)**, which is a federal and state jurisdictional aquatic resource. Potential project components under consideration at the time of this report with temporary or permanent impacts include 1) dredging/excavation of the channel bed, 2) placement of gravel and rip rap fill and limited, short-term turbidity increases. Additionally, Project activities could result in indirect discharges to the San Joaquin River. Due to its status under the jurisdiction of the Army Corps of Engineers, RWQCB, and CDFW, impacts to the San Joaquin River **would be considered significant** under CEQA.

Potential Impact BIO-09a: Direct impacts to the San Joaquin River may include dredging/excavation of the channel bed, placement of gravel and rip rap fill and increased turbidity.

Potential Impact BIO-09b: Construction activities adjacent to the San Joaquin River may result in unintentional fill or discharge federal and state jurisdictional aquatic resources.

To reduce potential impacts to the San Joaquin River to a **less-than-significant** level, the following measures will be implemented:

Mitigation Measure BIO-6d (as above).

Mitigation Measure BIO-09a: The Project will be designed to avoid and minimize impacts to jurisdictional aquatic resources as far as feasible.

Mitigation Measure BIO-09b: Prior to ground disturbing activities, flagging of sensitive habitats adjacent to Project construction areas and silt fencing shall be installed with oversight from a qualified biologist in the areas adjacent to non-wetland waters.

7.4 Wildlife Corridors and Native Wildlife Nursery Sites

This section analyzes the Project's potential impacts and mitigation for habitat corridors and linkages in reference to the significance threshold outlined in CEQA Appendix G, Part IV (d):

> *d) Does the Project have the potential to 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;*

As noted in Section 3.2.6, the Project Area provides a migratory corridor for special-status fish including steelhead, spring-run and winter-run Chinook salmon, delta smelt and green sturgeon. The Study Area is also designated critical habitat for delta smelt (USFWS 2008). The implementation of mitigation measure BIO-6 will restrict in-water work to the time period when delta smelt and out-migrating juvenile salmonids have no potential to occur, and green sturgeon is very unlikely to occur. This will minimize impacts to migrating individuals and critical habitat to a **less-than-significant** level.

7.5 Local Policies and Ordinances

This section analyzes the Project's potential impacts and mitigation based on conflicts with local policies and ordinances in reference to the significance threshold outlined in CEQA Appendix G, Part IV (e):

> *e) Does the Project have the potential to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;*

Local plans and policies related to biological resources examined in this analysis are:

- City of Stockton General Plan
- City of Stockton Tree Ordinance

City of Stockton General Plan. The Project was designed to avoid impacts to the extent feasible. No impacts to special-status plant species or wildlife movement corridors are anticipated as a result of the Project. Impacts to special-status wildlife species will be avoided or minimized through the implementation of **Mitigation Measures BIO-1** through **BIO-07.**

Unavoidable impacts to northern California walnut groves and mixed riparian woodlands are anticipated. Impacts to trees within these sensitive natural communities will be mitigated by

Mitigation Measure BIO-10. Impacts to "protected" trees under the City of Stockton Tree Ordinance will be mitigated in accordance with the Conditions of Approval attached to the Project's tree removal permit, as detailed below. Impacts to federal and state jurisdictional aquatic resources will be mitigated by **Mitigation Measure BIO-6d** and **BIO-09**. Therefore, the Project will comply with the relevant policies contained within this Plan.

City of Stockton Tree Ordinance. The City of Stockton tree ordinance requires a tree removal permit prior to the removal of a "heritage tree" or "public tree". The Ordinance defines a "heritage tree" as:

1. Any valley oak (*Quercus lobata*), coast live oak (*Q. agrifolia*), or interior live oak (*Q. wislizenii*) with a diameter (measured 24 inches above grade) of 16 inches or more.
2. For oak trees of the species above with multiple trunks, the combined trunk diameter shall be used for all trunks of 6 inch diameter or greater.

There are several trees within the Study Area which likely qualify as "heritage trees" protected under the tree ordinance within the Study Area which require a permit for removal. Additionally, because the entire Study Area is located property owned by the City of Stockton, all trees within the Study Area may be considered public trees under the tree ordinance. Due to the protected status of heritage trees and public trees, impacts to these trees would be considered a **potentially significant impact** under CEQA.

Implementation of **Mitigation Measure BIO-10**, as described above in Section 7.2, will reduce potential impacts to heritage trees and public trees to a level that is less than significant.

7.6 Habitat Conservation Plans

This section analyzes the Project's potential impacts and mitigation based on conflicts with any adopted local, regional, and state habitat conservation plans in reference to the significance threshold outlined in CEQA Appendix G, Part IV (f):

> *f) Does the Project have the potential to conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.*

San Joaquin Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). The City of Stockton is a signatory to the SJMSCP. The SJMSHCP covers a total of 97 covered species, three of which have potential to occur in the Study Area: Swainson's hawk, northwestern pond turtle and valley elderberry longhorn beetle.

Potential impacts to covered species will be mitigated by **Mitigation Measures BIO-01** through **BIO-05**. Implementation of these mitigation measures will reduce potential impacts to covered species to a level that is less-than-significant. Therefore, the Project will comply with the relevant policies of the SJMSHCP.

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APPENDIX A. FIGURES

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Sources: National Geographic, WRA | Prepared By: njander, 3/10/2025

Figure 1. Study Area Regional Location Map

Stockton Wastewater Pipeline
Depth of Cover Remediation Project
San Joaquin County, California

0 0.25 0.5 Miles

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wra Environmental Consultants



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Sources: USDA NAIP Imagery 2022, WRA | Prepared By: njander, 3/10/2025

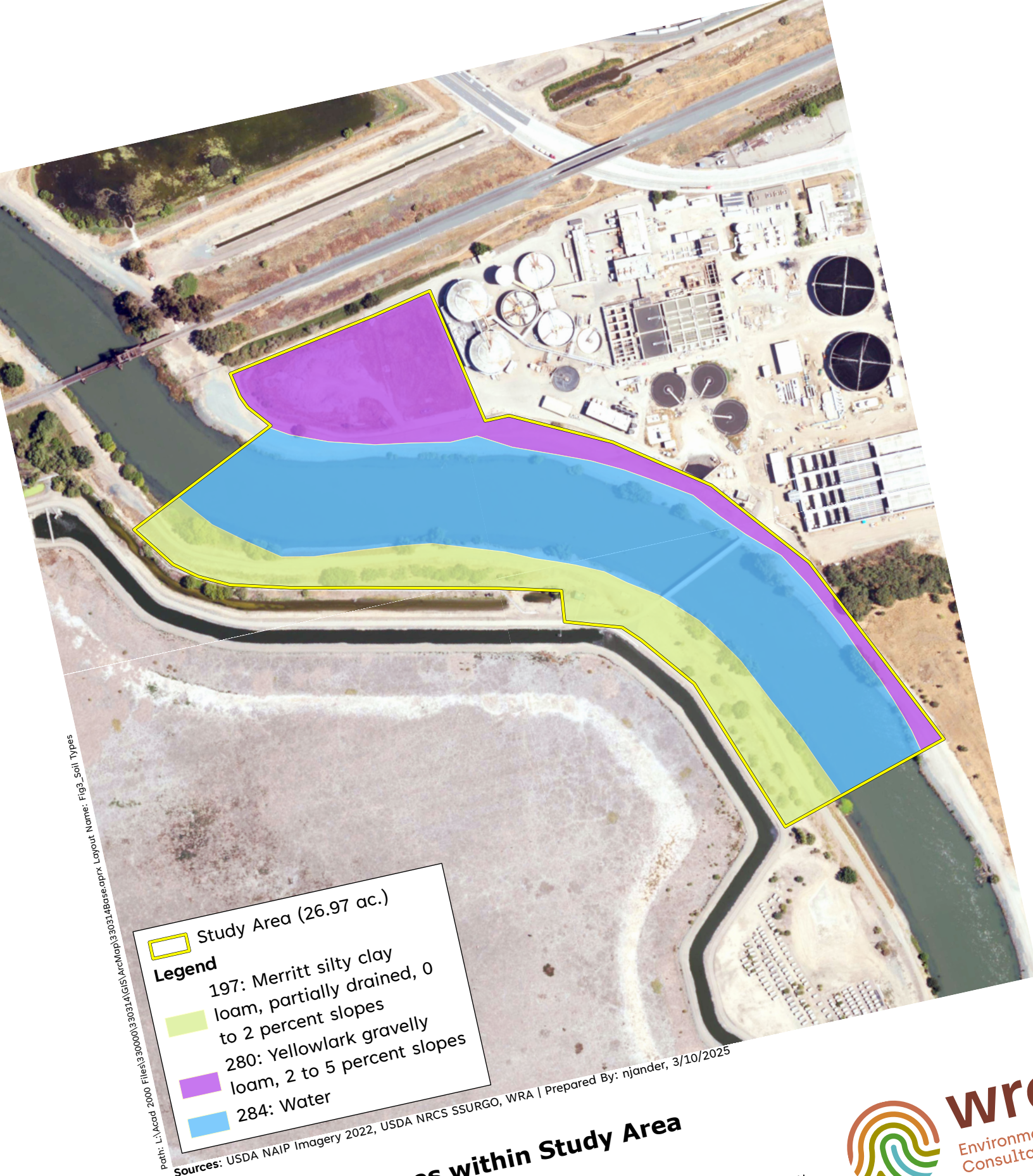
Figure 2. Aerial Photograph

Stockton Wastewater Pipeline
Depth of Cover Remediation Project
San Joaquin County, California

0 200 400 Feet

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Sources: USDA NAIP Imagery 2022, USDA NRCS SSURGO, WRA | Prepared By: njander, 3/10/2025

Figure 3. Soil Types within Study Area

Stockton Wastewater Pipeline
Depth of Cover Remediation Project
San Joaquin County, California

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Figure 1
Land Cover Types

Stockton Wastewater Pipeline
Depth of Cover Remediation Project
San Joaquin County, California



Study Area (26.97 ac.)

Sensitive Land Cover Types
- San Joaquin River (OHWM) (12.59 ac.)
- Mixed Riparian Woodland (0.38 ac.)
- Northern California Walnut (0.68 ac.)

Non-Sensitive Land Cover Types
- Eucalyptus Grove (0.08 ac.)
- Ruderal/Developed (13.24 ac.)

Proposed Project Impacts
- Permanent - Ruderal/ Developed (0.24 ac.)
- Permanent - San Joaquin River (OHWM) (0.11 ac.)
- Temporary - Ruderal/ Developed (1.16 ac.)
- Temporary - San Joaquin River (OHWM) (0.30 ac.)

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Figure 3: Potentially Jurisdictional Aquatic Features

Stockton Wastewater Pipeline
Depth of Cover Remediation Project
San Joaquin County, California

Study Area (26.97 ac.)

Waters of the U.S and State (Corps, RWQCB, and CDFW)

San Joaquin River to OHWM (12.59 ac. | 2,244 ln. ft.)

CDFW 1602 Jurisdiction

San Joaquin River to TOB (15.11 ac. | 2,244 ln. ft.)

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APPENDIX B. SPECIES OBSERVED IN AND AROUND THE STUDY AREA

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Plant Species Observed within the Study Area During the Biological Assessment on May 28, 2024.

SCIENTIFIC NAME	COMMON NAME	ORIGIN	FORM	RARITY STATUS[1]	CAL-IPC STATUS[2]	WETLAND STATUS[3]
***Acacia* sp.**	-	-	-	-	-	-
Acer negundo	Boxelder	native	tree	-	-	FACW
***Amaranthus* sp.**	-	-	-	-	-	-
Artemisia douglasiana	California mugwort	native	perennial herb	-	-	FAC
Avena barbata	Slim oat	non-native (invasive)	annual, perennial grass	-	Moderate	-
Bromus diandrus	Ripgut brome	non-native (invasive)	annual grass	-	Moderate	-
Carduus pycnocephalus ssp. pycnocephalus	Italian thistle	non-native (invasive)	annual herb	-	Moderate	-
Carex barbarae	Valley sedge	native	perennial grasslike herb	-	-	FAC
***Centaurium* sp.**	-	-	-	-	-	-
Cephalanthus occidentalis	Common buttonbush	native	shrub	-	-	OBL
Conium maculatum	Poison hemlock	non-native (invasive)	perennial herb	-	Moderate	FACW
Cortaderia selloana	Pampas grass	non-native (invasive)	perennial grass	-	High	FACU
Cyperus eragrostis	Tall cyperus	native	perennial grasslike herb	-	-	FACW
Dittrichia graveolens	Stinkwort	non-native (invasive)	annual herb	-	Moderate	-
Equisetum laevigatum	Smooth scouring rush	native	fern	-	-	FACW
***Erigeron* sp.**	-	-	-	-	-	-
Erodium cicutarium	Red stemmed filaree	non-native (invasive)	annual herb	-	Limited	-
Eschscholzia californica	California poppy	native	annual, perennial herb	-	-	-
Eucalyptus globulus	Blue gum	non-native (invasive)	tree	-	Limited	-
Euphorbia maculata	Spotted spurge	non-native	annual herb	-	-	UPL
Festuca perennis	Italian rye grass	non-native (invasive)	annual, perennial grass	-	Moderate	FAC

SCIENTIFIC NAME	COMMON NAME	ORIGIN	FORM	RARITY STATUS[1]	CAL-IPC STATUS[2]	WETLAND STATUS[3]
Ficus carica	Common fig	non-native (invasive)	tree	-	Moderate	FACU
Fraxinus velutina	Arizona ash	native	tree	-	-	FAC
Galium aparine	Cleavers	native	annual herb	-	-	FACU
Hedera helix	English ivy	non-native (invasive)	vine, shrub	-	High	FACU
Helianthus annuus	Hairy leaved sunflower	native	annual herb	-	-	FACU
Hirschfeldia incana	Short-podded mustard	non-native (invasive)	perennial herb	-	Moderate	-
Hordeum marinum* ssp. *gussoneanum	Mediterranean barley	non-native (invasive)	annual grass	-	Moderate	FAC
Iris pseudacorus	Horticultural iris	non-native (invasive)	perennial herb	-	Limited	OBL
Juglans hindsii	Northern California black walnut	native	tree	-	-	FAC
Juglans regia	English walnut	non-native	tree	-	-	-
Juncus balticus* ssp. *ater	Baltic rush	native	perennial grasslike herb	-	-	FACW
Lactuca serriola	Prickly lettuce	non-native	annual herb	-	-	FACU
Lepidium latifolium	Perennial pepperweed	non-native (invasive)	perennial herb	-	High	FAC
Lythrum hyssopifolia	Hyssop loosestrife	non-native (invasive)	annual, perennial herb	-	Limited	OBL
Malva parviflora	Cheeseweed	non-native	annual herb	-	-	-
Marah fabacea	California man-root	native	perennial herb, vine	-	-	-
Nicotiana quadrivalvis	Indian tobacco	native	annual herb	-	-	FACU
Paspalum dilatatum	Dallis grass	non-native	perennial grass	-	-	FAC
Phacelia campanularia	Desert bells	native	annual herb	-	-	-
Phacelia tanacetifolia	Tansy leafed phacelia	native	annual herb	-	-	-
***Phoenix* sp.**	Date palm	non-native	tree	-	-	-
Poa annua	Annual blue grass	non-native	annual grass	-	-	FAC
Polypogon monspeliensis	Annual beard grass	non-native (invasive)	annual grass	-	Limited	FACW

SCIENTIFIC NAME	COMMON NAME	ORIGIN	FORM	RARITY STATUS[1]	CAL-IPC STATUS[2]	WETLAND STATUS[3]
Polypogon viridis	Water beard grass	non-native	perennial grass	-	-	FACW
Pseudognaphalium luteoalbum	Jersey cudweed	non-native	annual herb	-	-	FAC
Rubus armeniacus	Himalayan blackberry	non-native (invasive)	shrub	-	High	FAC
Rumex crispus	Curly dock	non-native (invasive)	perennial herb	-	Limited	FAC
Salix laevigata	Red willow	native	tree	-	-	FACW
Salix gooddingii	Goodding's black willow	native	tree	-	-	FACW
***Salsola* sp.**	-	-	-	-	-	-
Sambucus mexicana	Blue elderberry	native	shrub	-	-	FACU
Silybum marianum	Milk thistle	non-native (invasive)	annual, perennial herb	-	Limited	-
Stipa miliacea* var. *miliacea	Smilo grass	non-native (invasive)	perennial grass	-	Limited	-
Typha angustifolia	Narrow leaf cattail	non-native	perennial herb (aquatic)	-	-	OBL
Verbascum thapsus	Woolly mullein	non-native (invasive)	perennial herb	-	Limited	FACU
Verbena litoralis	Shore vervain	non-native (invasive)	biennial, perennial herb	-	-	-
Washingtonia robusta	Mexican fan palm	non-native (invasive)	tree	-	Moderate	FACW

Note: All species identified using the *Jepson eFlora* [Jepson Flora Project (eds.) 2024]; nomenclature follows *Jepson eFlora* [Jepson Flora Project (eds.) 2024] or Rare Plant Inventory (CNPS 2024). Sp.: "species", intended to indicate that the observer was confident in the identity of the genus but uncertain which species.

[1] **California Native Plant Society. 2024. Rare Plant Inventory (online edition, v9.5). Sacramento, California. Online at: http://rareplants.cnps.org/; most recently accessed: May 2024.**

FE: Federal Endangered
FT: Federal Threatened
SE: State Endangered
ST: State Threatened
SR: State Rare
Rank 1A: Plants presumed extinct in California
Rank 1B: Plants rare, threatened, or endangered in California and elsewhere
Rank 2: Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3: Plants about which we need more information – a review list

SCIENTIFIC NAME	COMMON NAME	ORIGIN	FORM	RARITY STATUS[1]	CAL-IPC STATUS[2]	WETLAND STATUS[3]

Rank 4: Plants of limited distribution – a watch list

[2] **California Invasive Plant Council. 2024. California Invasive Plant Inventory Database. California Invasive Plant Council, Berkeley, CA. Online at: http://www.cal-ipc.org/paf/; most recently accessed: May 2024.**

High:	Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.
Moderate:	Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance; limited-moderate distribution ecologically
Limited:	Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically
Assessed:	Assessed by Cal-IPC and determined to not be an existing current threat

[3] **U.S. Army Corps of Engineers. 2022. National Wetland Plant List, version 3.6. Engineer Research and Development Center. Cold Regions Research and Engineering Laboratory, Hanover, NH. Online at: http://wetland-plants.sec.usace.army.mil/**

OBL:	Almost always found in wetlands
FACW:	Usually found in wetlands
FAC:	Equally found in wetlands and uplands
FACU:	Usually not found in wetlands
UPL:	Almost never found in wetlands
NL:	Not listed, assumed almost never found in wetlands
NI:	No information; not factored during wetland delineation

Wildlife Species Observed within the Study Area during the Biological Assessment on May 28, 2024.

SCIENTIFIC NAME	COMMON NAME	STATUS
BIRDS		
Ardea alba	great egret	No status
Buteo swainsoni	Swainson's hawk	California Threatened (Nesting)
Calypte anna	Anna's hummingbird	No status
Charadrius vociferus	killdeer	No status
Haemorhous mexicanus	house finch	No status
Sayornis nigricans	black phoebe	No status
Melospiza melodia	song sparrow	No status
Mimus polyglottos	northern mockingbird	No status
Molothrus ater	brown-headed cowbird	No status
Zenaida macroura	mourning dove	No status
MAMMALS		
Canis latrans	coyote	No status
REPTILES AND AMPHIBIANS		
Sceloporus occidentalis	western fence lizard	No status
INSECTS		
Apis mellifera	Western honeybee	No status
***Bombus* sp.**	Bumblebee species	No status
Vanessa atalanta	Red admiral	No status
Papilio rutulus	Western tiger swallowtail	No status
Pieris rapae	Common cabbage butterfly	No status

APPENDIX C. SPECIAL-STATUS SPECIES POTENTIAL TABLE

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Appendix C. Potential for Special Status Plant and Wildlife Species to Occur within the Study Area. List Compiled from the California Department of Fish and Wildlife Natural Diversity Database (CDFW 2024), U.S. Fish and Wildlife Service Information for Planning and Consultation Species Lists (USFWS 2024), and California Native Plant Society Rare Plant Inventory (CNPS 2024) search of Stockton West and the surrounding eight USGS 7.5' quadrangles.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
PLANTS				
large-flowered fiddleneck *Amsinckia grandiflora*	Federal endangered	Cismontane woodland, valley and foothill grassland. Elevation ranges from 885 to 1805 feet (270 to 550 meters). Blooms (Mar) Apr-May.	**No Potential.** The Study Area does not contain suitable habitat for this species.	No further actions are recommended for this species.
alkali milk-vetch *Astragalus tener* var. *tener*	Rank 1B.2	Playas, valley and foothill grassland (adobe clay), vernal pools. Elevation ranges from 5 to 195 feet (1 to 60 meters). Blooms Mar-Jun.	**No potential.** No suitable habitat occurs within Study Area.	No further recommendations for this species.
heartscale *Atriplex cordulata* var. *cordulata*	Rank 1B.2	Chenopod scrub, meadows and seeps, valley and foothill grassland (sandy). Elevation ranges from 0 to 1835 feet (0 to 560 meters). Blooms Apr-Oct.	**Unlikely.** Ruderal areas provide some grassland habitat, but it is highly disturbed and isolated.	No further recommendations for this species.
big tarplant *Blepharizonia plumosa*	Rank 1B.1	Valley and foothill grassland. Elevation ranges from 100 to 1655 feet (30 to 505 meters). Blooms Jul-Oct.	**Unlikely.** Ruderal areas provide some grassland habitat, but it is highly disturbed and isolated.	No further recommendations for this species.
watershield *Brasenia schreberi*	Rank 2B.3	Marshes and swamps (freshwater). Elevation ranges from 0 to 7220 feet (0 to 2200 meters). Blooms Jun-Sep.	**No potential.** No suitable habitat occurs within Study Area.	No further recommendations for this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
bristly sedge *Carex comosa*	Rank 2B.1	Coastal prairie, marshes and swamps (lake margins), valley and foothill grassland. Elevation ranges from 0 to 2050 feet (0 to 625 meters). Blooms May-Sep.	**Unlikely.** Ruderal areas provide some grassland habitat, but it is highly disturbed and isolated.	No further recommendations for this species.
Parry's rough tarplant *Centromadia parryi* ssp. *rudis*	Rank 4.2	Valley and foothill grassland, vernal pools. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms May-Oct.	**Unlikely.** Ruderal areas provide some grassland habitat, but it is highly disturbed and isolated.	No further recommendations for this species.
palmate-bracted bird's-beak *Chloropyron palmatum*	FE, SE, Rank 1B.1	Chenopod scrub, valley and foothill grassland. Elevation ranges from 15 to 510 feet (5 to 155 meters). Blooms May-Oct.	**Unlikely.** Ruderal areas provide some grassland habitat, but it is highly disturbed and isolated.	No further recommendations for this species.
slough thistle *Cirsium crassicaule*	Rank 1B.1	Chenopod scrub, marshes and swamps (sloughs), riparian scrub. Elevation ranges from 10 to 330 feet (3 to 100 meters). Blooms May-Aug.	**Unlikely.** Suitable riparian scrub occurs in the Study Area. There are no CNDDB documentations within 5 miles of the Study Area.	No further recommendations for this species.
recurved larkspur *Delphinium recurvatum*	Rank 1B.2	Chenopod scrub, cismontane woodland, valley and foothill grassland. Elevation ranges from 10 to 2590 feet (3 to 790 meters). Blooms Mar-Jun.	**Unlikely.** Ruderal areas provide some grassland habitat, but it is highly disturbed and isolated.	No further recommendations for this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Delta button-celery *Eryngium racemosum*	SE, Rank 1B.1	Riparian scrub (vernally mesic clay depressions). Elevation ranges from 10 to 100 feet (3 to 30 meters). Blooms (May)Jun-Oct.	**Unlikely.** Study Area does not provide suitable microhabitat (seasonally inundated floodplains on clay).	No further recommendations for this species.
San Joaquin spearscale *Extriplex joaquinana*	Rank 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland. Elevation ranges from 5 to 2740 feet (1 to 835 meters). Blooms Apr-Oct.	**Unlikely.** Ruderal areas provide some grassland habitat, but it is highly disturbed and isolated.	No further recommendations for this species.
hogwallow starfish *Hesperevax caulescens*	Rank 4.2	Valley and foothill grassland (mesic clay), vernal pools (shallow). Elevation ranges from 0 to 1655 feet (0 to 505 meters). Blooms Mar-Jun.	**No potential.** No suitable habitat occurs within Study Area.	No further recommendations for this species.
woolly rose-mallow *Hibiscus lasiocarpos* var. *occidentalis*	Rank 1B.2	Marshes and swamps (freshwater). Elevation ranges from 0 to 395 feet (0 to 120 meters). Blooms Jun-Sep.	**No potential.** No suitable habitat occurs within Study Area.	No further recommendations for this species.
Ferris' goldfields *Lasthenia ferrisiae*	Rank 4.2	Vernal pools (alkaline, clay). Elevation ranges from 65 to 2295 feet (20 to 700 meters). Blooms Feb-May.	**No potential.** No suitable habitat occurs within Study Area.	No further recommendations for this species.
Delta tule pea *Lathyrus jepsonii* var. *jepsonii*	Rank 1B.2	Marshes and swamps (brackish, freshwater). Elevation ranges from 0 to 15 feet (0 to 5 meters). Blooms May-Jul(Aug-Sep).	**No potential.** No suitable habitat occurs within Study Area.	No further recommendations for this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Mason's lilaeopsis *Lilaeopsis masonii*	SR, Rank 1B.1	Marshes and swamps (brackish, freshwater), riparian scrub. Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Apr-Nov.	**No potential.** The Study Area does not contain suitable microhabitat of tidal zones in muddy or silty soils.	No further recommendations for this species.
Delta mudwort *Limosella australis*	Rank 2B.1	Marshes and swamps (brackish, freshwater), riparian scrub. Elevation ranges from 0 to 10 feet (0 to 3 meters). Blooms May-Aug.	**Unlikely.** Suitable riparian scrub habitat and microhabitat (mud banks of the Delta) occur in the Study Area. However, there are no documented occurrences of this species within 5 miles of the Study Area.	No further recommendations for this species.
Sanford's arrowhead *Sagittaria sanfordii*	Rank 1B.2	Marshes and swamps (shallow freshwater). Elevation ranges from 0 to 2135 feet (0 to 650 meters). Blooms May-Oct(Nov).	**No potential.** No suitable habitat occurs within Study Area.	No further recommendations for this species.
side-flowering skullcap *Scutellaria lateriflora*	Rank 2B.2	Marshes and swamps, meadows and seeps (mesic). Elevation ranges from 0 to 1640 feet (0 to 500 meters). Blooms Jul-Sep.	**No potential.** No suitable habitat occurs within Study Area.	No further recommendations for this species.
Suisun Marsh aster *Symphyotrichum lentum*	Rank 1B.2	Marshes and swamps (brackish, freshwater). Elevation ranges from 0 to 10 feet (0 to 3 meters). Blooms (Apr)May-Nov.	**No potential.** No suitable habitat occurs within Study Area.	No further recommendations for this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Wright's trichocoronis *Trichocoronis wrightii* var. *wrightii*	Rank 2B.1	Marshes and swamps, meadows and seeps, riparian forest, vernal pools. Elevation ranges from 15 to 1425 feet (5 to 435 meters). Blooms May-Sep.	**No potential.** No suitable habitat occurs within Study Area.	No further recommendations for this species.
saline clover *Trifolium hydrophilum*	Rank 1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. Elevation ranges from 0 to 985 feet (0 to 300 meters). Blooms Apr-Jun.	**No potential.** No suitable habitat occurs within Study Area.	No further recommendations for this species.
WILDLIFE				
MAMMALS				
Pallid bat *Antrozous pallidus*	CDFW Species of Special Concern WBWG High Priority	Found in a variety of habitats ranging from grasslands to mixed forests, favoring open and dry, rocky areas. Roost sites include crevices in rock outcrops and cliffs, caves, mines, and also hollow trees and various manmade structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**No Potential.** No rock outcrops, caves, mines, or hollow trees are present to support roosting for this species.	No further actions are recommended for this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Townsend's western big-eared bat *Corynorhinus townsendii townsendii*	CDFW Species of Special Concern WBWG High Priority	Associated with a wide variety of habitats from deserts to higher-elevation mixed and coniferous forests. Females form maternity colonies in buildings, caves and mines, and males roost singly or in small groups. Foraging typically occurs at edge habitats near wooded areas, e.g. along streams.ma	**No Potential.** There are no mines, caves or abandoned buildings to support roosting by this species.	No further actions are recommended for this species.
spotted bat *Euderma maculatum*	CDFW Species of Special Concern WBWG High Priority	Occupies a wide variety of habitats from arid deserts and grasslands through mixed conifer forests. Feeds over water and along washes. Needs rock crevices in cliffs or caves for roosting.	**No Potential.** There are no mines, caves, or rocky outcrops to support roosting by this species.	No further actions are recommended for this species.
western mastiff bat *Eumops perotis*	CDFW Species of Special Concern WBWG High Priority	Found in a wide variety of open, arid and semi-arid habitats. Distribution appears to be tied to large rock structures which provide suitable roosting sites, including cliff crevices and cracks in boulders.	**No Potential.** There are no mines, caves or abandoned buildings to support roosting by this species.	No further actions are recommended for this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
western red bat *Lasiurus blossevillii*	CDFW Species of Special Concern WBWG High Priority	Highly migratory and typically solitary, roosting primarily in the foliage of trees or shrubs. Roosts are usually in broad-leaved trees including cottonwoods, sycamores, alders, and maples. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas.	**No Potential.** There are no broadleaf riparian trees present to support roosting by this species.	No further actions are recommended for this species.
hoary bat *Lasiurus cinereus*	WBWG Medium	Prefers open forested habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths.	**Unlikely.** Few medium trees with dense foliage are present within the Study Area to provide roosting habitat for this species.	No further actions are recommended for this species.
silver-haired bat *Lasionycteris noctivagans*	WBWG Medium	Primarily a forest dweller, feeding over streams, ponds, and open brushy areas. Summer habitats include a variety of forest and woodland types, both coastal and montane. Roosts in hollow trees, snags, buildings, rock crevices, caves, and under bark.	**No Potential.** There are no conifer forests or thick woodland present to support roosting by this species.	No further actions are recommended for this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
small-footed myotis *Myotis ciliolabrum*	WBWG Medium Priority	Wide range of habitats mostly arid wooded and brushy uplands near water. Seeks cover in caves, buildings, mines, and crevices. Prefers open stands in forests and woodlands. Requires drinking water. Feeds on a wide variety of small flying insects.	**No Potential.** No caves, buildings, mines, or crevices are present within the Study Area to provide suitable cover for this species.	No further actions are recommended for this species.
long-eared myotis *Myotis evotis*	WBWG Medium Priority	Occurs in semiarid shrublands, sage, chaparral, and agricultural areas, but is usually associated with coniferous forests from sea level to 9000 feet. Individuals roost under exfoliating tree bark, and in hollow trees, caves, mines, cliff crevices, and rocky outcrops on the ground. They also sometimes roost in buildings and under bridges.	**Moderate Potential.** Trees and a single bridge within the Study Area may provide suitable roosting habitat for this species.	See Sections 5 and 7 for further discussion of this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
fringed myotis *Myotis thysandoes*	WBWG High	Associated with a wide variety of habitats including dry woodlands, desert scrub, mesic coniferous forest, grassland, and sage-grass steppes. Buildings, mines and large trees and snags are important day and night roosts.	**No Potential.** No buildings, mines, or large trees are present within the Study Area to provide roosting habitat for this species.	No further actions are recommended for this species.
long-legged myotis *Myotis volans*	WBWG High	Primarily found in coniferous forests, but also occurs seasonally in riparian and desert habitats. Large hollow trees, rock crevices and buildings are important day roosts. Other roosts include caves, mines and buildings.	**No Potential.** No large trees are present to support roosting for this species.	No further actions are recommended for this species.
riparian brush rabbit *Sylvilagus bachmani riparius*	Federal Endangered State Endangered	Riparian areas on the San Joaquin River in northern Stanislaus County. Dense thickets of wild rose, willows, and blackberries.	**No Potential.** The Study Area is outside of the range for this species.	No further actions are recommended for this species.
American badger *Taxidea taxus*	CDFW Species of Special Concern	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	**Unlikely**. No badger dens were observed during site visits, and the close proximity to existing development provides anthropogenic disturbance that is likely to dissuade badgers from occupying the area.	No further actions are recommended for this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
BIRDS				
tricolored blackbird *Agelaius tricolor*	California Threatened CDFW Species of Special Concern	Nearly endemic to California, where it is most numerous in the Central Valley and vicinity. Highly colonial, nesting in dense aggregations over or near freshwater in emergent growth or riparian thickets. Also uses flooded agricultural fields. Abundant insect prey near breeding areas essential.	**Unlikely.** Riparian and freshwater emergent vegetation is too sparse to provide suitable nesting habitat. The closest known occurrence is approximately 4 miles south of the Study Area (CDFW 2024b).	No further actions are recommended for this species.
golden eagle *Aquila chrysaetos*	CDFW Fully Protected	Occurs year-round in rolling foothills, mountain areas, sage-juniper flats, and deserts. Cliff-walled canyons provide nesting habitat in most parts of range; also nests in large trees, usually within otherwise open areas.	**Unlikely.** There are no cliff-walled canyons that would provide suitable nesting habitat. There are few large trees present; however, proximity to urban development limits nesting potential.	No further actions are recommended for this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
great blue heron *Ardea herodias*	(Breeding sites protected by CDFW)	Year-round resident. Nests colonially or semi-colonially in tall trees and on cliffs, also sequestered terrestrial substrates. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	**Moderate Potential.** Suitable nesting habitat for this species is present within the Study Area or immediate vicinity.	See Sections 5 and 7 for further discussion of this species.
burrowing owl *Athene cunicularia*	CDFW Species of Special Concern	Year-round resident and winter visitor. Occurs in open, dry grasslands and scrub habitats with low-growing vegetation, perches and abundant mammal burrows. Preys upon insects and small vertebrates. Nests and roosts in old mammal burrows, most commonly those of ground squirrels.	**Unlikely**. Ground squirrel activity is present in the Study Area to support potential nesting for this species. However, the close proximity to existing development provides anthropogenic disturbance that is likely to dissuade this species from occupying the area.	No further actions are recommended for this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Swainson's hawk *Buteo swainsoni*	California Threatened	Summer resident in California's Central Valley and limited portions of the southern California interior. Nests in tree groves and isolated trees in riparian and agricultural areas, including near buildings. Forages in grasslands and scrub habitats as well as agricultural fields, especially alfalfa. Preys on arthropods year-round as well as smaller vertebrates during the breeding season.	**Present.** This species was observed foraging and soaring throughout the Study Area. Furthermore, suitable large trees are present within the Study Area that provide nesting habitat for this species. There is also a CNDDB occurrence (Occ # 2361) recorded within the Study Area.	See Sections 5 and 7 for further discussion of this species.
northern harrier *Circus hudsonius*	CDFW Species of Special Concern	Year-round resident and winter visitor. Found in open habitats including grasslands, prairies, marshes and agricultural areas. Nests on the ground in dense vegetation, typically near water or otherwise moist areas. Preys on small vertebrates.	**Moderate Potential.** The Study Area does not contain suitable nesting habitat, but it may provide suitable foraging habitat.	See Sections 5 and 7 for further discussion of this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
white-tailed kite *Elanus leucurus*	CDFW Fully Protected	Year-round resident in coastal and valley lowlands with scattered trees and large shrubs, including grasslands, marshes and agricultural areas. Nests in trees, of which the type and setting are highly variable. Preys on small mammals and other vertebrates.	**Moderate Potential.** There are scattered trees and shrubs within and adjacent to the Study Area to support this species.	See Sections 5 and 7 for further discussion of this species.
loggerhead shrike *Lanius ludovicianus*	CDFW Species of Special Concern	Year-round resident in open woodland, grassland, savannah and scrub. Prefers areas with sparse shrubs, trees, posts, and other suitable perches for foraging. Preys upon large insects and small vertebrates. Nests are well-concealed in densely-foliaged shrubs or trees.	**Moderate Potential.** Sparse shrubs and trees are present to support foraging and nesting habitat for this species.	See Sections 5 and 7 for further discussion of this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
California black rail *Laterallus jamaicensis coturniculus*	State Threatened	Year-round resident in marshes (saline to freshwater) with dense vegetation within four inches of the ground. Prefers larger, undisturbed marshes that have an extensive upper zone and are close to a major water source. Extremely secretive and cryptic.	**No Potential.** Vegetation within the Study Area is too sparse to support this species.	No further actions are recommended for this species.
song sparrow ("Modesto" population) *Melospiza melodia* pop. 1	CDFW Species of Special Concern	Restricted to the Sacramento and extreme northern San Joaquin Valleys from Colusa County south to Stanislaus County. Associated with woody riparian habitat and freshwater marshes.	**Unlikely.** Woody riparian habitat within the Study Area is too sparse to support this species.	No further actions are recommended for this species.
yellow warbler *Setophaga petechia*	CDFW Species of Special Concern	Summer resident throughout much of California. Breeds in riparian vegetation close to water, including streams and wet meadows. Microhabitat used for nesting variable, but dense willow growth is typical. Occurs widely on migration.	**No Potential.** Typical nesting habitat is not present within the Study Area.	No further actions are recommended for this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Least Bell's vireo *Vireo bellii pusillus*	Federal Endangered State Endangered	Summer resident. Breeds in riparian habitat along perennial or intermittent rivers and creeks; prefers a multi-tiered canopy with dense early successional vegetation in the understory. Willows, mulefat and other understory species are typically used for nesting.	**No Potential.** Suitable nesting habitat is not present within the Study Area.	No further actions are recommended for this species.
Yellow-headed blackbird *Xanthocephalus xanthocephalus*	CDFW Species of Special Concern	Breeds almost exclusively in marshes with tall emergent vegetation, such as tules or cattails. Forages in riparian, emergent marsh and occasionally upland habitat.	**Unlikely.** Emergent vegetation within the Study Area is too sparse to provide suitable habitat for this species.	No further actions are recommended for this species.
REPTILES & AMPHIBIANS				
northwestern pond turtle *Actinemys marmorata*	Fenderal Proposed Threatened CDFW Species of Special Concern	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Require basking sites such as partially submerged logs, vegetation mats, or open mud banks, and suitable upland habitat (sandy banks or grassy open fields) for egg-laying.	**Moderate Potential.** The Study Area provides suitable aquatic habitat to support this species.	See Sections 5 and 7 for further discussion of this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
California tiger salamander - central California DPS *Ambystoma californiense* pop. 1	Federal Threatened California Threatened	Populations in Santa Barbara and Sonoma counties currently listed as endangered; threatened in remainder of range. Inhabits grassland, oak woodland, ruderal and seasonal pool habitats. Adults are fossorial and utilize mammal burrows and other subterranean refugia. Breeding occurs primarily in vernal pools and other seasonal water features.	**No Potential.** The Study Area does not provide seasonal pool habitats suitable for breeding.	No further actions are recommended for this species.
western spadefoot *Spea (=Scaphiopus) hammondii*	CDFW Species of Special Concern	Occurs primarily in grassland habitats but can be found in valley-foothill hardwood woodlands. Shallow temporary pools formed by winter rains are essential for breeding and egg-laying.	**No Potential.** There are no temporary pools within the Study Area that may support breeding for this species.	No further actions are recommended for this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
giant gartersnake *Thamnophis gigas*	Federal Threatened State Threatened	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches. This is the most aquatic of the garter snakes in California.	**Unlikely.** The Study Area does not provide sufficient vegetative cover or emergent vegetation for this species. There is a historical occurrences dating from 1880 in present urban/industrial land within 1 mile of the Study Area (Occ #351). There is one recent observations of the species within the San Joaquin river approximately 5.3 miles northwest of the project site (Occ # 425, CDFW 2024b).	No further actions are recommended for this species.
FISH				
green sturgeon – southern DPS *Acipenser medirostris* pop. 1	Federal Threatened	Anadromous; spawns in the Sacramento and Feather Rivers. Preferred spawning substrate is large cobble but ranges from clean sand to bedrock. Adults occur throughout the San Francisco Bay estuary and coastal marine waters.	**Moderate.** Suitable aquatic habitat is present within the Study Area. However, confirmed encounters of this species is uncommon throughout the San Joaquin River with only two confirmed occurrences (CDFW 2024b, Root et. al., 2020). NMFS considers this species present in the San Joaquin River.	See Sections 5 and 7 for further discussion of this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
White sturgeon *Acipenser transmontanus*	State Candidate Threatehend CDFW Species of Special Concern	Anadromous; found in most estuaries along the Pacific coast. Most abundant in brackish portions of estuaries. In estuaries adults concentrate in deep areas with soft bottoms. Adults in the San Francisco Bay Estuary system spawn in the Sacramento River and are not known to enter freshwater or non-tidal reaches of Estuary streams. Spawns May through June.	**Moderate Potential.** Suitable aquatic habitat is present within the Study Area. This species is known to spawn within the lower reaches of the San Joaquin River (Moyle 2002).	See Sections 5 and 7 for further discussion of this species.
Delta smelt *Hypomesus transpacificus*	Federal Threatened State Endangered	Lives in the Sacramento-San Joaquin estuary in areas where salt and freshwater systems meet. Occurs seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Seldom found at salinities > 10 ppt; most often at salinities < 2 ppt.	**Moderate Potential.** While suitable aquatic habitat is present within the Study Area, CDFW's FMWT has not documented a single observation nearby since 1999 (CDFW 2024d). The USFWS still considers this species as having potential to occur in the San Joaquin River (USFWS 2022).	See Sections 5 and 7 for further discussion of this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
steelhead - Central Valley DPS *Oncorhynchus mykiss irideus* pop. 11	Federal Threatened	Documented in the mainstem San Joaquin River. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	**Moderate Potential.** Suitable migratory habitat is present within the Study Area. Steelhead would be present during seasonal spawning migrations from July through March, and juvenile outmigration from January through June.	See Sections 5 and 7 for further discussion of this species.
Central Valley Spring-Run ESU Chinook salmon *Oncorhynchus tshawytscha* pop 11	Federal Threatened	Documented in the mainstem San Joaquin River. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	**Moderate Potential.** Suitable migratory habitat is present within the Study Area. Spring-run Chinook salmon would be present during seasonal spawning migrations and juvenile outmigration from February through May.	See Sections 5 and 7 for further discussion of this species.
longfin smelt *Spirinchus thaleichthys*	State Threatened	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15 to 30 ppt, but can be found in completely freshwater to almost pure seawater.	**Unlikely.** Preferred saline water is absent from the Study Area. This species was last seen in 1987 at the nearby station in CDFW's FMWT and STN (CDFW 2024d, 2024e).	No further actions are recommended for this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
INVERTEBRATES				
vernal pool fairy shrimp *Branchinecta lynchi*	Federal Threatened	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	**No Potential.** There are no suitable pools or depressions present within the Study Area to support this species.	No further actions are recommended for this species.
Crotch bumble bee *Bombus crotchii*	California Candidate Endangered	Range largely restricted to California, favoring grassland and scrub habitats. Typical of bumble bees, nests are usually constructed underground.	**Moderate Potential.** The Study Area contains foraging and nesting habitat to support this species. Foraging resources include Himalayan blackberry and shore vervain. Nesting habitat includes sparse ground squirrel burrows, jute netting, and riprap along levee slopes. The nearest documented CNDDB occurrence of this species is approximately 12 miles southeast of the Study Area (CDFW 2024b).	See Sections 5 and 7 for further discussion of this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
western bumble bee *Bombus occidentalis*	California Candidate Endangered	Formerly common throughout much of western North America; populations from southern British Columbia to central California have nearly disappeared. Occurs in a wide variety of habitat types. Nests are constructed annually in pre-existing cavities, usually on the ground (e.g. mammal burrows). Many plant species are visited and pollinated.	**Unlikely.** This species is considered extirpated from low-elevation areas in Northern and Central California**.** The nearest documented CNDDB occurrence of this species is approximately 9 miles south of the Study Area (CDFW 2024a).	See Sections 5 and 7 for further discussion of this species.
monarch butterfly *Danaus plexippus*	Federal Candidate	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, Monterey cypress), with nectar and water sources nearby.	**No Potential.** Monarch roosts are tracked by CDFW and are not known to occur within the Study Area.	None.
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	Federal Threatened	Occurs only in the central valley of California, in association with blue elderberry (*Sambucus* spp.). Prefers to lay eggs in elderberrry 2 to 8 inches in diameter; some preference shown for "stressed" elderberry.	**Moderate Potential.** Blue elderberry within the Study Area provides suitable habitat for this species. No VELB exit holes were observed in blue elderberry plants within the Study Area. The closest documented CNDDB occurrence is approximately 5 miles south of the Study Area (CDFW 2024b).	See Sections 5 and 7 for further discussion of this species.

SCIENTIFIC NAME	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
vernal pool tadpole shrimp *Lepidurus packardi*	Federal Endangered	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	**No Potential.** There are no vernal pools within the Study Area to support this species.	No further actions are recommended for this species.

Potential for Occurrence:

No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

Present. Species was observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently.

APPENDIX D. DELINEATION REPORT

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Delineation of Potential Waters of the U.S. and State

Stockton San Joaquin River Pipeline Remediation Project

Stockton, San Joaquin County, California









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List of Acronyms

CFR	Code of Federal Regulations
Corps	U.S. Army Corps of Engineers
CSRL	California Soil Resource Lab
CWA	Clean Water Act
FAC	Facultative Plant
FACU	Facultative Upland Plant
FACW	Facultative Wetland Plant
HTL	High Tide Line
HUC	Hydrologic Unit Code
MHW	Mean High Water
NAVD88	North American Vertical Datum of 1988
NL	Not Listed
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
NWPL	National Wetland Plant List
OBL	Obligate Wetland Plant
OHWM	Ordinary High Water Mark
RHA	Rivers and Harbors Act
RWQCB	Regional Water Quality Control Board
SWRCB	California State Water Resources Control Board
UPL	Upland Plant
USGS	U.S. Geological Survey
WRA	WRA, Inc.

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1.0 INTRODUCTION

This report presents the results of a delineation of potential waters of the U.S. as defined by the Clean Water Act (CWA) and waters of the state as defined by the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (State Wetland Policy, SWRCB 2019). The Study Area for this delineation includes the San Joaquin River and surrounding Levees adjacent to the City of Stockton Wastewater Recovery Center (WRC), located in the City of Stockton, San Joaquin County, California (Study Area; Appendix A – Figure 1). The Study Area consists of approximately 22.9 acres and includes the following parcels: APN 163-33-003, 163-34-009, and 162-14-001, as well as the portion of the San Joaquin River between these parcels.

On May 28, 2024, WRA, Inc. (WRA) conducted a delineation within the Study Area to identify wetlands and non-wetland waters potentially subject to jurisdiction by the U.S. Army Corps of Engineers (Corps) under Section 404 of the CWA and/or Section 10 of the Rivers and Harbors Act (RHA) as well as the California State Water Resources Control Board (SWRCB) and Regional Water Quality Control Board (RWQCB) as defined in the State Wetland Policy (SWRCB 2019).

One aquatic resource feature was mapped within the Study Area: the San Joaquin River. This feature is classified as a tidal perennial river (R1UBT) and covers 12.59 acres / 2,244 linear feet. The San Joaquin River is a jurisdictional aquatic resource subject to regulation by the Corps, RWQCB, and CDFW.

The following sections describe the regulatory background and methods used to guide the delineation and provide a summary of wetlands and non-wetland waters within the Study Area. This delineation is considered "potential" subject to the approval of the Corps and, where appropriate, RWQCB[1].

[1] *Per the State Wetland Policy (SWRCB 2019), the SWRCB or local RWQCB "shall rely on any wetland area delineation from a final aquatic resource report verified by the Corps for the purposes of determining the extent of wetland waters of the U.S. A delineation of any wetland areas potentially impacted by the project that are not delineated in a final aquatic resource report verified by the Corps shall be performed using the methods described in the ..."1987 Manual and Supplements" to determine whether the area meets the state definition of a wetland."*

2.0 REGULATORY BACKGROUND

2.1 Section 404 of the Clean Water Act

The objective of the CWA is to maintain and restore the chemical, physical, and biological integrity of the waters of the U.S. (33 CFR Part 328 Section 328.4). Waters of the U.S. is the encompassing term for areas that qualify for federal regulation under Section 404 of the CWA. Section 404 of the CWA gives the U.S. Environmental Protection Agency (EPA) and the Corps regulatory and permitting authority regarding discharge of dredged or fill material into "navigable" waters of the U.S. Section 502(7) of the CWA defines navigable waters as "waters of the United States, including territorial seas." Section 328 of Chapter 33 in the Code of Federal Regulations (CFR) defines the term "waters of the United States" as it applies to the jurisdictional limits of the authority of the Corps under the CWA. A summary of this definition of "waters of the United States" in 33 CFG 328.3(a) includes:

> *(1) waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; the territorial seas; or interstate waters;*
>
> *(2) impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (5) of this section;*
>
> *(3) tributaries of waters identified in paragraph (1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;*
>
> *(4) wetlands adjacent to the following waters: waters identified in paragraph (1) of this section; or relatively permanent, standing or continuously flowing bodies of water identified in paragraph (2) or (3) of this section and with a continuous surface connection to those waters;*
>
> *(5) intrastate lakes and ponds not identified in paragraphs (1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (1) or (3) of this section.*

The definitions of wetlands and non-wetland waters, as well as areas exempt from jurisdiction, are discussed in more detail below.

2.1.1 Wetlands

Wetlands are defined in 33 CFR 328.3(c) as:

> *...those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.*

The basis for determining whether a given area is a wetland for the purposes of Section 404 of the CWA is outlined in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Delineation Manual* for the respective region (Arid West or Western Mountains, Valleys, and Coast for California). As defined in 33 CFR 328.4(c), the extent of federal jurisdiction within wetlands is defined as extending to the limit of the wetland as determined using the methods outlined in the manuals.

2.1.2 Non-Wetland Waters

The limit of federal jurisdiction in tidal non-wetland waters extends to the high tide line (HTL) which is defined in 33 CFR 328.3(c) as:

> *...the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.*

The limit of federal jurisdiction in non-tidal non-wetland waters extends to the ordinary high water mark (OHWM) which is defined in 33 CFR 328.3(c) as:

> *...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*

2.1.3 Areas Exempt from Section 404 Jurisdiction

Some areas that meet the technical criteria for wetlands or waters may not be jurisdictional under the CWA per Section 404 regulations and the Corps Manual. As defined in 33 CFR 328.3(b), the following features are exempt from Section 404 Jurisdiction:

> *(1) Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;*
>
> *(2) Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA;*
>
> *(3) Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;*

(4) Artificially irrigated areas that would revert to dry land if the irrigation ceased;

(5) Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;

(6) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;

(7) Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body water meets the definition of waters of the United States; and

(8) Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

2.2 Section 10 of the Rivers and Harbors Act

The Corps also has jurisdiction over "navigable waters" under Section 10 of the Rivers and Harbors Act of 1899 (RHA). Section 10 of this Act applies to tidal areas below mean high water (MHW) and includes tidal areas currently subject to tidal influence, as well as historic tidal areas behind levees that both historically and presently reside at or below MHW. "Navigable waters of the United States," as defined in 33 CFR Part 329, are those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

The act prohibits any unauthorized action that obstructs navigable capacity. These actions can include building of structures; excavation, fill; and alterations and modifications to navigable waters (33 USC 403). A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events which impede or destroy navigable capacity. The upper limit of navigable water is at the point along its length where the character of the river changes from navigable to non-navigable, such as at a major fall or rapids. Since the upper limit of navigability of waterways under Section 10 jurisdiction is sometimes difficult to discern, determinations of navigability under Section 10 are often made by the Corps and kept on file, independent of submitted permit applications or delineations.

2.3 Waters of the State

The Porter-Cologne Water Quality Control Act gives the SWRCB authority to regulate discharge of dredged or fill material that may affect the quality of "waters of the state." "Waters of the state" are defined broadly as (SWRCB 2019):

> *...any surface water or groundwater, including saline waters, within the boundaries of the state.*

In April 2019, the SWRCB adopted the State Wetland Policy, which provides a state wetland definition, procedures, and requirements for regulation of the discharge of dredge or fill material to wetlands and non-wetland waters of the state. The State Wetland Policy also includes exemptions from regulation of dredge and fill discharges for certain types of wetland and non-wetland waters features, as well as for certain classes of activities, such as activities covered by an existing RWQCB or SWRCB Order. The state wetland definition (SWRCB 2019), is similar to, but slightly different from that used by the Corps:

An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The State Wetland Policy utilizes existing Corps delineation procedures (Environmental Laboratory 1987, Corps 2008, 2010). According to the State Wetland Policy, the SWRCB and RWQCBs generally rely on the Corps for verification of wetland and non-wetland waters as part of an aquatic resource report. Any potential wetland area not identified in a report verified by the Corps is required to be delineated using Corps methods for consideration as a state wetland and verification by SWRCB or RWQCB staff. This report includes wetlands and non-wetland waters meeting both the Corps and state wetland definitions. Some features mapped as non-wetland waters under the Corps wetland definition may be considered wetlands under the state definition.

This report identifies wetlands and non-wetland waters according to the Corps definitions and criteria, consistent with the State Wetland Policy's reliance of these criteria. This report also recognizes that some non-wetland waters features may meet the wetland definition of the State Wetland Policy. The State Wetland Policy regulates wetlands and non-wetland waters equivalently. Therefore, the classification of an unvegetated feature as a wetland or non-wetland water does not affect the scope of State regulation of that feature. In contrast, feature classification for purposes of Corps jurisdiction can affect some regulatory permitting decisions, such as determining the applicability of Nationwide Permit Program thresholds. Therefore, the Corps definitions are relied upon for feature classifications in this report. In some cases, features mapped and classified as non-wetland waters may meet the State Wetland Policy definition of a wetland, where those features contain anaerobic substrates. Regardless of how they are defined, wetlands and non-wetland waters deemed jurisdictional may be regulated by the RWQCB and/or SWRCB under the State Wetland Policy.

3.0 STUDY AREA DESCRIPTION

The approximately 22.9-acre Study Area is located in Stockton, San Joaquin County, California (Appendix A – Figure 1). The Study Area can be reached from I-5 via exiting onto Ort J. Lofthus Fwy (west), then turning right (west) onto Navy Drive. Access to the Study Area is located through the City of Stockton WRC at 2500 Navy Drive. Surrounding land uses include industrial, agriculture, and urban development (Google Earth 2024, NETR 2024). Historically, the Study Area was surrounded by agricultural land uses to the west, south, and east, with urban and industrial development encroaching from the northeast over time (NETR 2024). The Stockton WRC has been located immediately northeast of the Study Area since at least 1957 (NETR 2024).

The majority of the Study Area consists of the open water of the San Joaquin River, which is surrounded by developed and ruderal levees with patches of riparian woodland. Undeveloped areas include the San Joaquin River and patches of riparian woodland, including northern California walnut groves and eucalyptus groves. Developed areas include the ruderal and bare ground habitat along the levees, and a single-lane bridge spanning the San Joaquin River. Ruderal vegetation is sparse and is dominated by non-native annual species. Several outbuildings are located south of the San Joaquin River as well.

3.1 Vegetation

Vegetation within the Study Area consists of ruderal/developed areas and patchy riparian woodlands. Dominant vegetation within ruderal areas includes weedy annual herbs such as Italian rye grass (*Festuca perennis*), ripgut brome (*Bromus diandrus*), stinkwort (*Dittrichia graveolens*), prickly lettuce (*Lactuca serriola*), and short-podded mustard (*Hirschfeldia incana*). Occasional trees and shrubs form an open and discontinuous cover, including blue elderberry (*Sambucus mexicana*), Mexican fan palm (*Washingtonia robusta*), and date palms (*Phoenix* sp.).

The patchy riparian woodland vegetation communities occur within the levee banks of the San Joaquin River. These riparian woodland communities include blue gum eucalyptus (*Eucalyptus globulus*) groves, northern California walnut (*Juglans hindsii*) groves, and mixed riparian woodlands. The eucalyptus and northern California walnut groves are dominated by the eponymous species, and the mixed riparian tree canopy is composed of blue elderberry, edible fig (*Ficus carica*), Gooding's black willow (*Salix gooddingii*), and boxelder (*Acer negundo*). The riparian shrub layer is dominated by Himalayan blackberry (*Rubus armeniacus*), blue elderberry saplings, and common buttonbush (*Cephalanthus occidentalis*).

The Study Area is highly disturbed, with the majority of the site composed of ruderal and developed areas. The patchy riparian woodlands are located along the levee banks.

3.2 Soils

Web Soil Survey (USDA 2024a) and SoilWeb (CSRL 2024) list 3 soil mapping units within the Study Area: *Meritt silty clay loam, partially drained, 0 to 2 percent slopes*, *yellowlark gravelly loam, 2 to 5 percent slopes*, and *water*. Descriptions of the soil series that comprise the soil mapping units are provided below. The distribution of these soil mapping units within the Study Area is depicted in Appendix A – Figure 3.

Merritt Series: This series consists of shallow, loamy soils formed from alluvium derived from mixed rock sources and is situated on floodplains at elevations ranging from 0 to 50 feet. These soils are poorly drained with medium runoff and moderately high porosity. They range from neutral to moderately alkaline. The Merrit soil mapping units within the Study Area are considered hydric (USDA 2024).

Yellowlark Series: This series consists of shallow, gravelly loam soils formed from alluvium derived from mixed rock sources and is situated on fan remnants at elevations ranging from 110 to 270 feet. These soils are well drained with high runoff and very low porosity. They range from neutral to moderately acidic. The Yellowlark soil mapping units within the Study Area are not considered hydric (USDA 2024).

Water: This map unit has no applicable soil unit properties; it represents the open water of the San Joaquin River.

3.3 Hydrology

The Study Area is located in Roberts Island – Trapper Slough region (HUC 12: 180400030502), within the San Joaquin Delta (HUC 8: 180400030502) Hydrologic Unit Code (HUC)-8 watershed (NRCS 2024). Annual rainfall within this watershed averages 16 inches, with the majority of rain falling between November and March. Hydrological sources for the Study Area include rainfall

precipitation; a muted tidal influence from the San Francisco Bay (NOAA 2024b); and irrigation runoff, particularly during the summer irrigation season (Central Valley RWQCB 2009).

The Stockton West U.S. Geological Survey (USGS) quadrangle (USGS 2021) shows the San Joaquin River flowing through the Study Area. The natural hydrology of the site is constrained by anthropogenic levees on the north and south banks. The San Joaquin flows northwest through the Study Area and continues north and west before flowing to Suisun Bay, San Pablo Bay, San Francisco Bay, and the Pacific. The San Joaquin River is designated by the Corps as a Traditional Navigable Water (TNW) (Corps 2024).

4.0 METHODS

WRA biologists performed a delineation of aquatic resources within the Study Area on May 28, 2024. Prior to conducting the evaluation, WRA reviewed a range of background materials including the Web Soil Survey (USDA 2024a), SoilWeb (CSRL 2024), the National Wetlands Inventory (NWI; USFWS 2024), the California Aquatic Resource Inventory (SFEI 2024), and the USGS Stockton West 7.5-minute quadrangle map (USGS 2021). WRA also reviewed current and historic aerial imagery (Google Earth 2024, NETR 2024).

4.1 Wetlands

WRA followed the Routine Method to evaluate the Study Area for the presence or absence of indicators of the three wetland parameters described in the Corps Manual (Environmental Laboratory 1987) and Arid West Supplement (Corps 2008). Data on vegetation, hydrology, and soils were collected at sample points within potential wetland communities and adjacent upland areas. Sample points that contained positive indicators for hydrophytic vegetation, hydric soils, and wetland hydrology were considered to be wetland. Except in cases of atypical or problematic wetland situations (i.e., difficult wetland situations, as described below), sample points that lacked one or more indicators were considered to be upland. Sample point data were reported on Arid West Supplement data forms. Sample point locations were recorded using a handheld GPS unit with mapping grade accuracy.

4.1.1 Vegetation

Plant species observed in the Study Area were identified using the Jepson eFlora (Jepson Flora Project 2024). Plants were assigned a wetland indicator status according to the National Wetland Plant List (NWPL; Corps 2022a).

Wetland indicator statuses listed in the NWPL are based on the expected frequency of occurrence in wetlands, as shown in the table below.

Table 1. Explanation of the Wetland Indicator Statuses in the National Wetland Plant List

CLASSIFICATION (ABBREVIATION)	DEFINITION	HYDROPHYTIC SPECIES? (Y/N)
Obligate (OBL)	Almost always is a hydrophyte, rarely in uplands	Y
Facultative Wetland (FACW)	Usually is a hydrophyte but occasionally found in uplands	Y
Facultative (FAC)	Commonly occurs as either a hydrophyte or non-hydrophyte	Y

CLASSIFICATION (ABBREVIATION)	DEFINITION	HYDROPHYTIC SPECIES? (Y/N)
Facultative Upland (FACU)	Occasionally is a hydrophyte but usually occurs in uplands	N
Upland / Not Listed (UPL / NL)	Rarely is a hydrophyte, almost always in uplands	N

The presence of hydrophytic vegetation was then determined based on indicator tests described in the Arid West Supplement. The Arid West Supplement requires that a three-step process be conducted to determine if hydrophytic vegetation is present. The procedure first requires the delineator to apply the "50/20 rule" (Indicator 1; Dominance Test) described in the manual. To apply the "50/20 rule," dominant species are chosen independently from each stratum of the community. Dominant species are determined for each vegetation stratum from a sampling plot of an appropriate size surrounding the sample point. Dominants are the most abundant species that individually or collectively account for more than 50 percent of the total vegetative cover in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total vegetative cover. If more than 50 percent of the dominant species has an OBL, FACW, or FAC status, the sample point meets the hydrophytic vegetation criterion.

If the sample point fails Indicator 1 and both hydric soils and wetland hydrology are not present, then the sample point does not meet the hydrophytic vegetation criterion, unless the site is a problematic wetland situation; however, if the sample point fails Indicator 1 but hydric soils and wetland hydrology are both present, the delineator must apply Indicator 2.

Indicator 2 is known as the Prevalence Index. The prevalence index is a weighted average of the wetland indicator status for all plant species within the sampling plot. Each indicator status is given a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, and UPL = 5). Indicator 2 requires the delineator to estimate the percent cover of each species in every stratum of the community and sum the cover estimates for any species that is present in more than one stratum. The delineator must then organize all species into groups according to their wetland indicator status and calculate the Prevalence Index using the following formula, where A equals total percent cover:

$$PI = \frac{A_{OBL} + 2A_{FACW} + 3A_{FAC} + 4A_{FACU} + 5A_{UPL}}{A_{OBL} + A_{FACW} + A_{FAC} + A_{FACU} + A_{UPL}}$$

The Prevalence Index will yield a number between 1 and 5. If the Prevalence Index is equal to or less than 3, the sample point meets the hydrophytic vegetation criterion; however, if the community fails Indicator 2, the delineator must proceed to Indicator 3.

Indicator 3 is known as Morphological Adaptations. If more than 50 percent of the individuals of a FACU species have morphological adaptations for life in wetlands, that species is considered a hydrophyte and its indicator status should be reassigned to FAC. If such observations are made, the delineator must recalculate Indicators 1 and 2 using a FAC indicator status for this species. The sample point meets the hydrophytic vegetation criterion if either test is satisfied.

4.1.2 Soils

The Natural Resource Conservation Service (NRCS) defines a hydric soil as follows:

> *"A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part."*
>
> Federal Register July 13, 1994,
> U.S. Department of Agriculture, NRCS

Soils formed over long periods of time under wetland (anaerobic) conditions often possess characteristics that indicate they meet the definition of hydric soils. Hydric soils can have a hydrogen sulfide (rotten egg) odor, low chroma matrix color, designation of 0, 1, or 2 (used to identify them as hydric), presence of redox concentrations, gleyed or depleted matrix, or high organic matter content.

Specific indicators used to determine whether a soil is hydric for the purposes of wetland delineation are provided in the NRCS *Field Indicators of Hydric Soils in the U.S.* (USDA 2018). Soil samples were collected and described according to the methodology provided in the Arid West Supplement. Soil chroma and values were determined by utilizing a standard Munsell soil color chart (Munsell Color 2009).

Hydric soils were determined to be present if any of the soil samples met one or more of the hydric soil indicators described in *Field Indicators of Hydric Soils in the U.S.* (USDA 2018) that occur in the Arid West region.

4.1.3 Hydrology

The Corps jurisdictional wetland hydrology criterion is satisfied if an area is inundated or saturated for a period sufficient to create anoxic soil conditions during the growing season (a minimum of 14 consecutive days in the Arid West region). Evidence of wetland hydrology can include primary indicators, such as visible inundation or saturation, drift deposits, oxidized root channels, and salt crusts, or secondary indicators such as the FAC-Neutral Test, presence of a shallow aquitard, or crayfish burrows. The Arid West Supplement contains primary and secondary hydrology indicators. Only one primary indicator is required to meet the wetland hydrology criterion; however, if secondary indicators are used, at least two secondary indicators must be present to conclude that an area has wetland hydrology.

The presence or absence of the primary or secondary indicators described in the Arid West Supplement was utilized to determine if sample points within the Study Area met the wetland hydrology criterion.

A hydrologic analysis using the Antecedent Precipitation Tool (Deters 2024) was conducted to determine whether precipitation levels during the 3 months prior to the site visits were above, below, or within the 30-year average for the region as well as to determine if the region was experiencing long-term drought conditions. Long-term precipitation data were obtained from weather stations in the vicinity of the Study Area. Drought condition data were obtained from monthly Palmer Drought Severity Index dataset published by the National Ocean and Atmospheric Administration (NOAA 2024a).

During the 3-month period prior to the site visit, precipitation was normal (May and March) and wet (April). At the time of the site visit, the region was experiencing incipient drought. The full results of the Antecedent Precipitation Tool analysis are provided as Appendix E.

4.2 Non-Wetland Waters

This study also evaluated the presence of non-wetland waters using Corps manuals and guidance for the identification of OHWM indicators (Corps 2005, Lichvar and McColley 2008). Examples of non-wetland waters include lakes, rivers, and streams in addition to all areas below the HTL in areas subject to tidal influence. Non-wetland water types potentially subject to both Corps and RWQCB/SWRCB jurisdiction were investigated and identified in the field and as part of this report.

4.2.1 High Tide Line

The HTL within the Study Area was determined based on the highest predicted tide for 2024 at the National Oceanic and Atmospheric Administration (NOAA) Borden Highway Bridge, San Joaquin River tide station (Station ID: 9414367) and adjusted to the North American Vertical Datum of 1988 (NAVD88). Based on this analysis, the elevation of the HTL in the Study Area was determined to be approximately 4.6 feet NAVD88.

4.2.2 Ordinary High Water Mark

The location of the OHWM in non-wetland waters was determined based on the Interim National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams (Corps 2022b), the Corps of Engineers Regulatory Guidance Letter 05-05 (Corps 2005), and A Field Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States (OHWM Guide; Mersel and Lichvar 2014). This combination of OHWM delineation manuals is best suited to determining the location of OHWM at the site. The location of the OHWM was determined based on a combination of indicators observed on the ground as described in these manuals. Where direct access to the OHWM was feasible, it was mapped in the field using a GPS unit with mapping grade accuracy. Where direct access to the OHWM was not feasible, the location of the OHWM was hand drawn in the field on aerial photographs and topographical maps for subsequent digitizing in ArcGIS. Within the Study Area, access to the OHWM was not feasible due to safety issues (i.e., steep levee slopes and fast, high volume flows within the San Joaquin). The average width of the OHWM was measured with ArcGIS.

5.0 RESULTS

A map showing the location and extent of potential jurisdictional waters mapped within the Study Area is provided in Appendix A – Figure 4. As discussed above, the features are classified according to definitions relied upon by the Corps, which in some cases may differ from classification under the State Wetland Policy. Corps jurisdiction is mapped to the OHWM, while RWQCB and CDFW jurisdictions extend to the top-of-bank (TOB) or the edge of riparian canopy, whichever is farther. A summary of acreages of potential Corps jurisdiction under Section 404 of the CWA and under Section 10 of the RHA, as well as acreages of potential RWQCB and CDFW jurisdiction under the State Wetland Policy, is provided in Table 2 below.

Arid West OHWM Datasheets are provided as Appendix B. Photographs of the Study Area are provided as Appendix C. A list of all plant species observed during the delineation site visits is included as Appendix D. The results of a precipitation and hydrological analysis are included as Appendix E.

Table 2. Summary of Wetlands and Non-Wetland Waters Mapped Within the Study Area

FEATURE TYPE	CLASSIFICATION[1]	POTENTIAL SECTION 404 CWA AND SECTION 10 RHA WATERS OF THE U.S.		POTENTIAL WATERS OF THE STATE	
		ACRES	LINEAR FEET	ACRES	LINEAR FEET
Non-Wetland Water[2]					
Tidal Perennial River	R1UBT	12.59	2,244	15.11	2,244
Total:		**12.59**	**2,244**	**15.11**	**2,244**

[1]FGDC 2013

[2]Some non-wetland waters may meet the definition of a wetland in the State Wetland Policy.

5.1 Wetlands

No wetlands were mapped within the Study Area during the May 2024 delineation.

5.2 Non-Wetland Waters

TIDAL PERENNIAL RIVER

One tidal perennial river occurs in the Study Area: the San Joaquin River. This feature covers 12.59 acres and 2,244 linear feet within the Study Area. Tidal perennial rivers are characterized by having a year-round flow of water which persists throughout the dry season, and by experiencing daily tides. Within the Study Area, the San Joaquin River is unvegetated (<1% absolute cover) and experiences two high tides per day.

Indicators of the OHWM included the presence of surface water, absence of vegetation below the OHWM, water staining on the levee bank riprap, and gage data from the San Joaquin River BL Garwood Bridge (Gage 11304810). The San Joaquin River is tidally influenced within the Study Area (CARI 2023), and it is recognized as a traditionally navigable waterway by the Army Corps of Engineers (Corps) Sacramento District (Corps 2024). The San Joaquin River is a jurisdictional aquatic resource subject to regulation by the Corps, RWQCB, and CDFW.

The San Joaquin River is classified as R1UBT: riverine (R), tidal (1), unconsolidated bottom (UB), semi-permanently flooded-tidal (T).

5.3 Section 10 of the Rivers and Harbors Act

The inland extent of Section 10 jurisdiction was determined from an online mapping tool hosted on the Corps Sacramento District's website[2]. The San Joaquin River is classified as a traditional navigable waterway (TNW) by the Corps from the mouth to Sycamore Road (7 miles downstream from US 99 Fresno) (Corps 2024). The entirety of the San Joaquin River within the Study Area falls within the TWN classification and is subject to Corps jurisdiction under Section 10 of the Rivers and Harbors Act.

[2] *http://www.spk.usace.army.mil/Missions/Regulatory/Jurisdiction/Navigable-Waters-of-the-US/*

6.0 CONCLUSION AND JURISDICTIONAL ANALYSIS

The results of this delineation of aquatic resources were based on conditions observed during the time of the assessment and information provided to WRA by the City of Stockton. The delineation uses the federal methodology to determine the potential boundaries of wetlands and non-wetland features and is consistent with the approach used by the RWQCB to determine wetlands subject to the State Wetland Policy.

6.1 Potential Waters of the U.S.

Based on the findings of the aquatic resource delineation, the Study Area contains approximately 12.59 acres (2,244 linear feet) of tidal perennial river that would be considered jurisdictional by the Corps under Section 404 and 401 of the CWA, and under Section 10 of the Rivers and Harbors Act, as this feature has been classified as a "traditional navigable water" by the Corps Sacramento District (Corps 2024). This non-wetland water is also considered potential waters of the State per Section 401 of the Clean Water Act.

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APPENDIX A. FIGURES

Figure 1. Study Area Regional Location



Path: L:\Acad 2000 Files\330000\330314\GIS\ArcMap\330314Base.aprx Layout Name:Fig1_Study Area Regional Location Map

Sources: National Geographic, WRA | Prepared By: njander, 7/25/2024

Figure 1. Study Area Regional Location Map

Stockton Wastewater Pipeline
Depth of Cover Remediation Project
San Joaquin County, California

0 0.25 0.5 Miles

N

wra Environmental Consultants

Figure 2. Aerial Photograph



Path: L:\Acad 2000 Files\330000\330314\GIS\ArcMap\330314Base.aprx Layout Name: Fig2_Aerial Photograph

Sources: USDA NAIP Imagery 2022, WRA | Prepared By: njander, 7/25/2024

Figure 2. Aerial Photograph

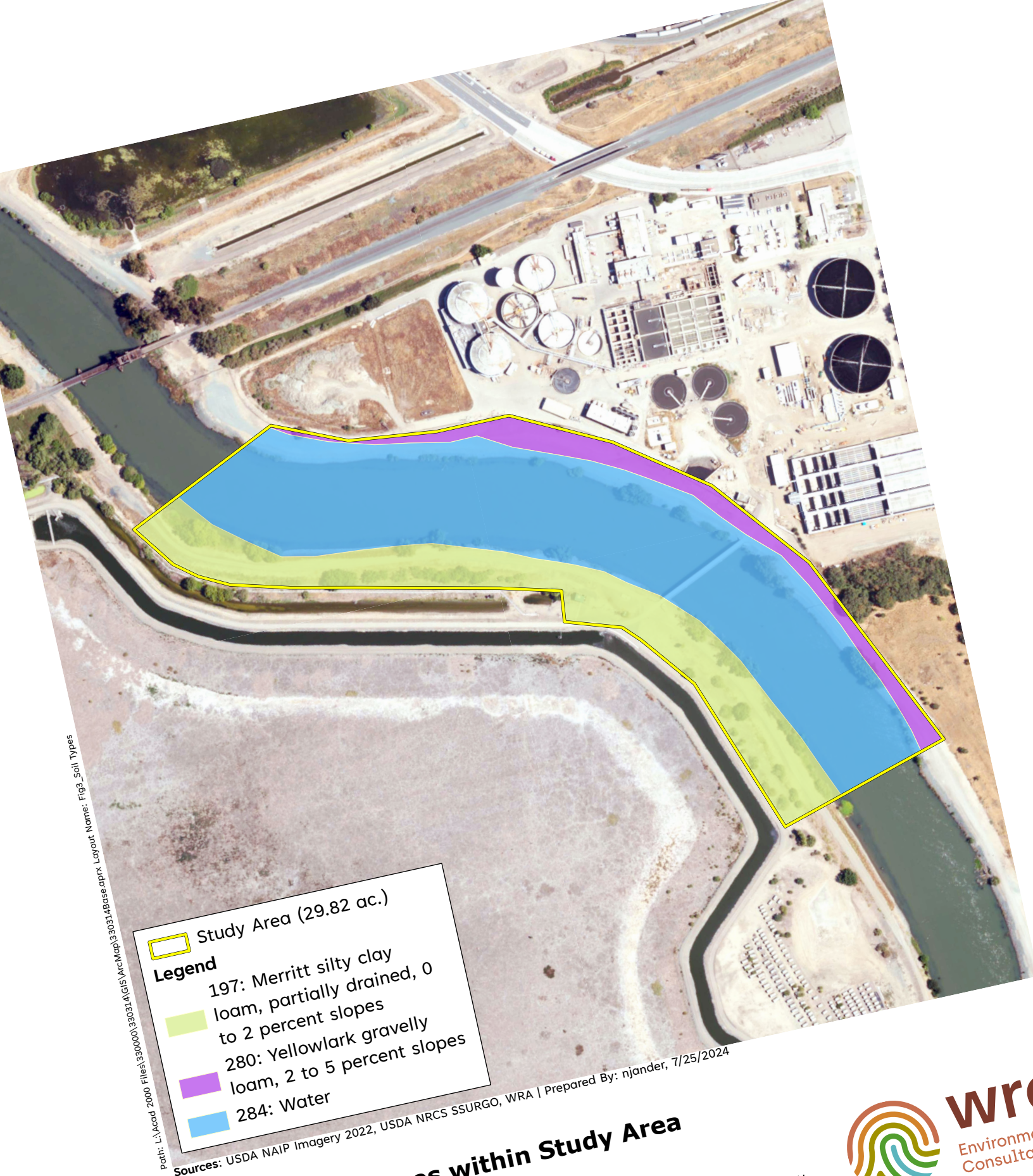
Stockton Wastewater Pipeline
Depth of Cover Remediation Project
San Joaquin County, California

0 200 400 Feet

N

wra Environmental Consultants

Figure 3. Soil Types within Study Area



Path: L:\Acad 2000 Files\33000\33014\GIS\ArcMap\33014Base.aprx Layout Name: Fig3_Soil Types

Sources: USDA NAIP Imagery 2022, USDA NRCS SSURGO, WRA | Prepared By: njander, 7/25/2024

Figure 3. Soil Types within Study Area

Stockton Wastewater Pipeline
Depth of Cover Remediation Project
San Joaquin County, California

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Figure 4. Potential Jurisdictional Features Located within the Study Area

Figure 4: Potentially Jurisdictional Aquatic Features

Stockton Wastewater Pipeline
Depth of Cover Remediation Project
San Joaquin County, California

Study Area (22.90 ac.)

Waters of the U.S and State (Corps, RWQCB, and CDFW)

San Joaquin River to OHWM (12.59 ac. | 2,244 ln. ft.)

CDFW 1602 Jurisdiction

San Joaquin River to TOB (15.11 ac. | 2,244 ln. ft.)

N

0 200 400

Feet

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Environmental Consultants

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Last Saved By: njander, 7/25/2024

APPENDIX B. OHWM DATASHEETS

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Stockton SJ Pipeline Remediation
Date: 5/24/24
Time: 9:45
Project Number: 330314
Town: Stockton
State: CA
Stream: San Joaquin River
Photo begin file#: 946
Photo end file#: 1237
Investigator(s): Rachel Miller

Y ■ / N ☐ Do normal circumstances exist on the site?

Y ■ / N ☐ Is the site significantly disturbed?

Location Details:
2500 Navy Drive, Stockton, CA

Projection: **Datum:** WGS84
Coordinates: 37.935200, -121.329491

Potential anthropogenic influences on the channel system:

San Joaquin River (SJR) bounded by anthropogenic levees along south and north banks. One single-lane vehicle bridge spans SJR.

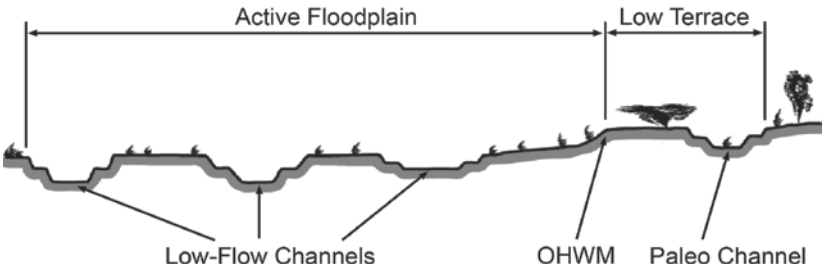
Brief site description:

Study Area includes SJR and adjacent levees adjacent to the City of Stockton Wastewater Recovery Center. Study Area extends extending upstream ~1,200 feet to the San Joaquin River Railroad Bridge and ~1,000 feet downstream.

Checklist of resources (if available):

- ■ Aerial photography
  Dates: 6/5/2024, 4/6/2022
- ■ 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

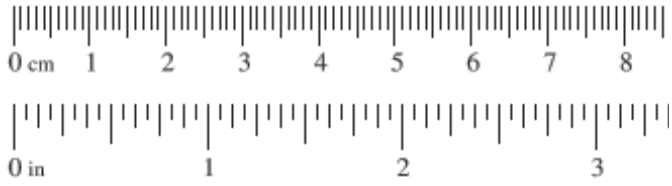


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

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:

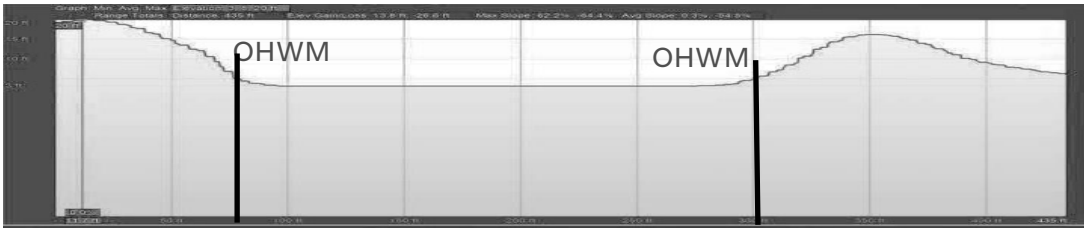
Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
	10.08	256	Boulder	
			Cobble	Gravel
	2.56	64	Pebble	
	0.157	4	Granule	
	0.079	2.00		
	0.039	1.00	Very coarse sand	
	0.020	0.50	Coarse sand	
1/2	0.0098	0.25	Medium sand	Sand
1/4	0.005	0.125	Fine sand	
1/8	0.0025	0.0625	Very fine sand	
1/16	0.0012	0.031	Coarse silt	
1/32	0.00061	0.0156	Medium silt	Silt
1/64	0.00031	0.0078	Fine silt	
1/128	0.00015	0.0039	Very fine silt	
			Clay	Mud



Project ID: 330314 **Cross section ID:** CS-1 **Date:** 5/24/24 **Time:** 945

Cross section drawing:



OHWM

GPS point: 37.935150, -121.329584

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☒ Change in vegetation cover
- ☐ Break in bank slope
- ☒ Other: water-staining on levee riprap
- ☒ Other: surface water present

Comments:

Below the OHWM, the SJR is unvegetated (<1% cover) and surface water is present. At the OHWM, water staining is present on levee riprap. Above OHWM, mature trees are rooted on levee banks.
Digitized with aerial imagery with support from stream gage data.

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: 37.935190, -121.329517

Characteristics of the floodplain unit:

Average sediment texture: boulder (levee riprap present)

Total veg cover: 15 % Tree: 10 % Shrub: 10 % Herb: 5 %

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: Top of levee
- ☐ Other:
- ☐ Other:

Comments:

Highly constrained perennial stream contained within anthropogenic levees on both banks. Active floodplain (with moderate return intervals) and low terrace (with infrequent return intervals) are constrained within the levee banks.

APPENDIX C. STUDY AREA PHOTOGRAPHS



Photo 1. Overview of the Study Area, showing the San Joaquin River and surrounding anthropogenic levees. Facing north; photo taken May 28, 2024.



Photo 2. San Joaquin River within the Study Area, showing water-stained riprap at the OHWM and USGS stream gage San Joaquin River BL Garwood Bridge (Gage 11304810) within the River. Facing west; photo taken May 28, 2024.



Photo 3. Historical aerial photo of the Study Area north levee, with water-stained riprap visible along the OWHM. Google Earth, April 6, 2022.



Photo 4. Patchy riparian vegetation along levee bank above OHWM. Unvegetated open water is present below OHWM. Facing south; photo taken May 28, 2024.

APPENDIX D. PLANT SPECIES OBSERVED WITHIN THE STUDY AREA

Appendix D. Plant Species Observed within the Study Area During the Delineation on May 28, 2024

SCIENTIFIC NAME	COMMON NAME	ORIGIN	FORM	RARITY STATUS[1]	CAL-IPC STATUS[2]	WETLAND STATUS[3]
Acacia sp.	-	-	-	-	-	-
Acer negundo	Boxelder	native	tree	-	-	FACW
Amaranthus sp.	-	-	-	-	-	-
Artemisia douglasiana	California mugwort	native	perennial herb	-	-	FAC
Avena barbata	Slim oat	non-native (invasive)	annual, perennial grass	-	Moderate	-
Bromus diandrus	Ripgut brome	non-native (invasive)	annual grass	-	Moderate	-
Carduus pycnocephalus ssp. pycnocephalus	Italian thistle	non-native (invasive)	annual herb	-	Moderate	-
Carex barbarae	Valley sedge	native	perennial grasslike herb	-	-	FAC
Centaurium sp.	-	-	-	-	-	-
Cephalanthus occidentalis	Common buttonbush	native	shrub	-	-	OBL
Conium maculatum	Poison hemlock	non-native (invasive)	perennial herb	-	Moderate	FACW
Cortaderia selloana	Pampas grass	non-native (invasive)	perennial grass	-	High	FACU
Cyperus eragrostis	Tall cyperus	native	perennial grasslike herb	-	-	FACW
Dittrichia graveolens	Stinkwort	non-native (invasive)	annual herb	-	Moderate	-
Equisetum laevigatum	Smooth scouring rush	native	fern	-	-	FACW
Erigeron sp.	-	-	-	-	-	-
Erodium cicutarium	Red stemmed filaree	non-native (invasive)	annual herb	-	Limited	-
Eschscholzia californica	California poppy	native	annual, perennial herb	-	-	-
Eucalyptus globulus	Blue gum	non-native (invasive)	tree	-	Limited	-
Euphorbia maculata	Spotted spurge	non-native	annual herb	-	-	UPL
Festuca perennis	Italian rye grass	non-native (invasive)	annual, perennial grass	-	Moderate	FAC
Ficus carica	Common fig	non-native (invasive)	tree	-	Moderate	FACU
Fraxinus velutina	Arizona ash	native	tree	-	-	FAC

Appendix D. Plant Species Observed within the Study Area During the Delineation on May 28, 2024

SCIENTIFIC NAME	COMMON NAME	ORIGIN	FORM	RARITY STATUS[1]	CAL-IPC STATUS[2]	WETLAND STATUS[3]
Galium aparine	Cleavers	native	annual herb	-	-	FACU
Hedera helix	English ivy	non-native (invasive)	vine, shrub	-	High	FACU
Helianthus annuus	Hairy leaved sunflower	native	annual herb	-	-	FACU
Hirschfeldia incana	Short-podded mustard	non-native (invasive)	perennial herb	-	Moderate	-
Hordeum marinum ssp. *gussoneanum*	Mediterranean barley	non-native (invasive)	annual grass	-	Moderate	FAC
Iris pseudacorus	Horticultural iris	non-native (invasive)	perennial herb	-	Limited	OBL
Juglans hindsii	Northern California black walnut	native	tree	-	-	FAC
Juglans regia	English walnut	non-native	tree	-	-	-
Juncus balticus ssp. *ater*	Baltic rush	native	perennial grasslike herb	-	-	FACW
Lactuca serriola	Prickly lettuce	non-native	annual herb	-	-	FACU
Lepidium latifolium	Perennial pepperweed	non-native (invasive)	perennial herb	-	High	FAC
Lythrum hyssopifolia	Hyssop loosestrife	non-native (invasive)	annual, perennial herb	-	Limited	OBL
Malva parviflora	Cheeseweed	non-native	annual herb	-	-	-
Marah fabacea	California man-root	native	perennial herb, vine	-	-	-
Nicotiana quadrivalvis	Indian tobacco	native	annual herb	-	-	FACU
Paspalum dilatatum	Dallis grass	non-native	perennial grass	-	-	FAC
Phacelia campanularia	Desert bells	native	annual herb	-	-	-
Phacelia tanacetifolia	Tansy leafed phacelia	native	annual herb	-	-	-
Phoenix sp.	Date palm	non-native	tree	-	-	-
Poa annua	Annual blue grass	non-native	annual grass	-	-	FAC
Polypogon monspeliensis	Annual beard grass	non-native (invasive)	annual grass	-	Limited	FACW
Polypogon viridis	Water beard grass	non-native	perennial grass	-	-	FACW
Pseudognaphalium luteoalbum	Jersey cudweed	non-native	annual herb	-	-	FAC
Rubus armeniacus	Himalayan blackberry	non-native (invasive)	shrub	-	High	FAC
Rumex crispus	Curly dock	non-native (invasive)	perennial herb	-	Limited	FAC

Appendix D. Plant Species Observed within the Study Area During the Delineation on May 28, 2024

SCIENTIFIC NAME	COMMON NAME	ORIGIN	FORM	RARITY STATUS[1]	CAL-IPC STATUS[2]	WETLAND STATUS[3]
Salix laevigata	Red willow	native	tree	-	-	FACW
Salix gooddingii	Goodding's black willow	native	tree	-	-	FACW
Salsola sp.	-	-	-	-	-	-
Sambucus mexicana	Blue elderberry	native	shrub	-	-	FACU
Silybum marianum	Milk thistle	non-native (invasive)	annual, perennial herb	-	Limited	-
Stipa miliacea var. *miliacea*	Smilo grass	non-native (invasive)	perennial grass	-	Limited	-
Typha angustifolia	Narrow leaf cattail	non-native	perennial herb (aquatic)	-	-	OBL
Verbascum thapsus	Woolly mullein	non-native (invasive)	perennial herb	-	Limited	FACU
Verbena litoralis	Shore vervain	non-native (invasive)	biennial, perennial herb	-	-	-
Washingtonia robusta	Mexican fan palm	non-native (invasive)	tree	-	Moderate	FACW

Note: All species identified using the *Jepson eFlora* [Jepson Flora Project (eds.) 2024]; nomenclature follows *Jepson eFlora* [Jepson Flora Project (eds.) 2024] or Rare Plant Inventory (CNPS 2024). Sp.: "species," intended to indicate that the observer was confident in the identity of the genus but uncertain which species.

[1] **California Native Plant Society. 2024. Rare Plant Inventory (online edition, v9.5). Sacramento, California. Online at: http://rareplants.cnps.org/; most recently accessed: July 2024.**

FE: Federal Endangered
FT: Federal Threatened
SE: State Endangered
ST: State Threatened
SR: State Rare
Rank 1A: Plants presumed extinct in California
Rank 1B: Plants rare, threatened, or endangered in California and elsewhere
Rank 2: Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3: Plants about which we need more information – a review list
Rank 4: Plants of limited distribution – a watch list

[2] **California Invasive Plant Council. 2024. California Invasive Plant Inventory Database. California Invasive Plant Council, Berkeley, CA. Online at: http://www.cal-ipc.org/paf/; most recently accessed: July 2024.**

High: Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.
Moderate: Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance; limited-moderate distribution ecologically
Limited: Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically
Assessed: Assessed by Cal-IPC and determined to not be an existing current threat

Appendix D. Plant Species Observed within the Study Area During the Delineation on May 28, 2024

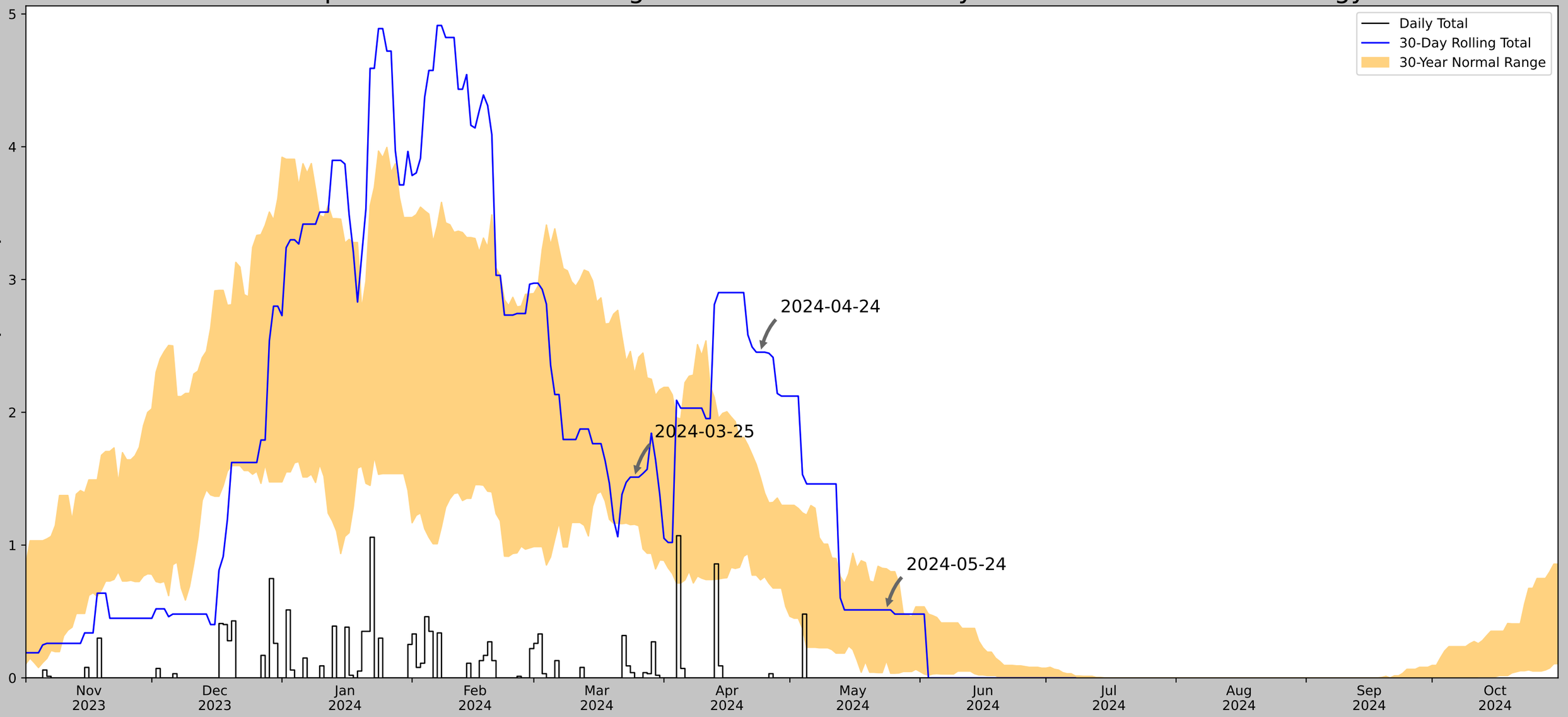
SCIENTIFIC NAME	COMMON NAME	ORIGIN	FORM	RARITY STATUS[1]	CAL-IPC STATUS[2]	WETLAND STATUS[3]

[3] **U.S. Army Corps of Engineers. 2022. National Wetland Plant List, version 3.6. Online at: http://wetland-plants.sec.usace.army.mil/**

OBL:	Almost always found in wetlands
FACW:	Usually found in wetlands
FAC:	Equally found in wetlands and uplands
FACU:	Usually not found in wetlands
UPL:	Almost never found in wetlands
NL:	Not listed, assumed almost never found in wetlands
NI:	No information; not factored during wetland delineation

APPENDIX E. ANTECEDENT PRECIPITATION TOOL ANALYSIS

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	37.935200, -121.329491
Observation Date	2024-05-24
Elevation (ft)	21.035
Drought Index (PDSI)	Incipient drought
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-05-24	0.130315	0.821654	0.511811	Normal	2	3	6
2024-04-24	0.737795	1.504331	2.452756	Wet	3	2	6
2024-03-25	1.156299	2.28937	1.511811	Normal	2	1	2
Result							Normal Conditions - 14

US Army Corps of Engineers

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

ERDC

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
STOCKTON AP	37.89, -121.2264	26.903	6.429	5.868	2.931	11352	90

APPENDIX B. ARCHAEOLOGICAL SURVEY REPORT

THIS DOCUMENT IS AVAILABLE FOR REVIEW AT THE CITY AS IT CONTAINS CONFIDENTIAL INFORMATION REGARDING THE LOCATION OF CULTURAL RESOURCES.