Draft Initial Study / Proposed Mitigated Negative Declaration

Kellogg Resiliency Project

Suisun City, California

Prepared for:

Fairfield-Suisun Sewer District
1010 Chadbourne Road
Fairfield, CA 94534

Attn: Irene O'Sullivan
iosullivan@fairfieldsuisunsewer.ca.gov

Prepared by:

WRA, Inc.
2169 G East Francisco Boulevard
San Rafael, CA 94901

Attn: Matt Osowski
osowski@wra-ca.com

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List of Acronyms and Abbreviations

ADA	Americans with Disabilities Act
APN	Assessor's Parcel Number
BAAQMD	Bay Area Air Quality Management District
BMPs	best management practices
Caltrans	California Department of Transportation
Cal/OSHA	California Division of Occupational Safety and Health
CAP	Climate Action Plan
CARB	California Air Resources Board
CAAQS	California Ambient Air Quality Standards
CDFW	California Department of Fish and Wildlife
CDOC	California Department of Conservation
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
City	City of Suisun City
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
Corps	United States Army Corps of Engineers
CY	cubic yards
dB	decibel
dBA	A-weighted sound level
District	Fairfield-Suisun Sewer District
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control

DWR	Department of Water Resources
DWSP	Downtown Waterfront Specific Plan
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FTA	Federal Transit Authority
GHG	greenhouse gas
GSI	green stormwater infrastructure
IS/MND	Initial Study/Mitigated Negative Declaration
L_{dn}	day-night average noise level
L_{eq}	energy-equivalent noise level
L_{max}	maximum noise level
MBTA	Migratory Bird Treaty Act
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NMFS	National Marine Fisheries Service
NPDES	National Pollution Discharge Elimination System
OPR	Governor's Office of Planning and Research
$PM_{2.5}$	fine particulate matter
PM_{10}	respirable particulate matter
PPV	peak particle velocity
PS	pump station
Rank	California Rare Plant Rank
RCRA	Resource Conservation and Recovery Act
RMS	root mean square velocity
ROG	reactive organic gases
ROW	right-of-way
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCFD	Suisun City Fire Department
SF	square feet
SFBAAB	San Francisco Bay Area Air Basin
SMHM	salt marsh harvest mouse
SSWA	Suisun-Solano Water Authority
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
USFWS	United States Fish and Wildlife Service
VMT	vehicle miles traveled
NPT	northwestern pond turtle
WRA	WRA, Inc.

1.0 INTRODUCTION AND PURPOSE

This Initial Study/Mitigated Negative Declaration (IS/MND) 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 Fairfield-Suisun Sewer District (District). This IS/MND evaluates the potential environmental impacts which might reasonably be anticipated to result from implementation of the Kellogg Resiliency Project (Project).

The District is the Lead Agency under CEQA and has prepared this IS/MND to address the impacts of implementing the proposed Project. The purpose of the Project is to protect the local community and property from flooding, optimize stormwater infrastructure, improve water quality, and increase wildfire resilience.

2.0 PROJECT INFORMATION

2.1 Project Title

Kellogg Resiliency Project

2.2 Lead Agency Name and Address

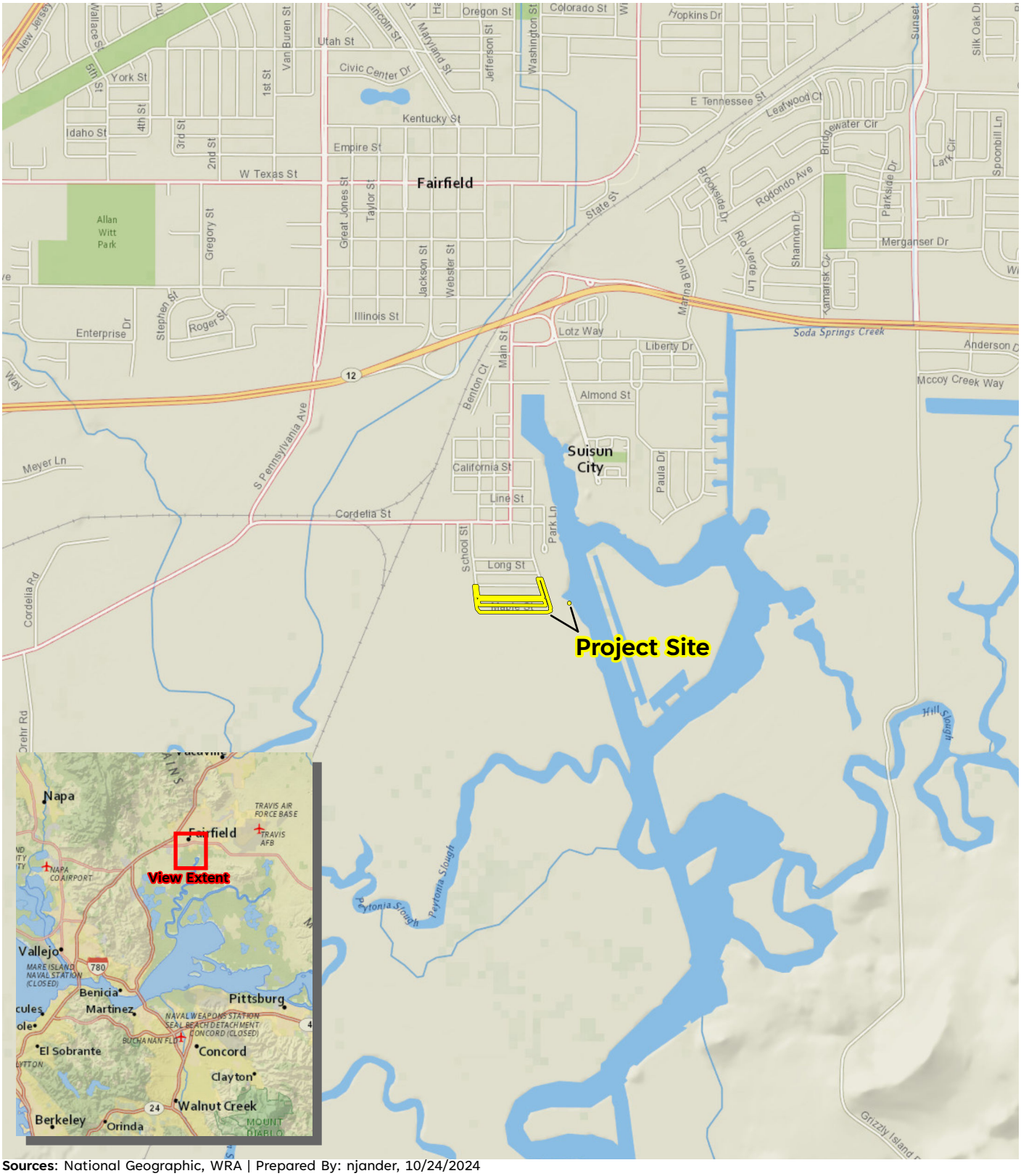
Fairfield-Suisun Sewer District
1010 Chadbourne Road
Fairfield, CA 94534

2.3 Contact Person and Phone Number

Irene O'Sullivan
Engineering Manager
Fairfield-Suisun Sewer District
(707) 428-9139
iosullivan@fairfieldsuisunsewer.ca.gov

2.4 Project Location

The Project is located within the City of Suisun City (City) in a residential area west of Suisun Slough (Figure 1). Specifically, the Project site includes portions of Kellogg Street, Maple Street, and School Street, all of which are within the City's right of way (ROW). The Project site also includes portions of a stormwater detention basin situated primarily on City-owned properties (Accessor's Parcel Numbers [APNs] 032-245-160 and 032-245-200), with limited work in a parcel owned by the Suisun Wildlife Center (APN 032-245-190) (Figure 2). The Project site is surrounded by single family residences to the north, brackish/salt marsh to the west, the Suisun Wildlife Center, ruderal grasslands and brackish/salt marsh to the south, and the Suisun City municipal boat launch and parking lot to the east.



Path: L:\Acad 2000 Files\330000\330538\GIS\ArcMap\330538Base.aprx Layout Name:CEQA_Fig1_Project Site Regional Location

Sources: National Geographic, WRA | Prepared By: njander, 10/24/2024

Figure 1. Project Site Regional Location

Kellogg Resiliency Project
Solano County, California

0 0.25 0.5 Miles

N

wra Environmental Consultants

Path: L:\Acad 2000 Files\330000\330538\GIS\ArcMap\330538Base.aprx Layout Name: CEQA_Fig2_Aerial Photograph of the Project Site

Sources: USDA NAIP Imagery 2022, WRA | Prepared By: njander, 11/19/2024

Figure 2. Aerial Photograph of the Project Site

Kellogg Resiliency Project
Solano County, California

0 50 100 Feet

N

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2.5 Existing General Plan Designation and Zoning District

General Plan Designation: Residential Low Density
The Residential Low Density land use designation provides for single-family, attached and detached residences, secondary dwelling units, public services and facilities, home occupations, and other compatible uses.

Zoning District: Waterfront District Specific Plan (DWSP)
The DWSP zoning district encompasses the zoning districts in the Downtown. The entire Project site, with the exception of the tide gate replacement area (as shown in Figure 2) is within District 6, the Cordelia Gateway (City of Suisun City 2015). The small portion of the Project site where the tide gate will be replaced is within District 7, the Southern Waterfront (City of Suisun City 2015). The land use for the majority of the Project site is single-family residential, and the land use for the tide gate replacement area is boat launch (City of Suisun City 2015).

2.6 Surrounding Land Uses and Setting

The Project site is within the Planning Area of the Downtown Waterfront Specific Plan (DWSP), which identifies eight planning districts within the Planning Area. The Project site is within the Cordelia Gateway Neighborhood, which is identified as Planning District 6. Surrounding land uses include Residential Low Density, Public Facilities, and Waterfront Commercial (City of Suisun City 2016).

3.0 PROJECT DESCRIPTION

3.1 Background Information and Project Purpose

The Project site consists of a stormwater detention basin and existing engineered embankment located near the southern terminus of Kellogg Street, hereinafter referred to as the "Kellogg stormwater detention basin;" the downstream stormwater pump station (PS), hereinafter referred to as the "Kellogg PS;" and portions of the surrounding neighborhood. The constructed stormwater basin collects stormwater from School Street, Maple Street, Long Street, Walnut Street, and Elwood Street, which comprise the neighborhood drainage area.

The Project site is becoming increasingly susceptible to environmental hazards as a result of climate change, including sea level rise, flooding, and wildfires. Sea level rise models show that 24 inches of sea level rise would overtop the existing engineered embankment on the Project site, which could result in flooding of homes and properties situated north of the site (Bay Conservation and Development Commission 2024). In addition, the marsh and surrounding open spaces routinely catch fire, which increases wildfire susceptibility for nearby communities.

Disastrous effects of environmental hazards are already becoming apparent as the Project site endured a wildfire event in June 2020 that burned and destroyed several adjacent homes. Emergency vehicle access on the Project site is currently limited due to constrained access roads and illegal camping in the area. The primary purpose of the Project is to rehabilitate existing stormwater infrastructure to address flood risks for the surrounding community, improve stormwater infrastructure reliability, improve water quality, and increase wildfire resilience. The Project would provide direct benefits to a disadvantaged community[1] and would provide indirect benefits to residents and businesses in Downtown Suisun City by increasing community resilience. To achieve this, the proposed Project would improve water treatment and quality throughout the neighborhood drainage system, enhance resilience by installing green stormwater infrastructure (GSI) improvements and rehabilitate existing stormwater infrastructure, and increase community wildfire resilience by removing and thinning vegetation and constructing an emergency vehicle access road along the north side of the Kellogg stormwater detention basin.

3.2 Detailed Description of the Project

The Project would include the following elements:

- Replacing pavement at the intersection of Maple Street and School Street and reconstructing and repaving the southern terminus of School Street;
- Rehabilitating the existing aging mechanical equipment at Kellogg pump station (PS), a stormwater flood station;
- Installing GSI at various locations throughout the Project site, primarily in the form of subsurface suspended pavement systems with street trees, along with some bioretention facilities;
- Constructing a fire vehicle access road along the southern side of Kellogg basin;
- Removing invasive species within and around the Kellogg basin and revegetating the basin with native, fire-resistant species;

[1] The Project site is within a disadvantaged community, as identified by the Department of Water Resources (DWR) Disadvantaged Communities Mapping Tool (Department of Water Resources 2020).

- Updating pedestrian facilities to be compliance with standards established by the Americans with Disabilities Act (ADA); and
- Replacing damaged fencing along the northern side of the Kellogg basin.

3.2.1 School Street Reconstruction, Pavement Replacement, and GSI

Roadways within the Project site are in need of repaving and/or reconstruction and implementation of GSI to address existing drainage issues. The Project would reconstruct the southern terminus of School Street and replace the pavement along portions of Maple Street within the Project site. In addition, reconstruction of School Street would include replacement of manholes and underground pipelines that have reached the end of their useful life. GSI improvements would be implemented along streets within the Project site to enhance stormwater capture and improve stormwater treatment. These GSI improvements would be in the form of suspended pavement systems centered around street trees. The new GSI installed by the Project would help the City meet regulatory requirements under the National Pollutant Discharge Elimination System (NPDES) Municipal permit, which requires the City to retrofit existing areas with new GSI to maximize the removal of pollutants and to improve the quality of discharged stormwater.

The Project would install approximately 1,320 square feet (SF) of GSI along School Street and 1,670 SF of GSI along Kellogg Street, as shown in the preliminary Project plans in Appendix A.

3.2.2 Kellogg Stormwater Detention Basin Maintenance

The Kellogg stormwater detention basin is an approximately 900-foot-long stormwater detention basin which collects water from the neighborhood drainage area. Stormwater from the neighborhood drainage area flows via underground storm drain pipelines to the west end of the basin. The basin serves to detain stormwater to mitigate flooding in the adjacent community. The stormwater detention basin also captures trash from the drainage area runoff to improve its quality before it is pumped out of the east end of the basin via the Kellogg PS and is discharged to Suisun Slough.

Kellogg stormwater detention basin currently requires periodic maintenance including vegetation and trash removal to prevent water stagnation and trash build-up, maintain water flow and address reduced drainage paths due to trash and vegetation blockages, mitigate potential flood risks, promote water quality treatment, enhance the nature-based system, and mitigate fire risks to maintain community safety. Basin maintenance proposed as part of the Project would include dewatering, removal of invasive species and revegetation of the basin with native species, and removal of trash and debris, which would be maintained on an ongoing basis, similar to the existing operations.

The Project would employ goat grazing as a means to manage vegetation within the basin. Goats would be confined to the basin with a portable electric fence to control the outcome of the grazing. The appropriate number of goats would be deployed, determined by the acreage of the basin and banks, to remove vegetation. The Kellogg basin would be dewatered in sections to facilitate goat grazing in portions of the basin. Temporary coffer dams would be created using sand and gravel bags placed on plastic sheeting or other removable structures or material. Water from inside the cofferdam would be pumped out of the portion of the basin being dewatered and into the flooded portion of the basin. Coffer dams would be completely removed upon completion of the work.

Alternatively, a contractor would be utilized to manage the vegetation using specialized mechanical equipment that will remove specific vegetation in pre-defined areas. Similarly to goat grazing option, temporary coffer dams would be created for dewatering purposes.

3.2.3 Kellogg Pump Station Rehabilitation

Kellogg PS is a below-ground station constructed in 1996 to pump stormwater from Kellogg stormwater detention basin out to the Suisun Slough. The PS is located at the east end of Kellogg basin and pumps stormwater approximately 400 feet to the discharge outlet. The PS mitigates community flood risks by drawing water away from the area and to the slough; however, upgrades are needed as the PS is nearing the end of its useful life.

The Project would rehabilitate the existing PS by replacing the existing pumps, piping, valves, and protective linings and coatings. The Project would also replace the one-way tide gate on the discharge outlet to Suisun Slough. The one-way tide gate is a check valve that is designed to prevent backflow from the Slough to the PS. These upgrades would ensure continued station operability and reliability during the wet weather season.

3.2.4 Fire Vehicle Access Road

The Project would include construction of an approximately 1,000 linear-foot long fire access road at the top of Kellogg basin's southern embankment (above the water line). This access road would be located within a fenced-in area and located behind a locked gate with maintenance, operation, and emergency access available only to the City and the District.

Construction of the access road would include vegetation removal, grading, application of a light road base, a drainage and GSI system, and new fencing to ensure roadway stability for emergency vehicle access.

3.2.5 Fencing and Pedestrian Facilities

The northern embankment of the Kellogg basin has been eroding resulting in gradual City property loss and failing property fences between City property and adjacent private residential properties. The Project would remove, relocate, and replace the fencing between the City and private properties.[2] The new fencing would be at the property line between the City's property parcel and the homeowner's property parcels. Replacement of the fencing is necessary because the embankment slope from the basin side has eroded resulting in a fence line that is significantly leaning over the basin side. The new fencing would be placed upon a stable slope located north of the City's property and closer to the private residences.

Access to replace the fencing would be required via the individual private properties. This work would only be performed if all the private residents grant their approval to the City and the District.

The Project would include updates to pedestrian facilities to bring them up to date with ADA standards where GSI facilities would be installed. Specifically, the Project would demolish the existing ramps along the intersection of Maple Street and School Street, Maple Street and

[2] This portion of Project work would only occur if acceptable to the private residents. Public outreach for the Project is currently ongoing, and the District is planning to coordinate with residents regarding the replacement of fencing.

Kellogg Street, and Elwood Street and Kellogg Street. New ADA-compliant ramps would be constructed and regraded as necessary. New curbs, gutters, and sidewalks would also be constructed where GSI facilities would be installed, as shown in the Project plans in Appendix A.

3.3 Project Construction

3.3.1 Construction Phasing and Schedule

It is estimated that Project construction would begin in April 2025 and take approximately 7.5 months. Construction work is anticipated to be completed in one construction season. Construction work would occur during the dry season, generally from May to September. Following completion of construction, operational maintenance activities would be conducted annually on an ongoing basis.

3.3.2 Staging, Access, and Equipment

Access to the Project site is provided from State Highway 12 at the Suisun City Main Street/Civic Center Boulevard exit 58B by driving southward on Main Street to Cordelia Street, eastward to Kellogg Street, and then southward on Kellogg Street to its terminus.

The following equipment would be required for Project construction:

- Aerial lifts
- Air compressors
- Cement and mortar mixers
- Concrete/industrial saws
- Boom trucks
- Dumpers/tenders
- Excavators
- Forklifts
- Portable generators
- Field truck
- Livestock
- Pavers and paving equipment
- Plate compactors
- Pressure washers
- Pumps
- Rollers
- Rubber tired loaders
- Signal boards
- Skid steer loaders
- Surfacing equipment
- Sweepers/scrubbers
- Tractors/loaders/backhoes
- Trailers for transporting livestock
- Trenchers

- Welders
- Water truck

During construction, equipment would be staged within existing paved areas and/or previously disturbed areas. All refueling and maintenance of construction equipment would occur on paved areas away from sensitive habitats and waterways. Implementation of Bay Area Air Quality Management District (BAAQMD) recommended Best Management Practices for fugitive dust control would be included as a condition of approval for the Project. This condition would be included in the Project design documents.

3.3.3 Site Work

Construction work on the Project site would occur in both developed and undeveloped areas. Developed areas on the Project site consist of paved roadways, sidewalks, the Kellogg PS, and the tide gate replacement area. Undeveloped areas on the Project site consist of the Kellogg stormwater detention basin and surrounding unpaved areas covered with ruderal and annual grassland plants. During construction, Project work would occur in four primary and distinct areas including the bottom of the Kellogg stormwater detention basin, the banks of the basin, the uplands adjacent to the basin, and developed (paved) areas. Activities within each work area would consist of the following:

- **Undeveloped areas:**
  - **Bottom of the stormwater detention basin:** Vegetation removal, dewatering, maintenance of the outfall infrastructure
  - **Banks of the stormwater detention basin:** Vegetation removal, restoration work such as planting new fire-resistant species
  - **Uplands adjacent to the stormwater detention basin:** Vegetation removal, grading, application of light road base, installation of fencing
- **Developed areas:** Demolition of existing pavement; repaving; replacement of manholes and underground pipelines; installation of GSI; rehabilitation of Kellogg PS including replacing existing pumps, piping, valves, and protective linings and coatings.

The approximate cut volume would be 1,000 cubic yards (CY) and the approximate fill volume would be 950 CY, totaling a net cut volume of 50 CY.

3.4 Project-Related Approvals, Agreements, and Permits

The information contained in this IS/MND will be used by the District (the CEQA Lead Agency) as it considers whether or not to approve the proposed Project. If the Project is approved, the IS/MND would be used by the District and responsible and trustee agencies in conjunction with various approvals and permits. These actions may include, but may not be limited to, the following approvals by the agencies indicated:

3.4.1 City of Suisun City

- Encroachment Permit
- Grading Permit
- Condition of Approval- BAAQMD's Basic Best Management Practices

3.4.2 Regional Water Quality Control Board

- Notice of Applicability under Statewide General Waste Discharge Requirements for Dredge or Fill Discharges to Waters Deemed by the US Army Corps of Engineers to be Outside of Federal Jurisdiction, (WDR) Order number 2004-0004-DWQ
- Construction Stormwater General Permit

3.4.3 State Water Resources Control Board

- Construction Stormwater General Permit

3.4.4 California Department of Fish and Wildlife

- Lake and Streambed Alteration Agreement

4.0 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

4.1 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.

Signature

12/18/2024
Date

Name and Title: Jordan Damerel, General Manager

4.2 Initial Study Checklist

This section describes the existing environmental conditions in and near the Project site 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 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.

4.2.1 Aesthetics

Would the project:		*Potentially Significant Impact*	*Less than Significant 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 situated on the outskirts of Suisun City at the southern end of a residential neighborhood. The site consists of the Kellogg stormwater detention basin, the Kellogg PS, portions of the City's ROW, and the Kellogg PS outfall into Suisun Slough.

DISCUSSION OF IMPACTS

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

Less-than-Significant Impact

The Project site is bordered by residences to the north and the Suisun Marsh and Suisun Wildlife Center to the south. The Project site includes the Kellogg stormwater detention basin, Kellogg PS, and paved roadways within a residential area. The Kellogg stormwater detention basin is a constructed, trapezoidal stormwater detention basin. The bottom of the basin is predominantly vegetated with plants typical of stormwater features including cattails and bulrush. The banks of the basin are surrounded by imported soil and ruderal, annual grassland plants, and non-native landscape trees.

The Project site is visible from residences to the north of the Kellogg stormwater detention basin, and from the Suisun Wildlife Center which borders the site to the south. The site is also visible from the Peytonia Slough Ecological Reserve which includes a portion of the Suisun Marsh approximately 0.14 miles south of the site.

The City's General Plan Open Space and Conservation Element identifies the Suisun Marsh as a natural scenic recreational resource. The portion of the Project site containing the Kellogg stormwater detention basin and PS is shown on Exhibit 7-3 of the Open Space and Conservation Element as a Conservation, Higher Priority area (City of Suisun City 2015). As such, activities on the Project site which could alter the existing views of the Suisun Marsh could result in a significant effect on a scenic vista. However, the Project would not change the existing land use of the Project site or create any new structures which would permanently alter existing views of the site or the Suisun Marsh. During construction, the use of equipment on the Project site may temporarily obstruct views of the Suisun Marsh; however, this impact would only be temporary while equipment is being used. Construction equipment would be stored in designated staging areas and would not be left overnight or on weekends in areas which would obstruct views of the Suisun Marsh. Once construction has finished, the views of the Suisun Marsh from residences to the north of the Project site would remain similar to existing conditions. The Project would include removal of some of the dense vegetation within the Kellogg stormwater detention basin, which would allow for better views of the Suisun Marsh once construction is complete.

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?

No Impact

There are no state scenic highways within the vicinity of the Project site. The nearest officially designated state scenic highway is California State Route 160, located approximately 20 miles southeast of the Project site (California Department of Transportation [Caltrans] 2018). The nearest eligible state scenic highway is California State Route 29, located approximately 12 miles west of the Project site (Caltrans 2018). Therefore, the Project would not substantially damage scenic resources within a state scenic highway. No impact would occur.

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 on the border between an urbanized and non-urbanized area. The Project site and areas to the north are within the City's Residential Low Density zoning district, and the Suisun Marsh borders the Project site to the south. The Project would not create any new permanent structures and would not change the existing use of the site. During construction, the presence of construction equipment and materials on the Project site would temporarily degrade the existing views of the site; however, these impacts would be temporary and would not be substantial. The Project would remove some vegetation on the Project site, which would alter the site appearance. Removal of vegetation would be limited to mowing and trimming of grasses and shrubs on the site. The Project would not remove scenic vegetation such as large mature trees or unique or rare plant species. Therefore, the Project would not 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?

Less-than-Significant Impact

The Project would not create any new permanent sources of lighting on the Project site. During construction, the presence of construction equipment and materials on the Project site may cause temporary sources of glare which may be observed by people within the immediate site vicinity. Once construction has finished, all equipment and materials would be removed, and no new sources of glare would be present. Project construction activities would occur during normal daytime construction hours; no nighttime lighting would be required. Therefore, the Project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. The impact would be less than significant.

4.2.2 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 zoned for Residential Low Density and is within the DWSP Planning Area. The Project site is mapped as "Urban and Built-Up Land" and "Other Land" by the California Department of Conservation (CDOC) California Important Farmland Finder online mapping tool (CDOC 2022). Urban and Built-Up Land is occupied by structures and includes residential, industrial, commercial, institutional facilities, airports, golf courses, sanitary landfills, sewage treatment, and water control structures. Other Land includes land not included in any other mapping category, including low density rural developments, brush, timber, wetland, and riparian areas not suitable for livestock grazing, small water bodies, and other such land cover.

DISCUSSION OF IMPACTS

a, b) 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?

No Impact

The Project site consists of the Kellogg stormwater detention basin, the Kellogg PS and its outfall, and portions of the City's ROW. No portion of the Project site is mapped as Grazing Land, Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (CDOC 2022). Therefore, the Project would not impact any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The Project site is zoned for Residential Low Density and is not under a Willaimson Act contract. No impact would occur.

c, d) 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?

No Impact

The Project site is mapped as Urban and Built Up land and Other Land by the CDOC. The Project site is zoned for residential use and does not include any forestland or timberland. Therefore, the Project would not conflict with an existing zoning for forestland or timberland. The Project would not convert any forest land to non-forest use. No impact would occur.

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?

No Impact

The Project would not change the existing land use of the Project site. Additionally, there is no Farmland or forest land on or within the vicinity of the Project site. Therefore, the Project would not cause any changes in the existing environment which would result in the conversion of Farmland to non-agricultural use or forest land to non-forest use. No impact would occur.

4.2.3 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 City of Suisun City is located within the San Francisco Bay Area Air Basin (SFBAAB), which has natural characteristics that limit the ability of natural processes to either dilute or transport air pollutants. The major determinants of air pollution transport and dilution are climatic and topographic factors such as wind, atmospheric stability, terrain that influences air movement, and sunshine. Wind and terrain can combine to transport pollutants away from upwind areas, while solar energy can chemically transform pollutants in the air to create secondary photochemical pollutants such as ozone. The following discussion provides an overview of the environmental setting with regard to air quality in the SFBAAB.

Ambient Air Quality and Climate

The San Francisco Bay Area (Bay Area) has a Mediterranean climate characterized by wet winters and dry summers. During the summer, a high-pressure cell centered over the northeastern Pacific Ocean results in stable meteorological conditions and a steady northwesterly wind flow that generally keeps storms from affecting the California coast. During the winter, the Pacific high-pressure cell weakens, resulting in increased precipitation and the occurrence of storms. The highest air pollutant concentrations in the Bay Area generally occur during inversions, when a surface layer of cooler air becomes trapped beneath a layer of warmer air. An inversion reduces the amount of vertical mixing and dilution of air pollutants in the cooler air near the surface.

The Carquinez Strait subregion extends from Rodeo in the southwest and Vallejo in the northwest to Fairfield on the northeast and Brentwood on the southeast. The City of Suisun City is located at the northeastern part of the Carquinez Strait subregion. In the subregion, the prevailing wind directions are generally from the west. Mean maximum temperatures in the summer can reach about 90°F, and mean minimum temperatures in the winter are in the high 30s °F.

Air Pollutants of Concern

The California Air Resources Board (CARB) and United States Environmental Protection Agency (EPA) focus on the following criteria air pollutants as regional indicators of ambient air quality:

- Ozone
- Coarse particulate matter (PM_{10})
- Fine particulate matter ($PM_{2.5}$)
- Nitrogen dioxide
- Carbon monoxide
- Sulfur dioxide
- Lad

Because these are the most prevalent air pollutants known to be harmful to human health based on extensive criteria documents, they are referred to as “criteria air pollutants.” In the SFBAAB, the primary criteria air pollutants of concern are ground-level ozone formed through reactions of oxides of nitrogen (NO_x) and reactive organic gases (ROG), PM_{10}, and $PM_{2.5}$.

Localized air pollutants that generally dissipate with distance from the emission source can pose a health risk to nearby populations. Toxic air contaminants (TACs), such as diesel particulate matter (DPM), are considered localized pollutants. $PM_{2.5}$ is also considered a localized air pollutant, in addition to being considered a regional air pollutant. Unlike criteria air pollutants, which generally affect regional air quality, TAC emissions are evaluated based on estimations of local concentrations and risk assessments.

Sensitive Receptors

Sensitive receptors are areas where individuals are more susceptible to the adverse effects of poor air quality. Sensitive receptors include, but are not limited to, hospitals, schools, daycare facilities, elderly housing, and convalescent facilities. Residential areas are also considered sensitive receptors because people are often at home for extended periods, thereby increasing the duration of exposure to potential air contaminants. The sensitive receptors in the vicinity of the Project site include residences along Maple Street, School Street, and Kellogg Street as close as 30 feet from areas of active Project work.

The Bay Area Air Quality Management District (BAAQMD) also recommends evaluating health risks to offsite worker receptors, which are not considered sensitive receptors. Offsite worker receptors are located at the Suisun Wildlife Center about 75 feet to the south and at 1240 Kellogg Street about 45 to the east of the Project site boundary. Although the commercial building at 1240 Kellogg Street is currently unoccupied, it is conservatively included in this analysis.

REGULATORY FRAMEWORK

Federal and State Regulations

The federal EPA is responsible for implementing the programs established under the Federal Clean Air Act, such as establishing and reviewing the National Ambient Air Quality Standards (NAAQS) and judging the adequacy of State Implementation Plans to attain the NAAQS. A State Implementation Plan must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. If a state fails to enforce its implementation of approved regulations, or if the EPA determines that a State Implementation Plan is inadequate, the EPA is required to prepare and enforce a Federal Implementation Plan to promulgate comprehensive control measures for a given State Implementation Plan.

CARB is responsible for establishing and reviewing the California Ambient Air Quality Standards (CAAQS), developing and managing the California State Implementation Plans, identifying TACs, and overseeing the activities of regional air quality management districts. In California, mobile emissions sources (e.g., construction equipment, trucks, and automobiles) are regulated by CARB and stationary emissions sources (e.g., industrial facilities) are regulated by the regional air quality management districts. In accordance with the Federal Clean Air Act and California Clean Air Act, areas in California are classified as either in attainment, maintenance (i.e., former nonattainment), or nonattainment of the NAAQS and CAAQS for each criteria air pollutant. To assess the regional attainment status, the BAAQMD collects ambient air quality data from over 30 monitoring sites within the SFBAAB. Based on current monitoring data, the SFBAAB is designated as a nonattainment area for ozone, PM_{10} (CAAQS only), and $PM_{2.5}$, and is designated an attainment or unclassified area for all other pollutants (BAAQMD 2017a).

Regional Regulatory Framework

The Project is located in the SFBAAB, which is under the jurisdiction of the BAAQMD. The BAAQMD has adopted thresholds of significance to assist lead agencies in the evaluation and mitigation of air quality impacts under CEQA (BAAQMD 2022). The BAAQMD's thresholds established levels at which emissions of ozone precursors (i.e., ROGs and NO_x), PM_{10}, $PM_{2.5}$, carbon monoxide, TACs, and odors could cause significant air quality impacts. The BAAQMD's thresholds of significance that are used in this analysis are summarized in Table 1.

Air districts such as BAAQMD use regional air dispersion models to evaluate regional criteria air pollutants. However, these dispersion models have limited sensitivity to the relatively small (or negligible) changes in criteria air pollutant concentrations associated with an individual project. Therefore, providing reliable estimates of specific health risks associated with regional air pollutant emissions from an individual project is not feasible and would result in speculative results (South Coast Air Quality Management District 2018, San Joaquin Valley Unified Air Pollution Control District 2018).

Table 1. BAAQMD Project-Level Thresholds of Significance

IMPACT ANALYSIS	POLLUTANT	THRESHOLD
Regional Air Quality (Construction)	ROG	54 pounds/day (average daily emission)
	NO_x	54 pounds/day (average daily emission)
	Exhaust PM_{10}	82 pounds/day (average daily emission)
	Exhaust $PM_{2.5}$	54 pounds/day (average daily emission)
	Fugitive dust (PM_{10} and $PM_{2.5}$)	Best management practices
Local Community Risks and Hazards	$PM_{2.5}$ (Project)	0.3 µg/m^3 (annual average)
	TACs (Project)	Cancer risk increase > 10.0 in one million Chronic hazard index > 1.0
	$PM_{2.5}$ (cumulative)	0.8 µg/m^3 (annual average)
	TACs (cumulative)	Cancer risk > 100 in one million Chronic hazard index > 10.0

Notes: ROG = reactive organic gases; NO_x = oxides of nitrogen; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; TACs = toxic air contaminants; µg/m^3 = micrograms per cubic meter
Source: BAAQMD, 2022

DISCUSSION OF IMPACTS

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

Less-than-Significant Impact

The BAAQMD's 2017 Clean Air Plan is the applicable air quality plan for projects located in the SFBAAB (BAAQMD 2017b). Consistency may be determined by evaluating whether the Project supports the primary goals of the 2017 Clean Air Plan, including applicable control measures contained within the plan, and would not conflict with or obstruct implementation of any of the control measures.

The primary goals of the 2017 Clean Air Plan are the attainment of ambient air quality standards and reduction of population exposure to air pollutants for the protection of public health in the Bay Area. Because the Project would not result in any significant and unavoidable air quality impacts related to emissions, ambient concentrations, or public exposures (see discussions below), the Project would support the primary goals of the 2017 Clean Air Plan.

The control measures from the 2017 Clean Air Plan, which aim to reduce air pollution and greenhouse gases (GHGs) from stationary, area, and mobile sources, are organized into nine categories. As described in Table 2, the Project would be consistent with the applicable control measures from the 2017 Clean Air Plan. Therefore, the Project would not conflict with or obstruct implementation of the applicable air quality plan, and the impact would be less than significant.

Table 2. Project Consistency with BAAQMD 2017 Clean Air Plan

CONTROL MEASURES	PROJECT CONSISTENCY
Stationary Sources	**Not applicable**. The stationary source measures, which are designed to reduce emissions from stationary sources, are incorporated into rules adopted by the BAAQMD and then enforced by the BAAQMD's Permit and Inspection programs. Because the Project would not include new stationary sources, the stationary source control measures are not applicable to the Project.
Transportation	**Not applicable**. The transportation control measures are designed to reduce vehicle trips, use, miles traveled, idling, or traffic congestion for the purpose of reducing vehicle emissions. The Project operation would not generate any additional vehicle trips compared to the existing conditions. Therefore, the transportation control measures of the 2017 Clean Air Plan are not applicable to the Project.
Energy	**Not applicable**. The energy control measures are designed to reduce emissions of criteria air pollutants, TACs, and GHGs by decreasing the amount of electricity consumed in the Bay Area, as well as decreasing the carbon intensity of the electricity used by switching to less GHG-intensive fuel sources for electricity generation. Since these measures apply to electrical utility providers and local government agencies (and not individual projects), the energy control measures of the 2017 Clean Air Plan are not applicable to the Project.
Buildings	**Not applicable**. The BAAQMD has authority to regulate emissions from certain sources in buildings such as boilers and water heaters, but has limited authority to regulate buildings themselves. Therefore, the building control measures focus on working with local governments that have authority over local building codes to facilitate adoption of best GHG control practices and policies. Since the Project does not include any building construction, the building control measures of the 2017 Clean Air Plan are not applicable to the Project.
Agriculture	**Not applicable**. The agriculture control measures are designed primarily to reduce emissions of methane. Since the Project does not include any agricultural activities, the agriculture control measures of the 2017 Clean Air Plan are not applicable to the Project.
Natural and Working Lands	**Not applicable**. The control measures for the natural and working lands sector focus on increasing carbon sequestration on rangelands and wetlands, as well as encouraging local governments to adopt ordinances that promote urban tree plantings. Since the Project does not include the disturbance of any rangelands or wetlands, the natural and working lands control measures of the 2017 Clean Air Plan are not applicable to the Project.
Waste Management	**Consistent**. The waste management measures focus on reducing or capturing methane emissions from landfills and composting facilities, diverting organic materials away from landfills, and increasing waste diversion rates through efforts to reduce, reuse, and recycle. The Project would comply with local requirements for waste management. Therefore, the Project would be consistent with the waste management control measures of the 2017 Clean Air Plan.

CONTROL MEASURES	PROJECT CONSISTENCY
Water	**Consistent**. The water control measures to reduce emissions from the water sector will reduce emissions of criteria pollutants, TACs, and GHGs by encouraging water conservation, limiting GHG emissions from publicly owned treatment works (POTWs), and promoting the use of biogas recovery systems. The Project is a multi-benefit, resiliency, water quality, green stormwater infrastructure (GSI), and stormwater Project. Because the Project would improve water quality and improve community climate resilience, the Project would be consistent with the water control measures of the 2017 Clean Air Plan.
Super GHGs	**Not applicable**. The super-GHG control measures are designed to facilitate the adoption of best GHG control practices and policies through the BAAQMD and local government agencies. Since these measures do not apply to individual projects, the super-GHG control measures of the 2017 Clean Air Plan are not applicable to the Project.

Source: BAAQMD, 2017b

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

Criteria Air Pollutants from Construction

Project construction activities would generate criteria air pollutant emissions that could potentially affect regional air quality. During construction, the primary pollutant emissions of concern would be ROG, NO_x, PM_{10}, and $PM_{2.5}$ from the exhaust of off-road construction equipment and on-road construction vehicles related to worker vehicles, vendor trucks, and haul trucks. In addition, fugitive dust emissions of PM_{10} and $PM_{2.5}$ would be generated by soil disturbance and demolition activities, and fugitive ROG emissions would result from paving. The Project's emissions of fugitive dust during construction are analyzed separately, further below.

The BAAQMD recommends using the most current version of the California Emissions Estimator Model (CalEEMod, Version 2022.1) to estimate construction and operational emissions of pollutants from a project. CalEEMod uses widely accepted models for emission estimates combined with appropriate default data for a variety of land-use projects that can be used if site-specific information is not available. A linear land use type was selected to model the Project. The primary input data used to estimate emissions associated with construction of the Project were provided by the applicant and contain information on construction duration, construction-related vehicle trips, trip lengths, and off-road construction equipment inventory and usage. A summary of the assumptions for estimating construction emissions is provided in Table 3. Construction information provided by the Project applicant and a copy of the CalEEMod report for the Project, which summarizes the input parameters, assumptions, and findings, is included as Appendix B.

To analyze daily emission rates, the total emissions estimated during construction were averaged over the total working days (109 days) and compared to the BAAQMD's thresholds of significance. The Project's estimated emissions for ROG, NO_x, and exhaust PM_{10} and $PM_{2.5}$ are shown in Table 4.

Anticipated emissions during construction were below the thresholds of significance and therefore, would not result in a cumulatively considerable net increase in criteria air pollutants for which the region is in nonattainment.

Table 3. Construction Assumptions for CalEEMod

CALEEMOD INPUT CATEGORY	CONSTRUCTION ASSUMPTIONS AND CHANGES TO DEFAULT DATA
Construction Phase	The construction duration was provided by the Project applicant and is included in Appendix B. Construction of the Project is anticipated to begin in May 2025 and is expected to occur over a period of approximately five months.
Construction Equipment	The on-site construction equipment list was modified according to site-specific construction information provided by the Project applicant (Appendix B).
Dust from Material Movement	To estimate fugitive dust emissions during construction, the soil export volume was estimated based on the soil haul.
Demolition	To estimate fugitive dust emissions during construction, the amount of demolition debris was back calculated based on the demolition haul trips provided by the applicant and the assumption of 20 tons of material per truck load.
Construction Vehicles	Construction vehicle trips, including worker commute trips, vendor trips, and haul trips (including concrete truck trips), were provided by the applicant.
Paved Area	To estimate off gassing from asphalt paving, it was conservatively assumed the total new pavement area would be 0.96 acres, based on the total area of Maple Street and the south portion of School Street measured using Google Earth.

Notes: Default CalEEMod data was used for all other parameters that are not described.
Source: Appendix B

Table 4. Estimated Construction Emissions (Pounds Per Day)

EMISSIONS SCENARIO	ROG	NO_X	EXHAUST PM_{10}	EXHAUST $PM_{2.5}$
Construction Emissions	30.6	8.8	0.31	0.28
BAAQMD CEQA Thresholds of Significance	54	54	82	54
Threshold Exceedance?	**No**	**No**	**No**	**No**

Source: Appendix B

The generation of fugitive dust PM_{10} and $PM_{2.5}$ emissions from soil disturbance activities could result in a cumulatively considerable net increase in regional PM_{10} and $PM_{2.5}$ concentrations. The BAAQMD does not have a quantitative threshold of significance for fugitive dust PM_{10} and $PM_{2.5}$ emissions; however, the BAAQMD considers implementation of dust control measures during construction sufficient to reduce air quality impacts from fugitive dust to a less-than-significant level. The BAAQMD recommends that all construction projects implement the following Basic BMPs from the BAAQMD's CEQA Guidelines:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

As described in Section 3.0, Project Description, the Project would implement the BAAQMD's Basic Best Management Practices to ensure that emissions of PM_{10} and $PM_{2.5}$ from dust generated during Project construction activities would not result in a cumulatively considerable net increase in criteria air pollutants for which the region is in nonattainment. These BMPs would be included as a condition of approval for the Project and would be stated in the construction contracts. With implementation of these BMPs during construction, the BAAQMD considers the generation of fugitive dust during construction to be a less-than-significant impact.

Criteria Air Pollutants from Operation

As a resiliency, water quality, green stormwater infrastructure, and stormwater project, operation of the Project would not introduce new sources of criteria air pollutants emissions or generate vehicle trips. Therefore, Project operation would not result in a cumulatively considerable net increase in criteria air pollutants concentrations for which the region is in nonattainment.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less-than-Significant Impact

Exposure to Diesel Particulate Matter Emissions during Project Construction

Project construction would generate DPM and PM2.5 emissions from the exhaust of off-road diesel construction equipment and fugitive $PM_{2.5}$ emissions from construction activities. In accordance with guidance from the BAAQMD and the Office of Environmental Health Hazard Assessment (OEHHA), a health risk assessment was conducted to estimate the incremental increase in cancer risk and chronic hazard index to sensitive receptors from DPM emissions during construction. The acute hazard index for DPM was not calculated because an acute reference exposure level has not been approved by OEHHA and CARB, and the BAAQMD does not recommend analysis of acute non-cancer health hazards from construction activity.

The annual average concentrations of DPM and exhaust $PM_{2.5}$ concentrations during construction were estimated within 1,000 feet of the Project using the EPA's AERMOD air dispersion model. For this analysis, emissions of exhaust PM_{10} were used as a surrogate for DPM, which is a conservative assumption because more than 90 percent of DPM is less than one micron in diameter. The input parameters and assumptions used for estimating the dispersion of DPM and PM10 from off-road diesel construction equipment are included in Appendix C.

Daily emissions from construction were assumed to primarily occur between 7 a.m. and 6 p.m. Monday through Friday, and between 9 a.m. and 5 p.m. on Saturdays. The exhaust and fugitive dust from off-road equipment were represented in the AERMOD model as an area source encompassing the Project site. Exhaust and fugitive dust emission rates for off-road equipment were based on the actual hours of work and averaged over the entire duration of construction.

A uniform grid of receptors spaced 20 meters apart was created for ground level receptors at heights of 1.5 meters to develop isopleths (i.e., concentration contours) around the Project site that illustrate the air dispersion pattern from the emissions sources. In addition, discrete receptors were created for ground level receptors at heights of 1.5 meters to calculate concentrations at the maximally exposed individual resident (MEIR), and maximally exposed individual worker (MEIW). The AERMOD model input parameters included one year of BAAQMD meteorological data from the Travis Field Air Force Base Airport Automated Surface Observing Systems Meteorological Site (KSUU, Site ID 2743) located approximately four miles to the northeast of the Project site.

The air dispersion model was used to estimate annual average concentrations of PM_{10} from Project construction emissions. Based on the results of the air dispersion model (Appendix C), potential off-site health risks were evaluated for the MEIR on the ground floor of a single-family residence located about 140 feet west of the Kellogg Street and Maple Street intersection, and

the MEIW located at the Suisun Wildlife Center about 75 feet to the south to the Project site boundary (Figure 3)

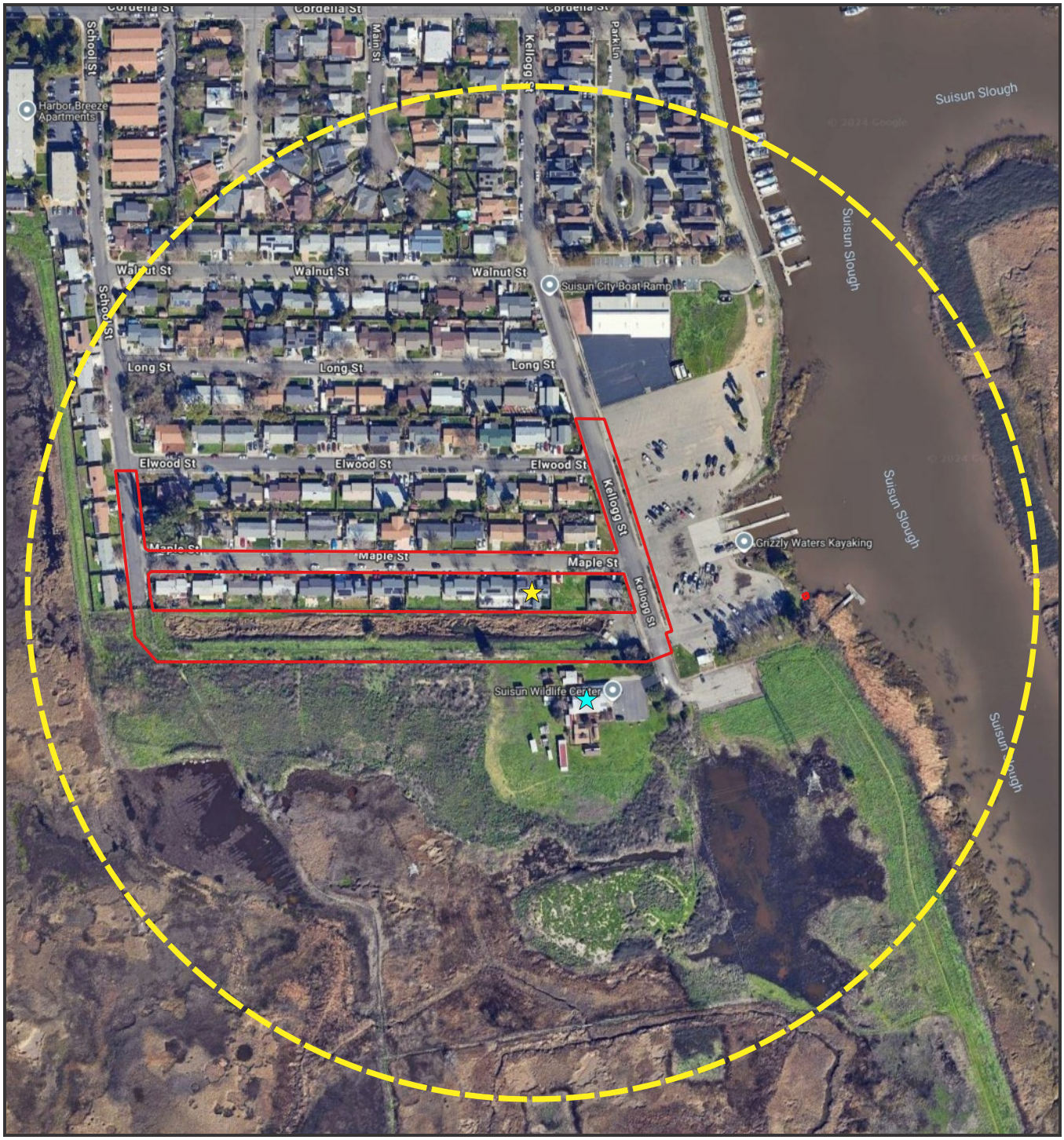
For the MEIR, the incremental increase in cancer risk from on-site DPM emissions during construction was assessed for an infant exposed to DPM starting from birth. This exposure scenario represents the most sensitive individual who could be exposed to adverse air quality conditions in the vicinity of the Project site. For the MEIW, it was conservatively assumed that an adult worker would work in the same location during the entire construction duration. It was conservatively assumed that the MEIR and the MEIW would be exposed to annual average DPM concentrations over the entire estimated duration of construction, which is about five months. The input parameters and results of the health risk assessment are included in Appendix C.

Estimates of the health risks at the MEIR and MEIW from exposure to DPM and $PM_{2.5}$ concentrations during Project construction are summarized and compared to the BAAQMD's thresholds of significance in Table 5. The estimated excess cancer risk and chronic hazard index for DPM and annual average $PM_{2.5}$ concentration from construction emissions were found to be below the thresholds of significance. Therefore, construction of the Project would not expose existing sensitive receptors to substantial concentrations of TACs and $PM_{2.5}$ from Project construction. As discussed above, it should also be noted that these health risks are based on conservative estimates of air pollutant emissions.

Table 5. Health Risks during Project Construction

EMISSIONS SCENARIO	RECEPTOR	DIESEL PARTICULATE MATTER		$PM_{2.5}$ ANNUAL AVERAGE CONCENTRATION ($\mu G/M^3$)
		CANCER RISK (PER MILLION)	CHRONIC HAZARD INDEX	
Construction Exhaust	MEIR	4.6	0.02	0.12
	MEIW	0.1	0.01	0.04
Thresholds of Significance		10	1.0	0.3
Exceed Threshold?		No	No	No

Notes: $\mu g/m^3$ = micrograms per cubic meter
Source: Appendix C.



Legend

- MEIR
- MEIW
- Project Boundary
- 1,000-Feet Buffer around MEIR

0 380 Feet

N

BASELINE ENVIRONMENTAL CONSULTING

Figure 3
Sensitive Receptor Locations

Exposure to Carbon Monoxide Emissions during Project Operation

The source of local carbon monoxide concentrations is often associated with heavy traffic congestion at nearby intersections. Since the Project would not result in a substantial net increase in vehicle trips, the Project would not result in a net increase in the potential exposure of existing sensitive receptors to carbon monoxide concentrations from Project-generated traffic.

Cumulative Toxic Air Contaminant Emissions

In addition to a Project's individual TAC emissions during construction, the potential cumulative health risks to sensitive receptors from existing TACs were evaluated. As shown in Table 5, the MEIR is associated with the highest cancer risk from implementation of the Project (4.6 per million) among the two types of receptors analyzed. Cumulative health risks were estimated at the MEIR for the Project to represent the worst-case-exposure scenario for sensitive receptors in the Project vicinity.

Based on the BAAQMD's permitted stationary source risk map, there are no existing stationary sources within 1,000 feet of the MEIR (BAAQMD 2024a). At the time of preparation of this analysis, there are no reasonably foreseeable future projects within 1,000 feet of the Project that would introduce a new source of TAC and/or $PM_{2.5}$ emissions.

Preliminary health risk screening values at the MEIR from exposure to mobile sources of TACs were estimated based on the BAAQMD's Mobile Source Screening Map, which provides health risk estimates reflective of 2022 for residents living near major roadways, and reflective of 2024 for residents living near rail lines, and rail yards (BAAQMD 2024b).

Estimates of the cumulative health risks at the MEIR for the Project are summarized and compared to the cumulative thresholds of significance in Table 6. As shown in Table 6, the cumulative cancer risk, cumulative chronic hazard index, and annual average $PM_{2.5}$ at the MEIR location are below the BAAQMD's cumulative thresholds. Therefore, the exposure of existing sensitive receptors to substantial concentrations of TACs and $PM_{2.5}$ from implementation of the Project would not be cumulatively considerable.

Table 6. Cumulative Health Risks

SOURCE	SOURCE TYPE	REF	MEIR		
			CANCER RISK (10^{-6})	CHRONIC HI	$PM_{2.5}$ ($\mu G/M^3$)
PROJECT					
Off-Road Construction Equipment	Diesel Exhaust		4.6	0.02	0.12
EXISTING MOBILE SOURCES					
Roadway	Mobile	1	1.3	0.01	0.08
Railway	Railway	1	5.6	<0.01	0.01
Cumulative Health Risks			11.5	<0.1	0.2
Thresholds of Significance			100	10.0	0.8
Exceed Thresholds?			No	No	No

Notes: $\mu g/m^3$=micrograms per cubic meter; HI=hazard index; Ref=reference
Health risk screening values derived using the following BAAQMD tools and methodologies:
1) BAAQMD Beta version Mobile Source Screening Map, 2024 (BAAQMD 2024b)

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

Less-than-Significant Impact

As a resiliency, water quality, green stormwater infrastructure, and stormwater project, the Project would not be expected to generate significant odors or other emissions for a substantial duration. During construction, diesel-powered equipment may generate some odors, however these would dissipate in the immediate vicinity of the work areas. No operational impact related to odors would occur as a result of the project. The impact would be less than significant.

4.2.4 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?	☐	☒	☐	☐

A Biological Resources Report (Biological Report) was prepared for the Project by LSA in February 2023 (Appendix D). The findings and recommendations included in the Biological Report were based on database searches and literature review and a field survey of the Project site. The information in this section of the IS/MND is based on and adapted from the Biological Report.

REGULATORY SETTING – FEDERAL AND STATE

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 United States Fish and Wildlife Service (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. Federally listed plant species are only protected when take occurs on federal land; however, if a federal agency authorizes, funds, or carries out an action, that agency must ensure 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 (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 ("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. 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), as long as 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 similar to 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 2021).

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 meets 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 state 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 California Natural Diversity Database (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 Society (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 Suisun City General Plan

The City's General Plan Open Space and Conservation Element contains the following relevant policies related to biological resources:

> **Policy OSC-1.8:** Roads, water lines, sewer lines, drainage facilities, and other public facilities constructed to serve development shall be located and designed to avoid substantial impacts to stream courses, associated riparian areas, and wetlands, to the greatest practical extent.

Policy OSC-4.4: The City will require measures in areas adjacent to the Suisun Marsh to ensure against adverse effects related to urban runoff and physical access to the Marsh.

Solano Multispecies Habitat Conservation Plan

The Solano Multispecies Habitat Conservation Plan (Solano HCP) was developed to support the issuance of a Section 10(a)1(B) incidental take permit under the federal ESA. The Solano HCP provides a framework for compliance with State and Federal endangered species regulations for projects that accommodate future urban growth such as development of infrastructure, and operations and maintenance activities associated with flood control, irrigation facilities and other public infrastructure (Solano County Water Agency 2012). The Solano HCP outlines the following priorities:

- Promote the conservation of biological diversity and the preservation of endangered species and their habitats consistent with the recognition of private property rights;
- Provide or a healthy economic environment for the citizens, agriculture, and industries; and
- Allow for the ongoing maintenance and operation of public and private facilities in Solano County

ASSESSMENT METHODOLOGY

The following resources and databases were consulted for information on the environmental setting of the Project site:

- California Natural Diversity Database (CNDDB) (CDFW 2024)
- California Native Plant Society (CNPS) Online Inventory (CNPS 2023)
- Consortium of California Herbaria 2 (CCH2 2024)
- Contemporary aerial photographs (Google Earth 2024)
- USFWS Information for Planning and Conservation (UWFWS 2023)
- eBird bird species list for the Peytonia Slough Ecological Reserve (eBird 2023)
- Programmatic Biological Opinion (PBO) on the Proposed Suisun Marsh Habitat Management, Preservation, and Restoration Plan and Project-Level Actions in Solano County, California (USFWS 2013)
- A reconnaissance-level survey of the Project site was conducted by LSA senior biologist on December 9, 2022. The survey involved walking throughout the Project site in order to evaluate the site's potential to support special-status species and sensitive habitats. Plants and wildlife observed were recorded in field notes.
- Follow up site visits were conducted by WRA biologists on April 22, 2024, August 1, 2024, and October 1, 2024. The purpose of the visits were to complete protocol-level rare plant surveys and pollinator evaluations. The results of these surveys are described in the sections below.

ENVIRONMENTAL SETTING

Vegetation

The banks and top of the Kellogg stormwater detention basin are vegetated with ruderal and annual grassland plants, with common species comprising wild oats (*Avena* spp.), rip-gut

(*Bromus diandrus*), Italian rye (*Festuca perennis*), soft chess (*Bromus hordeaceus*), wild radish (*Raphanus sativa*), tall wheatgrass (*Elymus ponticus*), salt grass (*Distichlis spicata*), common mallow (*Malva neglecta*), Himalayan blackberry (*Rubus armeniacus*), sweet fennel (*Foeniculum vulgare*), bull thistle (*Cirsium vulgare*), yellow star-thistle (*Centaurea solstitialis*), wild radish (*Raphanus raphanistrum*), Harding grass (*Phalaris aquatica*), and ice plant (*Carpobrotus edulis*). Trees and shrubs along the southern site boundary include coast live oak (*Quercus agrifolia*) and coyote brush (*Baccharis pilularis*). Trees along the northern site boundary comprise non-native landscape trees adjacent to residential yards. Vegetation in the flat bottom of the basin includes saltgrass (*Distichlis spicata*), cattail (*Typha* spp.), Olney's three-square bulrush (*Schoenoplectus americanus*), and fat hen (*Atriplex prostrata*). The bottom of the Kellogg stormwater detention basin is predominantly vegetated with cattails in its eastern half and with bulrush in its western half. Tamarisk (*Tamarix* sp.), date palm (*Phoenix* sp.), and agave (*Agave* sp.) are also growing along perimeter of the basin.

Aquatic Resources

The Kellogg stormwater detention basin is a constructed stormwater collection basin with emergent vegetation typical of these areas. Correspondence with the US Army Corps of Engineers (Corps) on March 28, 2023, determined that the Kellogg detention basin is not subject to the Corps jurisdiction under Section 404 of the Clean Water Act and, thus, no federal Corps wetlands permit is required. The Regional Water Quality Control Board (RWQCB) may consider the Kellogg basin a Water of the State and issue an authorization under applicable California state regulations. The California Department of Fish and Wildlife (CDFW) has previously issued permits to Suisun City to maintain the water transport capacity of stormwater channels similar to the Kellogg Basin within the City's jurisdiction.

Special-Status Plant Species

Special-status plant species with potential to occur within the Project site were first evaluated through a literature and database review as described above. All species documented within the vicinity of the Project site were then assessed based on associated vegetation communities, soil affinity, associated species, topographic position, shade tolerance, disturbance tolerance, elevation, and population distribution to determine the potential for these species to occur in the Project site. Four species were determined to have the potential to occur, including:

- Suisun Marsh aster (*Aster lentus*; Rank 1B)
- Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*; Rank 1B)
- California alkali grass (*Puccinellia simplex*; Rank 1B)
- Long-styled sand-spurrey (*Spergularia macrotheca* var. *longistyla*; Rank 1B) (CDFW 2023).

Protocol-level rare plant surveys were conducted on April 22, August 1, and October 1, 2024. The surveys entailed using transects across the entirety of the Project site, with a focus on areas thought to be suitable for rare species and sensitive natural communities. The survey dates correspond to the periods of time when all four species with potential to occur would be evident and identifiable.

The surveys followed the protocol for plant surveys described in recommended resource agency (CDFW 2018, USFWS 1996) and CNPS (2001) guidelines. All plants were identified using the

Jepson eFlora (Jepson Flora Project 2024) to the taxonomic level necessary to determine whether they were rare. No rare plants that were observed during the protocol level surveys and the surveys further determined that potential habitat for rare plants species is absent within the Project site due to vegetation and soil conditions.

Special-status Wildlife Species

Potential occurrence of special-status species in the Project site areas was evaluated by first determining which special-status species occur in the vicinity of the Project site through a literature and database review as described above. Presence of suitable habitat for special-status species was evaluated during the site visits based on physical and biological conditions in the Project site area as well as the professional expertise of the investigating biologists.

Wildlife species or wildlife sign observed or detected during the reconnaissance-level survey consist of California ground squirrel (*Otospermophilus beecheyi*), raccoon (*Procyon lotor*), and various birds that occur in wetland and grassland habitats. Bird species observed or detected consisted of Canada goose, ring-necked pheasant, rock pigeon, mourning dove, Anna's hummingbird, killdeer, greater yellowlegs, California gull, great egret, turkey vulture, Cooper's hawk, northern flicker, black phoebe, California scrub-jay, American crow, ruby-crowned kinglet, marsh wren, northern mockingbird, house finch, white-crowned sparrow, golden-crowned sparrow, song sparrow, spotted towhee, red-winged blackbird, common yellowthroat, and yellow-rumped warbler.

While not observed during the field survey of the Project site, the following sections describe special-status wildlife species that have the potential to occur within the Project site.

Crotch's Bumble Bee: Crotch's bumble bee (*Bombus crotchii*) is a Candidate State Endangered species. Crotch's bumble bee's historical distribution possibly included the Project site, but this species is now rare (CDFW 2019). The closest CNDDB occurrence for the Crotch's bumble bee is a 2014 record approximately 4.6 miles from the site (CDFW 2023). Potentially suitable foraging habitat and nectar plants for Crotch's bumble bee is present on the Project site along the banks of the stormwater detention basin and adjacent uplands. Larger areas of foraging and nesting habitat are present in the abundant adjacent open space areas, contributing to the potential for this species to be present in the stormwater basin. This species does not have the potential to be present in developed areas of the Project site.

Monarch Butterfly: The monarch butterfly (*Danaus plexippus plexippus*) is a federal Candidate species and will be up for review again this year (2024). This butterfly uses milkweed (*Asclepias* spp.) as its hostplant and will use numerous flowering plants for nectar-feeding. Although no remnant milkweed plants were observed during the field survey, narrow leaf milkweed (*Asclepias fascicularis*) grows in disturbed soils, including disked firebreaks.

No milkweeds (*Ascelepias spp.*) were observed on the Project site or immediate vicinity during the April 22, August 1, or October 1, 2024, rare plant surveys conducted by WRA; therefore, forage opportunities for monarchs are quite low. No monarchs were observed during the on-site pollinator evaluations in April or August 2024. It was determined that habitat on-site was not ideal for pollinators, including monarchs, as the site and vicinity does not contain preferred forage and host plants for this species.

Northwestern Pond Turtle: The northwestern pond turtle (NPT, *Emys marmorata*) is a California Species of Special Concern. Limited suitable aquatic and nesting habitat are present at the Kellogg stormwater detention basin and the adjacent uplands. The closest CNDDB occurrence is approximately four miles from the site (CDFW 2023). Although unlikely due to the limited habitat and the site's isolation from occupied ponds, western pond turtles could occur within the stormwater detention basin bottom and banks and within uplands.

Burrowing Owl: Burrowing owl is a California Species of Special Concern that occurs in open, well-drained grasslands with abundant small mammal burrows, particularly those of California ground squirrels. The closest CNDDB occurrence is a 2006 record approximately 0.4 miles from the site (CDFW 2023). This owl has been observed in the Peytonia Slough Ecological Reserve (eBird 2023) and could nest, winter, and/or forage in the grasslands and wetlands at or near the site. The presence of ground squirrel burrows and low grass height in some areas provide suitable habitat conditions for the species. No owls or sign of their presence were observed during the reconnaissance survey. While unlikely, burrowing owls may nest and/or winter within the stormwater detention basin banks and in uplands adjacent to the basin.

Short-Eared Owl: The short-eared owl is a California Species of Special Concern that occurs in freshwater and salt marshes, meadows, and irrigated alfalfa fields. This raptor is known to forage in the Peytonia Slough Ecological Reserve (eBird 2023) and could nest in the stormwater detention basin banks and uplands adjacent to the basin.

Northern Harrier: The northern harrier is a California Species of Special Concern that occurs in grasslands, fields, marshes, and meadows. This raptor is known to forage in Peytonia Slough Ecological Reserve (eBird 2023) and could nest in trees and vegetation within the Project site. Individuals may also forage within the stormwater detention basin bottom, banks, and within uplands adjacent to the basin.

White-Tailed Kite: The white-tailed kite is a California Fully Protected Species. This species nests in trees or large shrubs with dense foliage located near suitable foraging habitat (e.g., grasslands, marshes, agricultural fields). Potential nesting habitat in the Project site is low quality and nesting is unlikely. However, trees in adjacent areas provide suitable nest sites and foraging habitat is present in the grasslands and wetlands in the stormwater basin and (primarily) in surrounding lands. No potential white tailed kite nests were found during the field surveys. White-tailed kites are known to occur in Peytonia Slough Ecological Reserve (eBird 2023). Individuals may also forage within the stormwater detention basin bottom, banks, and within uplands adjacent to the basin, and nesting is possible, but unlikely within the Project site.

California Black Rail: The California black rail is a State Threatened and California Fully Protected Species that inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays. This species is an extremely secretive bird which avoids areas of human presence and disturbance. It is likely to nest within marsh areas to the south of the Project site but there is no potential habitat present within the Project site.

California Ridgway's Rail: The California Ridgway's rail was listed as Federally Endangered. California Ridgway's rails nest mostly in lower tidal marsh zones near tidal sloughs and where cordgrass (*Spartina* spp.) is abundant. While California Ridgway's rail are known to occur in Peytonia Slough Ecological Reserve (eBird 2023), no suitable tidal channels occur at or within 700 feet of the Project site. Suitable habitat is not present within the Project site.

Other Nesting Birds: The trees, shrubs, herbaceous vegetation, wetland vegetation, and structures on or adjacent to the site provide suitable nesting habitat for numerous native bird species. Nests of all native birds, regardless of their regulatory status, are protected by the federal MBTA and provisions of the CFGC. Suitable nesting habitat is present on and adjacent to the site for both special-status (e.g., white-tailed kite) and common (e.g., northern mockingbird) bird species. Construction activities could potentially result in the disturbance of active nests if conducted during the breeding season (February through August). Construction-related disturbance (e.g., noise, vehicle traffic, personnel working adjacent to nesting habitat) could also indirectly impact nesting birds by causing adults to abandon nests in nearby trees or other habitat, resulting in nest failure and reduced reproductive potential. Vegetation removal activities would occur during the non-nesting season to the extent feasible.

Salt Marsh Harvest Mouse: The salt marsh harvest mouse (SMHM, *Reithrodontomys raviventris*) is a federally endangered, State endangered and a California Fully Protected Species. Salt marsh harvest mice inhabit mid- to upper elevations of tidal and diked salt marshes dominated by dense pickleweed and other halophyte, such as alkali heath (*Frankenia salina*), fat hen, and salt grass. Vegetated levees and other grassy upland habitats adjacent to marshes are also critical as they provide shelter from predators during high tides and flooding. High-quality marsh habitat is comprised of deep (23-29 inches tall) and dense pickleweed, intermixed with fat hen and alkali heath (Shellhammer 1982). The species requires non-submerged, salt tolerant vegetation to escape the high tide (Shellhammer et al 1982). During these periods of high tides, populations of salt marsh harvest mice tend to concentrate in high marsh areas (Fisler 1965). The SMHM has also been found in the top zone and transitional zones of tidal marshes that rarely flood. A recent study in Suisun Marsh north of Suisun Bay (Solano County) demonstrated that marsh microhabitats dominated by a variety of both native and non-native halophytic species (e.g., fat hen, alkali heath, salt grass, Baltic rush [*Juncus balticus*], prickly lettuce [*Lactuca serriola*]) can be just as productive for salt marsh harvest mice as pickleweed-dominated habitats (Sustaita et al. 2011). This species will also move into adjoining grasslands during the highest winter tides. Grasslands are also utilized as habitat primarily when new grass growth affords suitable cover in spring and summer months (Fisler 1965, Shellhammer 1982.). This species could use the uplands and stormwater detention basin banks within the Project site as upland refugia during high tides/flooding of adjacent marshes and for foraging in the spring. This species could also be found in the stormwater detention basin bottom if flushed from nearby vegetation.

Suisun Shrew: The Suisun shrew is a California Species of Special Concern that occurs in tidal marshes of the northern shores of San Pablo and Suisun Bays. Suisun shrews inhabit tidal marshes characterized in order of decreasing tolerance to inundation, by California cordgrass (*Spartina foliosa*), pickleweed (*Salicornia ambigua*), and gumplant (*Grindelia cuneifolia*), and brackish marshes dominated by bulrush (*Schoenoplectus californicus*) and broadleaf cattail (*Typha latifolia*) (Williams 1986 as cited in Collins 1998). In general, salt marsh shrews prefer areas of low, dense vegetation, which provide adequate cover and nesting places along with a plentiful supply of invertebrates (Johnston and Rudd 1957, Rudd 1955 as cited in Collins 1998). This species could use the uplands and stormwater detention basin banks within the Project site as upland refugia during high tides at the adjacent wetlands to the west. This species could also be found in the stormwater detention basin bottom.

Roosting Bats: Trees and structures in or adjacent to the Project site provide suitable roosting habitat for special-status and common bat species. Bats could roost in the buildings and structures or in the large trees within or adjacent to the site. Special-status bats that could roost

in the structures and large tree hollows include the pallid bat (*Antrozous pallidus*) and Townsend's big-eared bat (*Corynorhinus townsendii*), which are both California Species of Special Concern. Other bat species, such as the western red bat (*Lasiurus blossevillii*; California Species of Special Concern), could roost in the tree foliage at or near the site.

Critical Habitat

Critical Habitat for the federally listed Delta smelt (*Hypomesus transpacificus*) and Suisun thistle (*Cirsium hydrophilum* var. *hydrophilum*), vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardi*), and Contra Costa goldfields (*Lasthenia conjugens*) have been designated in the Project vicinity. Although Critical Habitat has been designated near the site, the Project does not provide suitable habitat for these species and is outside of designated critical habitat.

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)?

Special-status Plants (No Impact)

Though four special-status plant species were determined to have the potential to occur within undeveloped areas of the Project site, none of these species were observed during the protocol-level rare plant surveys conducted in April and August 2024. The upper banks and tidal marsh fringes in the Project site are densely covered by Himalayan blackberry and other tall established weedy vegetation, which would outcompete rare plant species known to occur in the vicinity. In addition, the site contains disturbed soil conditions from past construction and are less conducive to supporting rare plant species than native soils in surrounding areas. Based on the combination of poor habitat conditions and negative findings for rare plants during protocol level surveys, the Project would have no impact on special status plant species.

Special-status Wildlife (Less-than-Significant Impact with Mitigation Incorporated)

Based on a review of literature and resource databases, 11 special-status wildlife species have the potential to occur within the Project site. Field surveys of the Project site found that no suitable foraging habitat exists for monarch butterfly; therefore, the species was determined absent from the site. The following special-status wildlife species have potential to occur on the site, either for nesting, foraging, or both:

- Crotch's bumble bee (*Bombus crotchii*),
- Northwestern pond turtle (NPT) (*Actinemys marmorata*),
- Burrowing owl (*Atehene cunicularia*),
- Short-eared owl (*Asio flammeus*),
- Northern harrier (*Circus cyaneus*),
- White-tailed kite (*Elanus leucurus*),
- Salt-marsh Harvest Mouse (SMHM) (*Reithrodontomys* raviventris), and

- Suisun shrew (*Sorex ornatus sinuosus*).

Potential indirect impacts to California black rail were also considered as part of this analysis. However, based on the fact that Project construction would not result in a substantial change to the level of disturbance within the Project site relative to potential rail habitat in the nearby marsh, and the presence of developed and disturbed buffer areas between the Project site and suitable nesting habitat in the marsh, potential impacts to this species are considered less than significant.

In addition, non-special-status nesting birds protected by the MBTA and roosting bats, including some California Species of Special Concern, have the potential to nest/roost in shrubs, trees, and other vegetation within and around the Project site.

Project construction activities such as vegetation removal, grading, excavation, and landscaping within suitable habitat could result in direct or indirect impacts to special-status wildlife species if they are present within undeveloped areas of the Project site or in surrounding undeveloped areas. Potential impacts to specific special-status species that may be present within suitable habitat on the Project site are discussed in the following sections.

Crotch's Bumble Bee

Construction activities within the stormwater detention basin bottom, banks, and adjacent uplands, consisting of ruderal and non-native grassland, could result in direct impacts on the Crotch's bumble bee should they be present in these areas during construction, which is a potentially significant impact. Direct impacts on Crotch's bumble bee could include trampling or crushing should they nest within or around the stormwater detention basin. In addition, noise and general disturbance from such activities could result in indirect impacts, such as stress, and abandonment of nests or habitat, which is a potentially significant impact.

To avoid potentially significant impacts to Crotch's bumble bee, Mitigation Measure BIO-1 would be implemented. This measure requires that construction work within the stormwater detention basin bottom, banks, and uplands be prioritized to occur outside of the flight season from October to February. If work in these areas cannot be completed outside of the flight season due to conflicts with other federal or state issued permits and/or State funding and project completion deadlines, preconstruction surveys for Crotch's bumble bee shall be conducted. If Crotch's bumble bee is observed during surveys, all flowering resources will be removed in early spring/summer to avoid attracting foragers to the site. If any Crotch's bumble bee is observed within or around the stormwater detention basin during construction, construction will stop in these areas until the bee has moved off-site by its own volition. Implementation of Mitigation Measure BIO-1 would ensure that the Project would not have a substantial adverse effect on Crotch's bumble bee.

Northwestern Pond Turtle

Limited suitable aquatic and nesting habitat for NPT are present within the Kellogg stormwater detention basin, bottom, and within the adjacent uplands. Although NPT is unlikely to occur on-site due to the limited habitat and the site's isolation from occupied ponds, NPT could occur within the stormwater detention basin bottom, banks and adjacent uplands. Construction work within and around the stormwater detention basin could result in direct mortality or disturbance to NPT individuals or nests, if they are present on-site, which is a potentially significant impact.

To avoid potentially significant impacts to NPT, Mitigation Measure BIO-2 would be implemented. This measure requires that a qualified biologist conduct preconstruction surveys for NPT and nesting areas. If a nesting area is detected or suspected, temporary exclusion fencing shall be installed around the nesting area to prevent the movement of turtles into the construction area. In addition, construction personnel would be educated on what NPT looks like and who to notify if they see a NPT individual on-site. Implementation of Mitigation Measure BIO-2 would ensure that the Project would not have a substantial adverse effect on NPT.

Burrowing Owl

Direct impacts on burrowing owl could include nest destruction from ground disturbance or vegetation removal within and around the stormwater detention basin, and potential nest abandonment from temporary increase in noise, vibration, and human activity during construction within uplands and the stormwater detention basin banks and bottom. In addition, construction activities within suitable habitat including staging, pedestrian and vehicle movement, vegetation removal, road building could result in indirect impacts on burrowing owl, should they be foraging in suitable habitat within or adjacent to the stormwater detention basin during construction activities planned in these areas.

To avoid potentially significant impacts to burrowing owl, Mitigation Measure BIO-3 would be implemented. Mitigation Measure BIO-3 requires that preconstruction surveys for burrowing owl be conducted no more than 15 days prior to initial ground disturbance in suitable habitat within and around the stormwater detention basin. If burrows are detected, a no-work buffer shall be established around the burrows until the qualified biologist determines that the burrows are no longer active.

Other Nesting Birds

Special-status bird species, including northern harrier, short-eared owl, and white-tailed kite have the potential to nest and forage in suitable habitat within the Project site. There is also potential for migratory birds and raptors protected under the MBTA to nest and forage in suitable habitat in the Project site. Nesting birds could be directly impacted by construction activities if they were to be nesting in vegetation in the construction area, which is a potentially significant impact. Direct impacts on nesting birds could include nest destruction from ground disturbance or vegetation removal, and potential nest abandonment from temporary increase in noise, vibration, and human activity during construction.

In addition, construction activities in suitable habitat including staging, pedestrian and vehicle movement, vegetation removal, road building could result in indirect impacts on nesting, should they be foraging within or adjacent to the Project site during construction.

The Project would implement Mitigation Measure BIO-4, which requires preconstruction surveys within suitable habitat for nesting birds on and near the Project site. If nests are found, a qualified biologist shall establish a no-work buffer around the nests until the biologist has determined that the nests are no longer active. Implementation of this measure would avoid any direct or indirect impacts to nesting birds within the Project site area.

Salt Marsh Harvest Mouse and Suisun Shrew

During high tides, SMHM and Suisun shrew may move into the uplands and stormwater detention basin banks and bottom of the Project site and could be directly or indirectly impacted by construction activities in these areas, which is a potentially significant impact. Mitigation

Measure BIO-5 would be implemented to avoid impacts to SMHM and Suisun Shrew. Mitigation Measure BIO-5 requires that preconstruction surveys be conducted within and around the stormwater detention basin prior to commencement of construction in these areas. Immediately following preconstruction surveys, wildlife exclusion fence shall be installed around the boundaries of undeveloped areas of the Project site to prevent the movement of SMHM and Suisun shrew into the work areas. Mitigation Measure BIO-5 also requires that any vegetation slated for removal be removed in a way that minimizes impacts to the species. A qualified biological monitor will be present on-site during exclusion fence installation prior to construction activities occurring within and around the stormwater detention basin.

Roosting Bats

Roosting bats protected under the MBTA may forage on the Project site or roost in trees on or near the site. Any bat roosts present within trees or structures on the Project site could be directly impacted by construction activities. Direct impacts on roosting bats could include suitable roosting habitat destruction from tree removal activities, and potential roost abandonment from temporary increase in noise, vibration, and human activity during construction.

The Project would implement Mitigation Measure BIO-6, which requires a focused tree habitat assessment for any trees slated for removal within the Project site. If suitable roosting habitat has been identified in trees that will be removed, Measure BIO-6 specifies tree removal methods that will minimize impacts to roosting bats. Implementation of this measure would avoid any direct impacts to roosting bats within the Project site area.

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?

No Impact

The Project site includes ruderal and annual grassland, freshwater marsh vegetation, and developed land cover. While the margins of the Kellogg stormwater detention basin include a few scattered trees and shrubs, such as palm, tamarisk, and agave, it does not support riparian vegetation. There are no vegetative communities on the Project site that would be considered a sensitive natural community. Therefore, the Project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community. No impact would occur.

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 Kellogg stormwater detention basin is a constructed, trapezoidal stormwater detention basin. The bottom of the basin is predominantly vegetated with plants typical of stormwater features including cattails and bulrush. The banks of the basin are surrounded by imported soil and ruderal, annual grassland plants, and non-native landscape trees.

A wetland delineation report was prepared and submitted to the Corps which resulted in the Corps' determination that the Kellogg stormwater detention basin is not subject to Section 404 of the Clean Water Act jurisdiction. The Corps provided an Approved Jurisdictional Determination

which explained that the stormwater detention basin associated with the Kellogg PS was a man-made feature and therefore not determined to be a water of the U.S. and thus, no permit is required for planned improvements that affect the mapped wetlands.

The RWQCB might consider the purpose-built Kellogg stormwater detention basin a Water of the State and subject to wetlands permitting for fill. The CDFW issued a Routine Maintenance Agreement in 2015 for the basin indicating that the agency considers the stormwater basin a regulated feature under CFGC.

Potential impacts to the basin as a Water of the State and CFGC stream are limited to temporary fills to install coffer dams, and temporary impacts from vegetation removal to facilitate outfall maintenance, and vegetation maintenance and removal from the basin and side slopes. Basin side slopes would be revegetated with native fire-resistive vegetation to replace removed invasive species, and the stormwater vegetation would revegetate from the existing vegetative rootstock after removal. Vegetation removal, dewatering, and placement of temporary coffer dams during construction would result in a less than significant impact on jurisdictional waters. Project activities would not result in loss of area, function or value provided by the stormwater basin.

Road construction and fence installation activities have potential to contribute erosion, sedimentation, construction materials, dust, and debris that could result in temporary impacts on water quality if they were to enter the adjacent basin and if surface water were to be present. However, with implementation of Mitigation Measure BIO-7, the Project would not impact any 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

Wildlife movement between suitable habitat areas can occur via open space areas lacking substantial barriers. The Project site is situated in developed areas at the margin of the Suisun Marsh. While Suisun Marsh and surrounding open space areas are important for the movement of wildlife and contain abundant nursery sites for native species, the Project site does not substantially contribute to these movement corridor functions. While some wildlife species may use the Project site for foraging or local movement, the Project site does not serve as a linkage between open space areas. The Project site is bordered to the north by residences, and therefore is very close to human activity which is likely to discourage wildlife movement. Because the Project site is surrounded by the Suisun Marsh, wildlife is not constricted from other areas and forced to use the Project site as a movement corridor. During construction, it is anticipated that the limited wildlife movement that might occur through the Project site would adapt to using areas further south from the Project site for local movement and foraging. Once construction is finished, the Project site would remain similar to existing conditions, and wildlife may use the site for movement and foraging. As such, the Project would not interfere substantially with the movement of native resident or migratory fish or wildlife species or impede the use of native wildlife nursery sites. The impact would be less than significant.

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

Less-than-Significant Impact

The City's General Plan Open Space and Conservation Element designates the area south of residences along Maple Street as a Conservation – Higher Priority area. This area includes the portion of the Project site which contains the Kellogg PS and stormwater detention basin. The Project would include rehabilitation of the existing Kellogg PS, vegetation trimming within the basin, and construct a fire access road along the southern embankment of the basin. These improvements would not change the existing use of the Project site and would not significantly alter the already-disturbed habitat areas. The Project would improve the quality of the habitat by removing invasive species and replanting native species within and around the stormwater detention basin. Therefore, the Project would not conflict with the City's General Plan.
The City does not have a tree ordinance or other regulations protecting biological resources which apply to the Project site. Therefore, the Project would not conflict with any local policies or ordinances protecting biological resources. The impact would be less than significant.

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 undeveloped portions of the Project site are within the Planning Area for the Solano HCP, and could potentially impact species that are discussed in the HCP. However, the Project would implement Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, and BIO-7to avoid and minimize impacts to special-status wildlife species within undeveloped portions of the Project site. With implementation of these measures, the Project would not conflict with the Solano HCP. The impact would be less than significant with mitigation incorporated.

MITIGATION MEASURES

Mitigation Measure BIO-1: Crotch's Bumble Bee

The following measures shall be implemented to avoid impacts to Crotch's Bumble Bee:

1. A qualified biologist will be retained to provide a Worker Environmental Awareness Protection (WEAP) training session to construction personnel prior to any ground-disturbing work (e.g., grading, excavation, vegetation clearing) within undeveloped areas of the Project site. The WEAP training shall inform construction personnel on the special-status species that may be present within the Project site, how to identify them, and who to contact if a special-status species is observed. A representative will be appointed during the WEAP training session to be the contact for any employee or contractor who might inadvertently kill or injure a listed species or who finds a dead, injured, or entrapped individual. The representative's name and telephone number will be provided to the USFWS and/or CDFW before the initiation of ground disturbance.
2. Work within undeveloped areas of the Project site should be prioritized to occur between October and February to avoid the flight season for Crotch's bumble bee. If it is not feasible to avoid work in undeveloped areas during the flight season, a qualified biologist

shall conduct a pre-construction survey within suitable habitat following the CDFW 2023 Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species. If Crotch's bumblebee is not observed, the species can be presumed absent from the site and no further actions are required. If a Crotch's bumble bee nest is encountered, the biologist will consult with CDFW, and no construction will occur until guidance from CDFW has been obtained.

Mitigation Measure BIO-2: Northwestern Pond Turtle

The following measures shall be implemented to avoid impacts to NPT:

1. A WEAP training session will be provided as stated in Mitigation Measure BIO-1 and will include a description of NPT, its habitat, and measures to avoid impacts to the species should it occur within the undeveloped portions of the Project site.
2. A qualified biologist, defined as a biologist with sufficient experience identifying, surveying, and handling the focal special-status species, shall conduct surveys for NPT within 48 hours prior to initiating any ground-disturbing activities within undeveloped portions of the Project site. Surveys shall cover the stormwater detention basin bottom and banks, any access routes, and uplands within 50 feet.
3. If a NPT is found in the stormwater detention basin bottom, banks, or within uplands, work shall stop in the immediate presence of the individual. If activities can be conducted without harming or injuring the species, it shall be left at the location of discovery and monitored by the qualified biologist. The qualified biologist will be onsite daily when work occurs within 100 feet of the feature where the turtle was observed to ensure Project activities do not result in take of individuals.

If a NPT nesting area is detected or suspected, temporary exclusion fencing shall be installed around the nesting location to prevent movement of turtles from the nesting site into the active Project site. The on-site biologist shall survey the fencing at the beginning of each work day to ensure that the fencing is still intact and shall recommend adjustments to the fence if necessary.

Mitigation Measure BIO-3: Burrowing Owl

The following measures shall be implemented to avoid impacts to burrowing owl:

1. A WEAP training session will be provided as stated in Mitigation Measure BIO-1 and will include a description of burrowing owl, its habitat, and measures to avoid impacts to the species should it occur within undeveloped portions of the Project site.
2. A preconstruction activity survey for burrowing owls shall be performed by a qualified biologist no more than 15 days before initial ground disturbance activities within the undeveloped portions of the site. This survey shall be conducted in undeveloped areas within 500 feet of the stormwater detention basin and adjacent uplands and shall be conducted in accordance with the CDFW 2012 Staff Report on Burrowing Owl Mitigation (e.g., the surveys shall be conducted during weather conditions suitable for owl detection as recommended in the Staff Report. Surveys shall be conducted within two hours of dawn or sunset to maximize the detection of owls). If no burrowing owls are detected, no further measures are required.
3. If burrowing owl burrows are detected during the breeding season (generally February 1 to August 31), a 250-foot buffer, within which no new activity will be permissible, shall be maintained between activities within undeveloped areas of the Project site and occupied burrows. Owls present on the site after February 1 will be assumed to be

nesting unless evidence indicates otherwise as confirmed by a qualified biologist. This protected buffer area shall remain in effect until August 31, or based upon monitoring evidence, until the young owls are foraging independently or a qualified biologist has determined that the nest is no longer active. In some cases (e.g., if an activity is not visible from the nest site), it is possible that a breeding-season buffer less than 250 feet would be adequate to avoid disturbance of nesting burrowing owls, but such a variance would be set by a qualified biologist in consultation with the CDFW. In such a case, the biologist shall monitor the behavior of the nesting birds during the first full day of construction activity immediately surrounding the buffer. The biologist shall look for signs of stress such as repeated alarm calls, agitated behavior, or departure of the birds from the nest. If the birds do not show signs of habituation to the new disturbance by resuming their normal nesting activities, work within the vicinity of the nest shall stop and the CDFW shall be consulted to refine the buffer determination. If the birds continue their normal activities, the biologist shall inspect the nest site every 1 to 2 days (the frequency determined in consultation with the CDFW) for as long as the nest is active and work is ongoing within the reduced buffer to confirm that the birds are tolerant of the construction activities.

4. If burrowing owls are present during the nonbreeding season (generally September 1 to January 31), a qualified biologist will establish a buffer zone that is adequate to avoid injury or mortality of owls, and ensure it is maintained throughout construction activities within undeveloped portions of the Project site. If an adequate buffer cannot be maintained, or if destruction of the burrow is required, the non-nesting birds may be passively relocated subject to CDFW approval of a Burrowing Owl Exclusion Plan.

Mitigation Measure BIO-4: Nesting Birds

The following measures shall be implemented to avoid impacts to nesting birds:

1. A WEAP training session will be provided as stated in Mitigation Measure BIO-1 and will include a description of nesting birds, where nests may occur, and measures to avoid impacts to nesting birds should active nests occur within the Project site.

2. Prior to construction activities occurring during the nesting bird season (February 1 through August 31), a preconstruction activity survey for nesting birds will be conducted by a qualified biologist to ensure that no nests will be disturbed during Project implementation. The survey will be conducted no more than seven days prior to the initiation of construction activities. During this survey, the biologist shall inspect all trees and other potential nesting habitats (e.g., shrubs, ground and structures) within undeveloped portions of the Project site plus a surrounding 200-foot buffer for nests. If removal of potential nesting substrate or grading within undeveloped portions of the Project site will occur during more than one nesting season, then additional pre-activity surveys must be performed within seven days prior to initiation of work within undeveloped areas of the Project site. If the preconstruction activity survey does not identify the presence of any active nests on or within 200 feet of the site, construction activities may proceed, and no further measures are required.

    a. If nests are found a qualified biologist shall establish an appropriate construction buffer around each nest. Generally, a buffer of 200 feet for raptors and 100 feet for songbirds are adequate to avoid causing nest abandonment, but the specific buffer distance would be determined by the qualified biologist completing the survey considering biological and abiological factors such as existing disturbance

levels and screening from Project activities. The buffer shall remain in place until the qualified biologist has confirmed that the nest is no longer active.

i. If less than a 100-foot nest buffer is necessary and determined to be appropriate for a particular nest or nests, a qualified biologist shall monitor the nest(s) before construction to document baseline nesting behavior and monitor the nest during construction to ensure nesting birds are not exhibiting signs of stress and territorial behavior. If signs of stress are observed during the monitoring, construction activities shall cease or buffer shall increase, as determined by a qualified biologist, to a sufficient distance where the nesting birds are longer exhibiting signs of stress.

b. To prevent encroachment, the buffer shall be clearly marked for avoidance. The established buffer shall remain in effect until the young have fledged or the nest is no longer active as confirmed by the biologist.

Mitigation Measure BIO-5: Salt Marsh Harvest Mouse and Suisun Shrew

The following measures shall be implemented to avoid impacts to SMHM and Suisun shrew:

1. A WEAP training session will be provided as stated in Mitigation Measure BIO-1 and will include a description of SMHM and Suisun shrew, their habitat, and measures to avoid impacts to the species should they occur within undeveloped areas of the Project site.
2. A qualified biologist with previous SMHM and Suisun shrew monitoring and surveying experience shall conduct a preconstruction survey for SMHM and Suisun shrew immediately prior to initiation of construction activities within undeveloped portions of the Project site.
3. To prevent SMHM and Suisun shrew from moving through the work areas during construction activities, a wildlife exclusion fence shall be installed after preconstruction surveys and prior to the start of work within undeveloped portions of the Project site. The fence should be made of a material that does not allow SMHM or Suisun shrew to pass through or over, and the bottom should be buried to a depth of 2 inches so that small mammals cannot crawl under the fence. Any supports for the exclusion fencing must be placed on the inside of the undeveloped portions of the Project site.
4. Following fence installation, the qualified biologist will inspect the exclusion fence a minimum of once per week to ensure that it has no holes or rips and the base is still buried. The fenced area also will be inspected to ensure that no small mammals are trapped in it. Any rodents found along and outside the fence will be closely monitored until they move away from the construction area.
5. If a SMHM or Suisun shrew is discovered, construction activities will cease in the immediate vicinity of the individual until the USFWS and/or CDFW is contacted and the individual has been allowed to leave the construction area.
6. A qualified biologist with previous SMHM and Suisun shrew experience will be on site during initial construction activities occurring in undeveloped portions of the Project site. The biologist will document compliance with the Project permit conditions and avoidance and conservation measures. The qualified biologist will notify FSSD's project manager to stop Project activities if any of the requirements associated with these measures are not being fulfilled. If take of any listed species occurs, the USFWS and CDFW will be notified within one day by email or telephone.

7. Vegetation clearing will be conducted in a way that minimizes impacts to SMHM and Suisun shrew:
    a. Vegetation removal shall be overseen by a qualified biological monitor.
    b. Vegetation must be cleared to bare ground.
    c. Vegetation should be removed from all areas (driving roads, action area, or anywhere else that vegetation could be stepped on).
8. Work will be scheduled to avoid extreme high tides when there is potential for SMHM and Suisun shrew to move to higher, drier grounds. All equipment will be staged on existing roadways or paved/gravel areas away from the Project site when not in use.

Mitigation Measure BIO-6: Roosting Bats

The following measures shall be implemented to avoid impacts to roosting bats:

1. A WEAP training session will be provided as stated in Mitigation Measure BIO-1 and will include a description of roosting bats, where roosts may occur, and measures to avoid impacts to bats should suitable roosting habitat occur within the undeveloped areas of the Project site.
2. Tree removal should be prioritized to occur outside the maternity roosting season, between September 1 through April 30. Large trees ((DBH > 24 inches) removed during this season shall be cut using a two-phased system where branches and limbs are cut and left on the ground overnight prior to chipping or removal from the site.
3. During the maternity roost season (May 1 – August 31), at least 30 days prior to the removal of any large tree (DBH > 24 inches) a bat roost assessment shall be conducted by a qualified biologist to determine if potential roost habitat is present.
4. If no maternity roost habitat is present, trees shall be removed using a two-phased cut system. Cut branches and limbs shall be left on the ground overnight prior to chipping or removal from the site.
5. If potential maternity roosting habitat is present, the qualified biologist shall conduct an emergence survey to determine if the roost is occupied or assume the roost is occupied and establish a no-work buffer. If an emergence survey is conducted and does not detect bats, the tree may be removed with no further measures required to protect roosting bats. If roosting bats are detected, or the tree is assumed to be an active roost, the tree shall be given a 100-foot no work buffer and shall be avoided until after the maternity roosting season is complete. Once the maternal roosting season is complete, tree removal shall follow the two-phase approach for tree removal.

Mitigation Measure BIO-7: Protection of Surface Waters

The Project shall implement the following measures to avoid impacts to surface waters:

1. A WEAP training session will be provided as stated in Mitigation Measure BIO-1 and will include a description of surface waters on site and measures to avoid impacts to these resources within the Project site.
2. Best management practices (BMPs), such as silt fencing, fiber rolls, weed-free straw bales, or other measures shall be implemented during construction to minimize dust, dirt, and construction debris from entering waterways, and/or leaving the construction area.

3. The contractor shall be required to submit a Spill Response Plan including appropriate hazardous material BMPs (such as access to a spill control kit) to reduce the potential for chemical spills or contaminant releases into waterways.
4. All equipment refueling, and maintenance shall be conducted in the staging area away from waterways. In addition, vehicles and equipment shall be checked daily for fluid and fuel leaks. Drip pans shall be placed under all equipment that is parked and not in operation. Any leaking vehicles or equipment shall not be operated at the Project site until repaired. All workers shall be informed of the importance of preventing spills and the appropriate measures to take should a spill happen.
5. Stationary equipment such as motors, pumps, generators, compressors, and welders located within 50 feet of waterways shall be positioned over drip-pans, including when in operation.
6. Any temporary erosion control implemented during construction shall be completed using non-invasive species and/or products without plastic monofilament. At Project completion, all temporarily disturbed areas shall be re-contoured to the pre-construction condition.

4.2.5 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?	☐	☒	☐	☐

Tom Origer & Associates (Origer) prepared a Cultural Resources Study for the Project in September 2024 (Barrow 2024, Appendix F.[3] The study was conducted to meet the requirements of CEQA, the City of Suisun City, the State Water Resources Control Board, the Corps, Section 106 of the National Historic Preservation Act (NHPA). The study was conducted to identify potential historic properties that could be eligible for inclusion on the National Register of Historic Places (National Register), as outlined in 36 Code of Federal Regulations (CFR) 800 or potential historical resources other than Tribal Cultural Resources, as defined in Public Resources Code (PRC) 21074 (a)(1)(A)-(B), in the vicinity of the Project site. The study included archival research at the Northwest Information Center, Sonoma State University, examination of the library and files of Origer, Native American contact, and a field survey of the Project site. Information in this section of the IS/MND is adapted from the Cultural Resources Study.

ENVIRONMENTAL SETTING

Prehistory

The concept of prehistory refers to the period of time before events were recorded in writing and varied worldwide. Because there is no written record, the understanding of California prehistory relies on archaeological materials and oral histories passed down through generations. In the 1930s, archaeologists from Sacramento Junior College and the University of California began piecing together a sequence of cultures primarily based on burial patterns and ornamental artifacts from sites in the lower Sacramento Valley (Lillard, Heizer, and Fenenga 1939). Their cultural sequence became known as the Central California Taxonomic System, which identified three culture periods termed the Early, Middle, and Late Horizons, but without offering date ranges. Refinement of the Central California Taxonomic System became a chief concern of archaeologists as the century progressed.

[3] The Cultural Resources Study is available for review at the District by qualified individuals only.

It is estimated that native peoples have occupied the region for over 11,000 years, and during that time, shifts took place in their social, political, and ideological regimes (Fredrickson 1973). Early occupants appear to have had an economy based largely on hunting, with limited exchange, and social structures based on the extended family unit. Later, milling technology and an inferred acorn economy were introduced. This diversification of economy appears to be coeval with the development of sedentism and population growth and expansion. Sociopolitical complexity and status distinctions based on wealth are also observable in the archaeological record, as evidenced by an increased range and distribution of trade goods (e.g., shell beads, obsidian tool stone), which are possible indicators of both status and increasingly complex exchange systems.

These horizons or periods are marked by a transition from large projectile points and milling slabs, indicating a focus on hunting and gathering during the Early Period, to a marine focus during the Middle Period evidenced by the number of shellmounds in the Bay Area. The Middle Period also saw more reliance on acorns and the use of bowl-shaped mortars and pestles. Acorn exploitation increased during the Late Period and the bow and arrow were introduced.

Prehistoric archaeological site indicators expected to be found in the region include but are not limited to obsidian and chert flakes and chipped stone tools; grinding and mashing implements such as slabs and hand-stones, and mortars and pestles; and locally darkened midden soils containing some of the previously listed items plus fragments of bone, shellfish, and fire-affected stones.

Ethnography

Linguists and ethnographers tracing the evolution of languages have found that most of the indigenous languages of the California region belong to one of five widespread North American language groups (the Hokan and Penutian phyla, and the Uto-Aztecan, Algic, and Athabaskan language families). The distribution and internal diversity of four of these groups suggest that their original centers of dispersal were outside, or peripheral to, the core territory of California, that is, the Central Valley, the Sierra Nevada, the Coast Range from Cape Mendocino to Point Conception, and the Southern California coast and islands. Only languages of the Hokan phylum can plausibly be traced back to populations inhabiting parts of this core region during the Archaic period, and there are hints of connections between certain branches of Hokan, such as that between Salinan and Seri, that suggest that at least some of the Hokan languages could have been brought into California by later immigrants, primarily from the Southwest and northwestern Mexico (Golla 2011).

At the time of Euroamerican settlement, people inhabiting this area were the Patwin (Johnson 1978, Kroeber 1925). The Patwin were speakers of the Wintuan language, part of the Penutian language family. The Patwin's aboriginal territory was large and environmentally diverse. To the north, it reaches Princeton in Colusa County, and to the south it extends to the San Pablo and Suisun Bays. Within the larger area that constitutes the Patwin homelands, there were bands or tribelets that occupied distinct areas. Primary village sites of the Patwin were occupied continually, while temporary sites were visited to procure resources that were especially abundant or available only during certain seasons. Sites often were situated near fresh water sources and in ecotones where plant life and animal life were diverse and abundant.

History

Solano County was one of the original 27 counties of California. It was named in honor of Indian Chief Sem Yeto, who was as close friend of General Mariano Vallejo. After he was baptized at the mission at Sonoma, he was named in honor of the Franciscan missionary who died in Peru in 1610. Chief Solano was said to have ruled over the area between Petaluma Creek and the Sacramento River (Hoover et al. 2002).

Suisun City is on what once was an island in the marshlands of southern Solano County. It was used as a landing by Curtis Wilson and Dr. John Baker by 1850; however, Captain Josiah Wing ran boats to the island in the same year and Wing is credited with establishing a settlement in 1851 (Munro-Fraser 1879). This settlement was ideally located for transportation along the sloughs that connect to Suisun Bay, and Wing took full advantage, erecting a warehouse on the embarcadero (Hoover et al. 2002). The town was laid out over the following years and more people arrived so that by 1868, the residents petitioned for and became an incorporated city. By the late 1800s, Suisun City boasted about 1,800 inhabitants.

Agriculture was a key industry in the region, and Suisun City was poised for the processing and movement of agricultural products. Wheat was a chief product in Suisun Valley and neighboring Green Valley, followed by fruit. In Suisun City, the milling of wheat into flour was an enterprise that grew as the 19th century continued. It also gained importance as the "chief port-of-entry and departure" in the County (Gregory 1912). Not only did the City boast access to transport by water, but by the late 1860s, it was also connected by rail.

In 1888, a devastating fire destroyed many of the buildings that comprised downtown including 45 businesses and 28 homes (Suisun City 2024). The City rebuilt and even expanded before it experienced another major fire in 1906. This fire destroyed the original train depot and much of the residential portion of the City (Solano County Genealogical Society 2024). The rail station that exists today was built in 1914.

Suisun City remained largely rural until the late 1960s when Interstate 80 was constructed nearby. Though the City's commercial traffic was diverted from waterways and rail with the freeway's development, the late 1960s and 1970s saw an increase in residential development much like other communities peripheral to San Francisco.

Historic period site indicators generally include fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

REGULATORY SETTING

Cultural Resources

As set forth in Section 5024.1(c) of the PRC, for a cultural resource to be deemed "important" under CEQA and thus eligible for listing on the California Register of Historical Resources (California Register), it must meet at least one of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California History and cultural heritage; or

2. Is associated with the lives of persons important to our past; or
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic value; or
4. Has yielded or is likely to yield, information important to prehistory or history.

Historic-era structures older than 50 years are most commonly evaluated in reference to Criterion 1 (important events), Criterion 2 (important persons) or Criterion 3 (architectural value). To be considered eligible under these criteria, the property must retain sufficient integrity to convey its important qualities. Integrity is judged in relation to seven aspects including: location, design, setting, materials, workmanship, feeling, and association. Prehistoric and historic-era archaeological resources are commonly evaluated with regard to Criterion 4 (research potential).

Guidelines for the implementation of CEQA define procedures, types of activities, persons, and public agencies required to comply with CEQA. Section 15064.5(b) prescribes that project effects that would "cause a substantial adverse change in the significance of an historical resource" are significant effects on the environment. Substantial adverse changes include both physical changes to the historical resource, or to its immediate surroundings.

Archaeological Resources

Section 21083.2 of the CEQA guidelines also defines "unique archaeological resources" as "any archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and show that there is a demonstrable public interest in that information.
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person."

This definition is equally applicable to recognizing "a unique paleontological resource or site." CEQA Section 15064.5 (a)(3)(D), which indicates "generally, a resource shall be considered historically significant if it has yielded, or may be likely to yield, information important in prehistory or history," provides additional guidance.

National Historic Preservation Act Section 106

Under Section 106 of the NHPA, when a federal agency is involved in an undertaking, it must take into account the effects of the undertaking on historic properties (36 CFR Part 800). Compliance with Section 106 requires that agencies make an effort to identify historic properties that might be affected by a project.

The National Register defines a historic property as a district, site, building, structure, or object significant in American history, architecture, engineering, archaeology, and culture, and that may be of value to the nation as a whole or important only to the community in which it is located.

CULTURAL RESOURCES STUDY FINDINGS

Archival Research

Results of the records search indicated that the Project site has not been previously subjected to a cultural resources survey. No cultural resources have been documented within the Project site.

Seven studies have been conducted within a half mile of the Project site. There are several cultural resources recorded within a half mile of the site; most of them are buildings within the Suisun City Historical District. There are no known ethnographic sites within one mile of the Project site (Kroeber 1925, 1932, Johnson 1978).

A review of 19th and 20th century maps and aerial photos show that the Project site was marshland until between 1948 and 1957, when the subdivision in which the Project site lies was constructed.

Sensitivity for Buried Sites

Origer estimated the sensitivity of the Project site for buried archaeological sites using a method which considers the age of the landform, slope, and proximity to water (Byrd et al. 2017). A location is considered to have highest sensitivity if the landform dates to the Holocene, has a slope of five percent or less, is within 150 meters of fresh water, and 150 meters of a confluence. Note, the Holocene Epoch is the current period of geologic time, which began about 11,700 years ago, and coincides with the emergence of human occupation of the area. A basic premise of the model is that archaeological deposits will not be buried within landforms that predate human colonization of the area. Calculating these factors using the buried site model, a location's sensitivity is scored on a scale of 1 to 10 and classed as follows: lowest (<1); low (1-3); moderate (3-5.5); high (5.5-7.5); highest (>7.5).

By incorporating the formula created by Byrd *et al.* (2017), it was determined that there is a very low (<1) sensitivity for buried archaeological site indicators within the Project site. This analysis is supported by a geoarchaeological study of the Suisun Marsh conducted by Meyer et al. in 2013.

Field Survey

An intensive field survey of the Project site was completed by Eileen Barrow on April 22, 2024. Ground visibility was primarily poor, with asphalt, concrete, and vegetation (such as grasses and forbs) being the primary hindrance. A hoe was used, as needed, to clear patches of vegetation to expose the ground surface. For portions of the Project site within City streets, the sidewalks of the streets were walked so that the yards of adjacent properties could be examined.

Built Environment

The Kellogg stormwater detention basin lies within the Project site. It is approximately 870 feet long and approximately 50 feet wide.

The Kellogg stormwater detention basin was evaluated for inclusion on the National Register. The structure was evaluated within the historical context of post-World War II growth in the San

Francisco Bay Area (1945-1973) using the historic context developed by Caltrans for evaluating tract housing (Caltrans 2011).

The explosion of housing construction that occurred after World War II vastly changed the landscape of California. Because housing during this time was conducted using mass-produced methods, it is rare for a single house, let alone a simple piece of infrastructure, to meet criteria for inclusion on the National Register on its own merits. It is not enough for a resource to merely be associated with an historic event for a resource to qualify under Criterion A. A resource's specific association with that historical event must be considered important as well (National Park Service 1995:12). The basin did not contribute to the theme of post-World War II growth and even if the subdivision were considered as a whole, this ubiquitous piece of infrastructure would not be an important contribution to its significance; therefore, the Kellogg stormwater detention basin does not meet Criterion A.

The Kellogg stormwater detention basin does not appear to be associated with anyone important to the history of Suisun City; therefore, Criterion B is not met.

The basin is of simple construction and does not embody the distinct characteristics of a type, period, or method of construction, or represent the work of a master; therefore, it does not meet Criterion C.

The basin does not meet Criterion D. Criterion D generally applies to archaeological resources or resources that, through the study of construction details, can provide information that cannot be obtained in other ways. The houses within this subdivision and associated infrastructure possess no intrinsic qualities that could answer questions or provide important information about our history.

Following the application of the historical context of post-World War II growth in the San Francisco Bay Area, archival research of the Project site, and examination of the Kellogg stormwater detention basin, it was determined that the basin does not meet criteria for inclusion on the National Register and is not considered an historic property. Documentation for the basin can be found in Appendix B of the Cultural Resources Study (Appendix F).

DISCUSSION OF IMPACTS

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

No Impact

No historical resources, as defined by CEQA Guidelines Section 15064.5, were identified during the records search or field survey of the Project site. The only structure within the Project site is the Kellogg stormwater detention basin, which was evaluated for eligibility on the National and California Registers. It was determined that the basin does not meet the criteria for inclusion on either register; therefore, it would not be considered a historical resource. The Project would not cause a substantial adverse change in the significance of ah historical resource pursuant to CEQA Guidelines Section 15064.5. No impact would occur.

b) 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 archaeological resources have been previously documented within the Project site. The site was determined to have a very low potential for buried archaeological resources, and no archaeological resources were found during the field survey of the Project. However, ground-disturbing activities during construction could result in the discovery of unknown archaeological resources within the Project site, which is a potentially significant impact. The Project would implement Mitigation Measure CUL-1, which requires that, if buried materials are encountered, all soil disturbing work shall be halted at the location of the discovery until a qualified archaeologist completes a significance evaluation of the find(s) pursuant to Section 106 of the NHPA. With the implementation of this measure, the Project would not cause as substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5. The impact would be less than significant with mitigation incorporated.

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

Less-than-Significant with Mitigation Incorporated

There are no known human remains located within the Project site. However, ground-disturbing activities during construction have the potential to impact unknown human remains which may be buried beneath the Project site. The Project would implement Mitigation Measure CUL-2, which contains proper procedures that must be followed in the event of discovery of human remains on the Project site. With implementation of mitigation Measure CUL-2, the Project would not disturb any human remains, including those interred outside of dedicated cemeteries. The impact would be less than significant with mitigation incorporated.

MITIGATION MEASURES

Mitigation Measure CUL-1. Archaeological Resources

If buried materials are encountered during Project construction, all soil disturbing work shall be halted within the immediate vicinity of the discovery until a qualified archaeologist makes a significance evaluation of the find(s) pursuant to Section 106 of the NHPA (36CFR60.4). If the qualified archeologist determines that the find is eligible for inclusion on the National or California Register, the archaeologist shall make recommendations for appropriate methods of treatment for the find, which shall be implemented by the Project proponent. Potential treatment methods for resources may include, but would not be limited to, avoidance of the resource through changes in construction methods or Project design or implementation of a program of testing and data recovery, in accordance with all applicable federal and state requirements. Any efforts shall be documented in a cultural resources report to be filed with the Northwest Information Center.

Mitigation Measure CUL-2: Human Remains

Work shall halt within 50 feet if human remains are uncovered during construction. The significance of the find shall be assessed by a qualified archaeologist, and the appropriate management shall be pursued. California law recognizes the need to protect interred human remains, particularly Native American burials and items of cultural patrimony, from vandalism and inadvertent destruction. The procedures for the treatment of discovered human remains are contained in California Health and Safety Code §§ 7050.5 and 7052 and PRC § 5097. If remains are uncovered, the District and the County coroner shall be notified immediately. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or State lands (Health and Safety Code § 7050.5[b]). If the coroner

determines that the remains are those of a Native American, the coroner must contact the NAHC by phone within 24 hours of making that determination (Health and Safety Code § 7050[c]). The District and the professional archaeologist shall contact the Most Likely Descendent, as determined by the NAHC, regarding the remains. The Most Likely Descendant, in cooperation with the District, shall determine the ultimate disposition of the remains and any associated artifacts.

4.2.6 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

Electricity and natural gas in the City are provided by Pacific Gas & Electric (PG&E). The City's Draft Climate Action Plan is referenced in the Environmental Impact Report (EIR) prepared for the City's 2035 General Plan update. However, the Draft Climate Action Plan is not yet available to the public and has not been adopted. The General Plan EIR states that the Plan includes measures addressing energy efficiency, financing for energy efficiency and renewable energy generation improvements, appliances, lighting, land use and transportation, water conservation, solid waste management, and green infrastructure (City of Suisun City 2016).

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 use of equipment and vehicles during Project construction would require the use of energy resources. The construction process would be designed to be efficient to avoid excess monetary costs. Specifically, equipment and fuel would not be used wastefully during construction due to the added expense associated with renting, maintaining, and fueling equipment. As such, energy and fuel would not be wasted or used inefficiently by construction equipment and vehicles. Project operation would not result in wasteful, inefficient, or unnecessary consumption of energy resources. The proposed upgrades to the Kellogg PS would increase the energy efficiency of the PS, which would result in a beneficial impact to energy resources. Therefore, the Project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation. 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 Draft Climate Action Plan is referenced in the EIR prepared for the City's 2035 General Plan update. However, the Draft Climate Action Plan is not yet available to the public and has

not been adopted. The Project supports objectives of the Plan to increase energy efficiency and decrease energy consumption, as described above in *Threshold a)*. Therefore, the Project would not conflict with any state or local plan for renewable energy or energy efficiency. No impact would occur.

4.2.7 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

Regional Geology

The Project site is located in Suisun city, situated in the southern portion of Sacramento Valley, which, along with the San Joaquin Valley, comprises the Great Valley geomorphic province. The Great Valley is a forearc basin filled with thousands of feet of sedimentary deposits that have experienced subsidence and uplift over millions of years.

The majority of the Great Valley's surface consists of alluvium from the Holocene and Pleistocene epochs. This alluvium comprises sediments transported from the Sierra Nevada to the east and the Coast Range to the west, deposited by water onto the valley floor. The main types of sedimentary deposits found here are siltstone, claystone, and sandstone. In the east-central and northeastern areas of Solano County, including Suisun City, the landscape is relatively flat, characterized by a Holocene and Pleistocene alluvial plain, with occasional exposures of the Pliocene Tehama Formation.

In the southern part of the City and the surrounding area, fine-grained, organic-rich Holocene intertidal deposits create delta formations along the bay margins. The local topography around Suisun City features low, flat marshes and sloughs within a broad valley, while the hills and ridges that rise above the flatlands reveal outcrops of the Tehama Formation and the Neroly sandstone (City of Suisun City 2015).

Geologic and Soil Units

The Project site is underlain by quaternary Holocene Alluvium, which are alluvial fan and Bay Mud deposits which overlie older Pleistocene alluvium. This geologic unit consists of sand, silt, and gravel deposited in fan, valley, fill, or basin environments. The depth to bedrock underneath the Project site is greater than 83 centimeters (City of Suisun City 2015).

Soils underlying the Project site include Tambra mucky clay, which has only a slight erosion hazard but is frequently subject to ponding (City of Suisun City 2015). Exhibit GEO-4 of the City's General Plan EIR indicates that this soil type has a high shrink-swell potential.

Faults

The Project site is within the San Francisco Bay Area, which is a known seismically active region. Seismic activity can lead to various geological and seismic hazards, including fault displacement and rupture, ground shaking, liquefaction, lateral spreading, landslides, and avalanches. Solano County has numerous faults, and both local and external faults could impact the Project site.

The nearest major fault zone to the Project site is the Cordelia Fault, with the nearest traces located approximately 4.9 miles to the west. The Cordelia Fault is designated as an Alquist-Priolo Earthquake Zone of Required Investigation (California Geological Survey 2024). Although not an Alquist-Priolo Fault Zone, the City's General Plan EIR notes that the Vaca-Kirby Hills Fault runs north-south in the eastern portion of the City. Numerous earthquakes with magnitudes of 3.7 or less have occurred along this fault over the last 32 years (City of Suisun City 2015).

DISCUSSION OF IMPACTS

a-i) 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?

No Impact

The Project site is not within an Alquist-Priolo Earthquake Zone of Required Investigation. The nearest fault zone is the Cordelia Fault, situated approximately 4.9 miles west of the site. The Vaca-Kirby Hills fault is not considered by the California Geological Survey to have a high potential for surface rupture, which is why it is not zoned under the Alquist-Priolo Fault Zone Act (City of Suisun City 2015). The Project would not create any new inhabitable structures which would be at risk of causing loss, injury, or death involving rupture of a known earthquake fault. No impact would occur.

a-ii) 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 has the potential to endure strong seismic ground shaking from earthquakes that could occur on active and potentially active faults in the region. The Project contractor would comply with all federal Occupational Safety and Health Administration (OSHA) and California OSHA (Cal/OSHA) requirements related to constrution worker safety, which would reduce risks associated with strong seismic ground shaking during construction to a less than significant level. Operation of the proposed Project would not cause substantial effects associated with strong seismic ground shaking. The Project would not create any new inhabitable structures or any structures which could result in the risk of loss, injury, or death involving strong seismic ground shaking. Therefore, the Project would not directly or indirectly cause potential substantial adverse effects associated with strong round shaking. The impact 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?

Less-than-Significant Impact

Liquefaction primarily occurs in relatively loose, saturated, cohesionless soils that lose their strength and become incapable of supporting the weight of overlying soils or structures when subject to earthquake stresses. Soils on the Project site consist of Tambra mucky clay, which tend to be highly saturated and therefore, may be at risk of liquefaction. The Project consists of improvements to a stormwater basin and rehabilitation of an existing PS, which would not exacerbate the potential for soils at the site to liquefy during seismic events and would not create any new inhabitable structures or otherwise present risks to life. The impact would be less than significant.

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 and surrounding areas have slopes of less than four percent (City of Suisun City 2015). The Project site is not within a seismic hazard landslide zone (CDOC 2024a), and there

have been no reported landslides within the vicinity of the Project site (CDOC 2024b). There are no hilly areas near the Project site which could pose risk of landslide. Therefore, the Project would not cause potential substantial adverse effects involving landslides. No impact would occur.

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

Less-than-Significant Impact

The Project site is situated in a relatively flat area and is underlain by Tamra clay, which has a slight erosion rating. During construction, activities such as stockpiling, grading, excavation, and earth-disturbing activities would result in loose and disturbed soils on the project site. Loose and disturbed soils are more prone to erosion and loss of topsoil by wind and water. Because the Project would disturb over one acre of soil, the Project would be required to prepare and implement Stormwater Pollution Prevention Plan (SWPPP) in order to comply with Construction General Permit requirements. The SWPPP would be supported by an Erosion Control Plan which would contain measures to reduce erosion and sediment runoff from the Project site. Measures may include covering stockpiled soils, watering dry soils, and using erosion control fencing or blankets. With implementation of the SWPPP during construction, the Project would not result in substantial erosion. The impact would be less than significant.

As described in *Section 3.3, Project Construction,* the Project would require 1000 CY of cut material and 950 CY of fill, resulting in a net cut volume of approximately 50 CY. Therefore, the Project would not result in substantial loss of topsoil. The impact would be less than significant.

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?

Less-than-Significant Impact

The Project site is not within a landslide or liquefaction hazard zone of an Alquist-Priolo Fault Zone (California Geological Survey 2024). The Project site is underlain by Tambra mucky clay, which could be susceptible to liquefaction; however the Project would not create any new inhabitable structures which could become unstable as a result of the Project. The Project would include improvements to existing infrastructure on the Project site; therefore, no new hazards related to unstable soil units would result from the Project. The impact would be less than significant.

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?

Less-than-Significant Impact

The Project site is underlain by Tambra mucky clay, which has a high shrink-swell potential (City of Suisun City 2015). The Project would include rehabilitation of existing infrastructure on the Project site and would not create any new inhabitable structures. Therefore, the Project would not introduce any conditions which would result in risks to life or property due to the expansive soils on the Project site. 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

The Project would not include any septic tanks or alternative wastewater disposal systems. No impact would occur.

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

Less-than-Significant Impact

The City's General Plan Open Space and Conservation Element states that Suisun City is largely underlain by alluvial deposits which can contain paleontological resources. Geologic units beneath the City include Late Holocene Alluvium (11,000 years old to present day), Pleistocene Alluvium (1.8 million to 11,000 years old) and the Tehama Formation (5.3 to 1.8 million years old). Areas underlain by Pleistocene alluvium and Tehama Formation are considered to be paleontologically sensitive, and the City requires paleontological training for all projects that disturb over one acre of land within these areas. Based on Exhibit 7-10 of the Open Space and Conservation Element, the Project site is underlain entirely by Holocene Alluvium, which is not considered paleontologically sensitive (City of Suisun City 2015). In addition, the Project site consists primarily of engineered fill and pavement. As such, the Project would not disturb native soils or geologic units that could potentially contain paleontological resources. Therefore, the Project would not directly or indirectly destroy a paleontological resource or site or unique geologic figure. The impact would be less than significant.

4.2.8 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 (USEPA 2022). These three sources are also the top contributors of GHG emissions in California (CARB 2022).

REGULATORY BACKGROUND

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 levels 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 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 SB 32, the annual 2030 statewide target emissions level for California is 260 MMTCO2e.

CEQA Air Quality Guidelines

The BAAQMD CEQA Air Quality Guidelines are intended to serve as a guide for those who prepare or evaluate air quality impact analyses for projects and plans in the San Francisco Bay Area. The City of Suisun City and other jurisdictions in the San Francisco Bay Area Air Basin utilize the thresholds and methodology for assessing GHG impacts developed by BAAQMD within the CEQA Air Quality Guidelines. The guidelines include information on legal requirements, BAAQMD rules, methods of analyzing impacts, and recommended mitigation measures.

Solano County Climate Action Plan (2011)

The County of Solano developed the Climate Action Plan (CAP) to address climate change and reduce the community's GHG emissions at the local level. The CAP acknowledges that although climate change is a global problem, many strategies to both adapt to a changing climate and reduce harmful GHG emissions are best enacted at the local level. The CAP recommends 31 measures and 94 implementing actions that the community can take to reduce both emissions and community-wide contributions to global climate change.

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

BAAQMD has adopted thresholds of significance that were designed to establish the level at which GHG emissions would cause significant environmental impacts under CEQA. The thresholds are included in the 2022 CEQA Air Quality Guidelines (BAAQMD 2022). The General Plan discusses GHGs but does not contain specific policies pertaining to GHG emissions.

The Project would result in GHG emissions from temporary construction-related activities, including operation of heavy equipment, use of trucks, worker trips, site preparation, and trenching. Direct long-term operational emissions would include vehicular traffic during occasional maintenance activities.

The BAAQMD does not have an adopted threshold of significance for GHG emissions. The BAAQMD's approach to developing thresholds of significance for GHG impacts is to use a "fair share" approach to determine whether an individual project's GHG emissions would be cumulatively considerable. If a project would contribute its "fair share" of what is needed to achieve Statewide long-term GHG reduction goals, the impact of the Project's GHG emission would be less than significant. The BAAQMD has identified required design elements that development and transportation projects must incorporate into project plans in order for their impact to be considered less than significant. There are no design elements required for infrastructure projects, and therefore the project must only be consistent with the local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b) (BAAQMD 2022). Local GHG reduction plans include the Sonoma County 2011 CAP. As described below in Impact b), the Project would be consistent with GHG reduction strategies identified in these local plans, and therefore would not constitute a significant impact regarding GHG emissions. The impact from GHG 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?

No Impact

The Project site falls within the planning jurisdiction of the BAAQMD CAP and the Sonoma County CAP. As discussed in Section 4.2.3 Air Quality, Project construction and operation would not conflict with the CAP. The CAP does not specifically address stormwater infrastructure, but contains general goals of maintaining infrastructure to increase efficiency and reduce waste. The

Project would align with goals identified in the CAP because it would rehabilitate existing stormwater infrastructure to address flood risks for the surrounding community, improve water quality, and increase wildfire resilience, therefore increase the efficiency of the stormwater infrastructure. The new infrastructure would require less maintenance than the existing infrastructure, and would therefore reduce vehicle trips and GHG emissions associated with maintenance of the stormwater infrastructure. The Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. No impact would occur.

4.2.9 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 site?	☐	☐	☐	☒
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 review of the State Water Resources Control Board (SWRCB) GeoTracker database and Department of Toxic Substances Control (DTSC) EnviroStor database indicated that there are no listed hazardous materials sites within the Project site. The nearest listed site is at 1112 Kellogg Street, located approximately 0.20 miles north of the Project site. The listing is for a leaking underground storage tank cleanup site, and the case was closed in 1995 (SWRCB 2024, DTSC 2024).

REGULATORY SETTING

City of Suisun City Emergency Evacuation Plan

The City of Suisun City Emergency Evacuation Plan (Evacuation Plan) recognizes three levels of evacuation: low-level (local), medium-level (partial), and high-level (multi-zone or complete). The type of evacuation depends the type of hazard or threat that occurs. Threats involving hazardous materials, wildlife, flooding, tsunami, and gas or power incidents, generally require medium-level to high-level evacuations. The Evacuation Plan also establishes evacuation pick up points and evacuation zones.

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 would 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 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. Workers who are handling hazardous materials are required to adhere to all OSHA and Cal/OSHA health and safety requirements. Hazardous materials must be transported to and from the Project site in accordance with the Resource Conservation and Recovery Act (RCRA) and United States Department of Transportation regulations and disposed of in accordance with RCRA at a facility that is permitted to accept the waste. With compliance with existing regulations, the Project would not create a significant hazard to the public or the environment through the routing use, transport, or disposal of hazardous materials. During construction, the Project would implement a SWPPP which would include measures to prevent the release of hazardous materials into the environment, and proper procedures for cleanup should any spill occur. Therefore, the Project would not create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials. The impact would be less than significant.

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

Less-than-Significant Impact

There are no schools located within one quarter mile of the Project site. The nearest school to the Project site is Crystal Middle School, located approximately 0.5 miles to the northeast. No impact would occur.

b) 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?

No Impact

The Project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (SWRCB 2024, DTSC 2024). No impact would occur.

c) 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 site?

No Impact

The Project site is not located within an airport land use plan, and there are no public airports within two miles of the Project site. No impact would occur.

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

Less-than-Significant Impact

The Project site is situated on the outskirts of Suisun City adjacent to the Suisun Marsh. In the event of an emergency, residents would generally evacuate northwest towards Interstate-80, away from the Suisun Marsh. The City's Evacuation plan does not show emergency evacuation routes; however, residents would use portions of Maple Street and Kellogg Street to evacuate the neighborhood in case of an emergency. Throughout Project construction, access to driveways would be maintained at all times, and one lane of travel would be maintained along all streets within the Project site. Residents along streets in the Project site, including Maple Street and Elwood Street, would also be able to use School Street to evacuate in case of an emergency, meaning that there are two routes for residents that lead towards Interstate-80. Residents would not be evacuating towards the Project site in any case of low-, medium-, or high-level evacuation. Therefore, Project construction would not conflict with any evacuation protocols detailed in the Evacuation Plan. Once construction is finished, the Project would provide better emergency response within the Project site by providing an emergency vehicle access road along the southern side of the Kellogg stormwater detention basin. Therefore, the Project would have a beneficial impact related to emergency response. The impact would be less than significant.

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

No Impact

The Project site is within a Local Responsibility Area for fire hazard severity (CalFire 2024). As discussed further in *Section 4.2.20, Wildfire,* the Project site is not within a high wildfire risk area as designated by the City or the County; however, the Project site has been subjected to wildfires in recent years which have destroyed homes adjacent to the Project site. One of the purposes of the Project is to improve community wildfire resilience by removing overgrown vegetation in the Kellogg stormwater detention basin and constructing an emergency vehicle access road along the south side of the basin. These improvements are anticipated to lower the

risk of wildfires coming from the Suisun Marsh from spreading to homes and properties adjacent to the Project site. Therefore, the Project would have a long-term beneficial impact on community wildfire resilience and would not expose people or structures to significant risks associated with wildland fires. No impact would occur.

4.2.10 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 within the Suisun Basin, which includes various creeks that drain to the Suisun Bay. While there are no waterbodies within the Project site, the site is adjacent to the Suisun Slough, the nation's largest brackish water marsh and largest contiguous wetland on the Pacific Coast of North America.

REGULATORY BACKGROUND

Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin

The Basin Plan sets narrative and numerical water quality objectives for the San Francisco Bay Region. Numerical objectives typically describe pollutant concentration, physical and chemical conditions of water, and the toxicity of water to aquatic organisms. The Basin Plan establishes beneficial uses for select water bodies within the planning area. Beneficial uses for Suisun Slough include:

- Commercial and sport fishing,
- Estuarine habitat,
- Fish migration,
- Navigation,
- Preservation of rare and endangered species,
- Fish spawning,
- Wildlife habitat,
- Warm freshwater habitat,
- Water contact recreation, and
- Noncontact water recreation (San Francisco Bay RWQCB 2017).

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

During construction, the Project would include ground-disturbing activities which could release sediment into waterways if not controlled properly. The Project would be required to prepare a SWPPP and Erosion Control Plan in order to comply with Construction General Permit requirements. The purpose of these plans is to implement measures to prevent pollutant release and minimize erosion during construction. With implementation of measures contained in the SWPPP and Erosion Control Plan, the Project would not violate any water quality standards or waste discharge requirements, or substantially degrade surface or groundwater quality during construction. The impact would be less than significant.

The only waterbody within the Project site is an engineered stormwater detention basin, which captures stormwater runoff from the neighborhood drainage area. The water within the basin is treated by the Kellogg PS to improve its quality before it is pumped out of the east end of the basin and is discharged to Suisun Slough. A tide gate prevents water from the Slough from flowing back towards the PS. One of the purposes of the Project is to improve the quality of stormwater runoff by rehabilitating and upgrading the existing stormwater infrastructure on-site and adding GSI throughout the Project site. Flooding of the Project site can cause pollution and sediment to enter waterways, which reduces water quality. The addition of GSI would help reduce flooding of the neighborhood drainage area which would improve water quality by reducing pollutants in waterways. Therefore, the Project would have a long-term beneficial impact on water quality. No impact would occur.

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 would not use groundwater during construction or operation. The City is supplied water by the Suisun-Solano Water Authority (SSWA), which does not use groundwater as part of its water supply (SSWA 2023). Therefore, the Project would not substantially decrease groundwater supplies. The Project would not increase the existing impervious surface area on the Project site; therefore, the Project would not substantially interfere with groundwater recharge. No impact would occur.

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;

Less-than-Significant Impact

The Project would include ground disturbing activities and vegetation removal within and around the Kellogg stormwater detention basin, which could result in minor erosion of soils within the basin. However, as described in *Section 4.2.8, Geology and Soils,* the Project would implement a SWPPP during construction which would contain measures to control erosion, such as covering soil stockpiles and utilizing erosion control fencing or blankets. Once vegetation removal is complete, native species would be replanted within the basin, which would provide more stability to the surface soils and prevent excessive erosion. Therefore, the Project would not result in substantial erosion or siltation on-or-off site. The impact would be less than significant.

(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?

No Impact

One of the purposes of the Project is to improve stormwater drainage and reduce flooding within and around the Project site. The Project would include the installation of GSI throughout the Project site in order to improve stormwater collected from the neighborhood drainage area. Therefore, the Project would not substantially increase the rate or amount of surface runoff, create runoff water that would exceed the capacity of existing or planned stormwater drainage systems, or impede flood flows. No impact would occur.

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

Less-than-Significant Impact

The Project site is not within a tsunami or seiche zone; however, the entire Project site is within a Zone AE flood zone, which means that the area is subject to inundation by the one percent annual chance flood event (FEMA 2024). Project construction work would occur during the dry

season; therefore, flooding at the site during construction, which could risk release of pollutants into nearby waterways, is not anticipated to occur. Furthermore, as described in *Threshold a)* above, the Project would be required to implement a SWPPP which would contain measures to reduce the risk of pollutant release. As such, the Project would not risk release of pollutants due to project inundation during construction. During operation, the Project site would remain similar to existing conditions. The Project would not change the land use of the site or install any new structures which would risk release of pollutants due to Project site inundation. The impact would be less than significant.

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

No Impact

The applicable water quality control plan for the Project site is the Basin Plan, which identifies specific beneficial uses and water quality objectives for each of the surface waters and groundwater management zones in the planning area, including for Suisun Slough. As described above in *Threshold a),* the Project would implement a SWPPP and Erosion Control Plan, which would ensure that construction activities on the Project site would not violate any water quality objectives. As described above in *Threshold a),* operation of the Project would reduce flooding of the Project site, and therefore, would have a long-term beneficial impact on water quality. As such, the Project would support objectives of the Basin Plan. No impact would occur.

The Project site is within the Suisun-Fairfield Valley groundwater basin, which is designated by the Sustainable Groundwater Management Act as a low-priority basin (SWRCB "Suisun-Fairfield Groundwater Subbasin (2-3)"). Sustainable groundwater management plans are only required to be prepared for medium- and high-priority basins; therefore, there is no groundwater management plan for the Suisun-Fairfield Valley basin. Therefore, the Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. No impact would occur.

4.2.11 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 within the Residential Low Density zoning district and within the planning area of the DWSP. The DWSP identifies the Project site as part of the Cordelia Gateway District, and the existing land use as single-family residential (City of Suisun City 2016).

DISCUSSION OF IMPACTS

a) Physically divide an established community?

No Impact

The Project would include improvements to the existing Kellogg stormwater detention basin, Kellogg PS, and existing streets and intersections. The Project would not install any new permanent aboveground structures, aside from street trees at proposed GSI locations. The operational use of the Project site would remain the same after Project construction is complete. The Project would not result in a change in the existing land use of the site. Therefore, the Project would not physically divide an established community. No impact would occur.

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 Project would not change the overall appearance or existing land use of the site; therefore, the Project would not conflict with any land use plan, policy, or regulation. After construction is finished, the Project site would appear similar to existing conditions. No impact would occur.

4.2.12 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

The City's General Plan and DWSP do not mention mineral resources. The nearest mineral resource to the Project site is Nelson Hill Quarry, located approximately 4.25 miles west of the Project site (CDOC 2016).

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 resources that are of value to the region or state within the vicinity of the Project site. The City's General Plan does not identify any mineral resources within the City. Therefore, the Project would not impact any mineral resources that are of local or regional value. No impact would occur.

4.2.13 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 site to excessive noise levels?	☐	☐	☐	☒

BACKGROUND INFORMATION

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 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 7.

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:

- A 3-dBA increase is considered barely noticeable.
- A 5-dBA increase is considered clearly noticeable, but not dramatic.
- A 10-dBA increase is perceived as a doubling in loudness.

Table 7. 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

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. Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Vibration amplitudes are usually expressed as either peak particle velocity (PPV) or the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous peak of the vibration signal. 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. The RMS of a signal is the average of the squared

amplitude of the signal and is more appropriate for evaluating human response to vibration. PPV is normally described in units of inches per second (in/sec) and RMS is often described in vibration decibels (VdB).

ENVIRONMENTAL SETTING

Existing Ambient Noise Conditions

The primary source of noise in the Project vicinity is traffic along Cordelia Street, which is approximately 550 feet north of the northern portion of the Project site. According to the City of Suisun City 2035 General Plan, the estimated noise level associated with traffic along Cordelia Street is 60 dBA (City of Suisun City 2015). Therefore, noise levels generated along Cordelia Street would be less than 60 dBA at the Project site.

The Project is located about 4.5 miles east of the Travis Air Force Base. Based on the 2002 noise contours included in the 2035 General Plan, the Project is located approximately 1.5 miles from the 60 CNEL contour associated with the Travis Air Force Base. Therefore, noise levels generated by the Travis Air Force Base would be less than 60 CNEL at the Project site.

The Project is located 1,400 feet from the Union Pacific Railroad Overland Route. Based on the 2010 contours included in the 2035 General Plan, the Project is located approximately 1,000 feet west from the 60 dBA contour boundary associated with the railroad. Therefore, noise levels generated by the railroad would be less than 60 dBA at the Project site.

Sensitive Receptors

Noise-sensitive receptors are locations where people are more susceptible to elevated noise levels than others due to the amount of noise exposure and the types of activities typically involved. Sensitive receptors include, but are not limited to residences, schools, places of worship, hospitals, convalescent homes, hotels, and libraries. Vibration-sensitive receptors are locations where people are more susceptible to the adverse effects of vibration. These include residences and other buildings where people normally sleep, as well as buildings that have the potential for activity interference (e.g., schools and places of worship). In certain situations, vibration also can cause structural damage. Noise and vibration-sensitive receptors are located adjacent to the Project site along Maple Street, School Street, and Kellogg Street.

REGULATORY SETTING

Federal Transit Administration

The Federal Transit Administration (FTA) has developed a general construction noise threshold of 90 dBA Leq at the nearest noise-sensitive receptor. According to the FTA, if the combined noise level in one hour from the two noisiest pieces of equipment exceeds the 90 dBA threshold at a residential land use (or other noise-sensitive receptors), then there may be a substantial adverse reaction.

The FTA has developed vibration thresholds to prevent disturbances to (i.e., annoyance of) building occupants based on the frequency of a vibration event as shown in Table 8 (FTA 2018). Vibrations that are equal to or exceed the vibration thresholds could result in potential

disturbance to people or activities. The FTA thresholds of 80 VdB are used in this analysis to evaluate disturbance to residences and buildings where people normally sleep.

Table 8. Vibration Thresholds for Disturbance to Building Occupants

LAND USE	MAXIMUM RMS VELOCITY (VdB)		
	FREQUENT EVENTS	OCCASIONAL EVENTS	INFREQUENT EVENTS
Buildings where vibration would interfere with operations	65	65	65
Residences and buildings where people normally sleep	72	75	80
Institutional land uses with primarily daytime use	75	78	83

Note: Frequent events = more than 70 events per day; Occasional events = 30 - 70 events per day; Infrequent events = less than 30 events per day.
Source: FTA 2018

California Department of Transportation

The California Department of Transportation (Caltrans) has developed vibration thresholds based on PPV values to evaluate the potential impact of construction vibration on structures (Table 9) (Caltrans 2020). Construction vibrations that are equal to or exceed the vibration thresholds could result in potential damage to structures. For frequent intermittent vibratory sources during construction (e.g., vibratory compaction equipment), Caltrans recommends a threshold of 0.3 in/sec for older residential structures.

Table 9. Vibration Thresholds for Damage to Structures

LAND USE	MAXIMUM PEAK PARTICLE VELOCITY (in/sec)	
	TRANSIENT SOURCE	CONTINUOUS OR FREQUENT INTERMITTENT SOURCE
Extremely fragile historic buildings, ruins	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern commercial buildings	2.0	0.5

Note: Transient sources create a single isolated vibration event (e.g., blasting). Continuous/frequent intermittent sources include impact pile drivers, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.
Source: Caltrans 2020.

City of Suisun City 2035 General Plan

Based on policies presented in the Noise Element of the 2035 General Plan, the recommended exterior noise exposure threshold is 65 dB CNEL in residential areas. The Noise Element also includes policies to prevent noise levels from exceeding 65 dB CNEL from non-residential noise sources. However, the 2035 General Plan does not provide substantial guidance for noise levels generated during construction.

ASSESSMENT METHODOLOGY

Due to the lack of local regulations or policies related to construction noise, the FTA's recommended noise threshold of 90 dBA Leq is used to evaluate potential impacts to nearby noise-sensitive receptors during Project construction. For construction vibration, the Caltrans threshold of 0.3 in/sec for older residential buildings is used to evaluate potential structural impacts at nearby sensitive receptors. The FTA thresholds of 80 VdB is used to evaluate disturbance to residences and buildings where people normally sleep.

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

The primary source of noise during construction would be off-road equipment activities on the Project site. Construction noise levels would vary from day-to-day, depending on the number and type of equipment being used, the types and duration of activity being performed, the distance between the noise source and the receptor, and the presence or absence of barriers, if any, between the noise source and receptor. Pile driving, which can generate extreme levels of noise, is not proposed as part of the Project.

Project construction is anticipated to begin in April of 2025 and would last for approximately 7.5 months. Information regarding the types of construction equipment that would be used for the various phases of the Project was provided by the applicant. In accordance with guidance from the FTA, daytime construction noise impacts were evaluated by quantifying the maximum noise levels that would result from the simultaneous operation of the two noisiest pieces of equipment near the perimeter of the Project site adjacent to residences, which are the closest sensitive receptors. During Project construction, off-road equipment was assumed to be operated as close as approximately 30 feet from adjacent residences. Detailed calculations and assumptions for estimating noise levels at the nearest sensitive receptors are provided in Appendix G.

As shown in Table 10, Project construction could potentially generate noise levels as high as 88 dBA Leq at nearby noise-sensitive receptors, which is below the FTA's recommended threshold of 90 dBA Leq. Therefore, Project construction would not generate a substantial temporary increase in ambient noise levels in the Project vicinity and this impact would be less than significant.

Table 10. Potential Noise Impact at the Nearby Sensitive Receptors from Project Construction

SOURCE	MAXIMUM NOISE LEVEL (dBA Leq)	NOISE THRESHOLD (dBA Leq)	EXCEED TRESHOLD?
Construction	90	90	No

Source: Noise calculations are included in Appendix F.

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

Less-than-Significant Impact

Construction can result in varying degrees of ground vibration depending on the type of equipment and activity. The primary types of equipment that could generate substantial ground vibration during Project construction and the associated vibration calculations are included in Appendix G. To evaluate the Project's potential vibration effects on nearby sensitive receptors, it was assumed that the equipment that could generate substantial ground vibration would be used near the Project boundary as close as approximately 30 feet from adjacent residences.

As shown in Table 11, Project construction could potentially generate vibration levels as high as 92 dB at nearby vibration-sensitive receptors, which is above the 80 VdB disturbance threshold. However, Project construction activities would not be performed at night when people typically sleep and could be disturbed by vibration. Therefore, temporary Project construction activities adjacent to residences would have a less-than-significant impact related to excessive vibration disturbance.

As shown in Table 12, Project construction could potentially generate vibration levels as high as 0.16 in/sec at nearby vibration-sensitive receptors, which is below the 0.3 in/sec structural damage threshold. Therefore, temporary Project construction activities would not generate excessive vibration levels with the potential to damage adjacent buildings and this impact would be less than significant.

Table 11. Potential Vibration Disturbance Impact at Nearby Sensitive Receptors from Project Construction

GROUND VIBRATION EQUIPMENT	MAXIMUM VIBRATION LEVEL (VdB)	DISTURBANCE THRESHOLD (VdB)	EXCEED TRESHOLD?	NIGHTTIME CONSTRUCTION?
Loaded Trucks	84	80	Yes	No
Vibratory Roller	92	80	Yes	No

Source: Vibration calculations included in Appendix F.

Table 12. Potential Vibration Damage Impact at Nearby Sensitive Receptors from Project Construction

GROUND VIBRATION EQUIPMENT	MAXIMUM VIBRATION LEVEL (in/sec)	DAMAGE THRESHOLD (in/sec)	EXCEED THRESHOLD?
Loaded Trucks	0.11	0.3	No
Vibratory Roller	0.16	0.3	No

Source: Vibration calculations included in Appendix F.

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 site to excessive noise levels?

No Impact

The Project is not located within the vicinity of a private or an airport land use plan, or within two miles of a public airport or a public use airport. The Travis Air Force base is located approximately 4.5 miles east of the Project. Therefore, the Project would have no impact related to the exposure of people to excessive noise levels from aircrafts.

4.2.14 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

As of 2022, the population of Suisun City was approximately 28,950 (U.S. Census Bureau 2022). From 2000 to 2021, the City's average annual growth was 0.6 percent, for a total increase of 12.05 percent, which was about the middle point for growth among jurisdictions in the County (City of Suisun City 2023). The Association of Bay Area Governments (ABAG) has distributed 620 total units to the City for the 2023-2031 Regional Housing Needs Allocation. The Project site is within the Residential Low Density zoning district and is within a neighborhood that is identified by the DWR as a disadvantaged community.

DISCUSSION OF IMPACTS

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)?

No Impact

The purpose of the Project is to update existing stormwater infrastructure to prevent future flooding, improve water quality, and promote wildfire resilience. The proposed improvements to the stormwater infrastructure are not intended to serve population growth, but rather to protect existing property from flooding which may result from sea level rise or storm surges. The Project would not construct any homes or construct infrastructure which would induce substantial unplanned population growth. No impact would occur.

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

No Impact

The Project would not displace any people or housing or necessitate the construction of replacement housing. Access to existing properties would be maintained throughout Project construction and operation.

4.2.15 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 protection services within the Project vicinity are provided by the City of Suisun City Fire Department (SCFD), a combination career and volunteer fire department operating out of a single fire station. The SCFD station is located at 621 Pintail Drive, approximately two miles northeast of the Project site.

Police protection services within the Project vicinity are provided by the Suisun City Police Department. The Police Department has approximately nine public safety dispatchers, 16 patrol officers, two detectives, four patrol sergeants, and various other supervisors, managers, assistants, and commanders operating under the Chief of Police (Suisun City Police Department 2023). The department building is located at 701 Civic Center Boulevard, approximately 0.35 miles northeast of the Project site.

The nearest school to the Project site is Crystal Middle School, located approximately 0.5 miles to the northeast. Various other schools are located within two miles of the Project site, including Armijo High School, Crescent Elementary School, Suisun Elementary School, Virtual Academy of Fairfield-Suisun, Sheldon Academy of Innovative Learning, Anna Kyle Elementary School, Fairfield-Suisun Adult School, and Matt Garcia Career and College Academy.

The nearest parks to the Project site are Mike Day Memorial Park and Suisun Waterfront Park, which are situated approximately 0.5 miles north of the Project site.

The Suisun City Library is located at 601 Pintail Drive, approximately 1.90 miles northeast of the Project site.

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 construct any new governmental facilities or alter any existing governmental facilities. As described in Section 4.2.14, Population and Housing, the Project would not result in population growth which would result in the need for new or physically altered governmental facilities. No impact would occur.

4.2.16 Recreation

Would the project:		*Potentially Significant Impact*	*Less than Significant 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

The nearest parks to the Project site are Mike Day Memorial Park and Suisun Waterfront Park, which are situated approximately 0.5 miles north of the Project site. A public boat launch is located adjacent to the eastern border of the Project site, off of Kellogg Street.

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?

No Impact

As described in *Section 4.2.14, Population and Housing,* the Project would not cause population growth which could increase the use of existing recreational facilities. The Project would not include any recreational facilities and would not increase the use of any existing recreational facilities. No impact would occur.

b) 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 not include or require the construction or expansion of recreational facilities. No impact would occur.

4.2.17 Transportation

Would the project:		*Potentially Significant Impact*	*Less than Significant 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 includes portions of Kellogg Street, Maple Street, and School Street, which are part of the City's ROW. All three streets are two-lane roads within a residential neighborhood. All intersections within the Project site are controlled by stop signs. Street parking is available along Maple Street and School Street, which changes the functional capacity of the two-lane roads to one-lane, in some areas.

REGULATORY SETTING

City of Suisun City General Plan

The City's General Plan designates all streets within the Project site as "local roadways," which provide access to abutting property and traffic movements within residential areas. Low traffic volumes and speeds on local roadways allow bicycles to travel safely in the traffic lanes without the need for separately designated bike lanes. Sidewalks are provided for pedestrians. The General Plan contains roadway standards for all types of roadways in the City, which include requirements for ROW width, on-street parking, lane width, and more. The General Plan also contains the following relevant policies related to transportation:

> **Policy T-1.1:** The City will review and condition developments to maintain LOS E or better during peak travel periods, as feasible.
>
> **Policy T-1.3:** The City will not require analysis of direct impacts to vehicular LOS for the purpose of CEQA compliance. The City acknowledges that Caltrans and other transportation agencies may require such analysis.
>
> **Policy T-1.6:** The City will design and operate streets and intersections to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities.

Policy T-1.9: The City will require new roads, intersections, and access points to be designed in accordance with City standards and avoid introducing any hazardous conditions.

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 City's General Plan is the only applicable plan addressing the circulation system. The City maintains LOS E standards for all intersections during peak travel hours. Under Policy T-1.3 of the General Plan, the city does not require analysis of direct impacts to vehicular LOS for the purpose of CEQA compliance. Therefore, a detailed LOS analysis is not required for the Project. The Project could cause temporary delays in intersections within the Project site, including the intersection of Maple and School Street, Kellogg and Maple Street, and Kellogg and Elwood Street during Project construction. However, these sites are in a residential neighborhood with low traffic volumes, so the intersections would still operate above LOS E. Project operation would have no impact on LOS within the Project site.

General Plan policy T-1.6 and T-1.9 require that the City design and operate street and intersections to enable safe access for all users, and for all transportation infrastructure to be designed in accordance with City standards. The Project will include updates to the transportation infrastructure, including replacing the pavement of the intersection of Maple Street and School Street, reconstructing and repaving the southern terminus of School Street, and updating pedestrian facilities in the Project site to be compliant with ADA standards. These upgrades would be consistent with City standards and would improve the existing transportation infrastructure on-site. Therefore, the Project would support General Plan policies related to improvements to the circulation system. The Project would not conflict with any other 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

CEQA Guidelines section 15064.3(b) describes criteria for analyzing transportation impacts based on vehicle miles traveled (VMT). For land use projects, VMT exceeding an applicable threshold of significance may indicate a significant impact. In accordance with the *Technical Advisory on Evaluating Transportation Impacts in CEQA*, Section 21099 of the 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 subdivision (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).

During construction, the Project would generate some temporary vehicle trips from workers commuting to the Project site and construction vehicles bringing materials to and from the site. The number of vehicle trips would not exceed 110 trips per day, which is OPR's screening

threshold for conducting a VMT analysis. Project operation would not cause an increase in vehicle trips, aside from occasional vehicles needed for maintenance activities, such as maintenance of the PS and landscaping. As such, 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)?

Less-than-Significant Impact

During construction, some work would occur within the City's ROW, which could temporarily elevate hazards due to reduced visibility from driveways and around intersections. The Project site is on the outskirts of a residential neighborhood with low driving speeds. In addition, the Project would utilize signage and flaggers as necessary to direct traffic around work areas. Therefore, construction work within roadways would not substantially increase hazards within the Project site.

Operation of the Project would not introduce any hazards due to geometric design features or incompatible uses. The Project would rehabilitate existing on-site infrastructure, including transportation infrastructure, and would not create any new aboveground structures which could introduce a circulation hazard. The Project would improve the overall safety of transportation infrastructure within the Project site by installing ADA-compliant pedestrian facilities and reconfiguring and repaving intersections at locations of new GSI elements within the Project site. Therefore, the Project would not increase hazards due to a geometric design feature or incompatible use. The impact would be less than significant.

d) Result in inadequate emergency access?

No Impact

During construction, the Project would include some work within the City's ROW, which could potentially cause delays for emergency vehicles accessing residences within the Project site. The main portion of work within the ROW would include reconfiguration of the southern end of School Street and repaving of the intersection of Maple and School Street. This area is at the very end of the neighborhood; therefore, construction in this area would not block emergency vehicles from accessing any residences. The Project would utilize proper signage and flaggers, if necessary, to ensure that emergency vehicle access would be maintained at all times. The Project would also create a new emergency vehicle access road along the southern border of Kellogg stormwater detention basin to improve emergency vehicle access within the Project site. As such, the Project would have a beneficial impact on emergency access. No impact would occur.

4.2.18 Tribal Cultural Resources

Would the project:		*Potentially Significant Impact*	*Less than Significant 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

A discussion of the environmental setting as it pertains to tribal cultural resources can be found in *Section 4.2.5, Cultural Resources.*

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).

ASSESSMENT METHODOLOGY

As part of the Cultural Resources Study, Origer contacted the NAHC on March 26, 2024, to request a review of the Sacred Lands file for information on Native American cultural resources in the area of the Project site and to request a list of Native American contacts in this area. Letters were sent to the following groups:

- Cachil Dehe Band of Wintun Indians of the Colusa Indian Community
- Cortina Rancheria-Kletsel Dehe Band of Wintun Indians
- Indian Canyon Mutsun Band of Costanoan
- Grindstone Rancheria of Wintun-Wailaki
- Guidiville Indian Rancheria
- The Confederated Villages of Lisjan Nation
- Yocha Dehe Wintun Nation

The NAHC replied with a letter on April 5, 2024, that the Sacred Lands Files has no information about the presence of Native American cultural resources in the Project site.

On March 23, 2024, Origer sent an email was sent to the Tribal Historic Preservation Officer or appropriate representative of each tribal group associated with the Project site area.[4] The representatives were identified from a list previously provided by the NAHC for the area. On April 24, 2024, Yvonne Perkins, Tribal Historic Preservation Officer for the Yocha Dehe Winton, responded with a letter stating that the Project site is within their aboriginal territory and that they have a cultural interest in the Project. On September 1, 2022, Corrina Gould, Tribal Chair for the Confederated Villages of Lisjan Nation, responded with a letter stating that the Project site is within their geographic area and that they have a cultural interest in the Project. No other letters were received in response to Origer's outreach.

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

As described in Section 4.2.5, Cultural Resources, there are no documented resources within the Project site. Therefore, no impact to tribal cultural resources that are listed in the California Register or National Register would occur as a result of the Project. As described in Section 4.2.5, Cultural Resources, there is potential for unknown cultural resources, which may include tribal cultural resources, to be discovered during earth-disturbing construction activities, such as excavation and grading. As such, Mitigation Measure CUL-1 would be implemented, which requires that, if buried materials are encountered during Project construction, all soil disturbing work shall be halted within the immediate vicinity of the discovery until a qualified archaeologist makes a significance evaluation of the find(s) pursuant to Section 106 of the NHPA (36CFR60.4). If the qualified archeologist determines that the find is eligible for inclusion on the National or California Register, the archaeologist will make recommendations for appropriate methods of treatment for the find, which shall be implemented by the Project proponent. In addition, Mitigation Measure CUL-2 would also be implemented, which includes measures for the proper treatment of any human remains which could be accidentally uncovered during construction.

[4] This outreach did not constitute formal consultation under AB 52.

Implementation of these measures would ensure that the Project would not cause a substantial adverse change in the significance of a tribal cultural resource.

AB 52 (Chapter 532, Statutes 2014) requires a direct consulting relationship between Tribes and the lead agency. The District has initiated Tribal consultation pursuant to AB 52 by sending letters to The Confederated Villages of Lisjan Nation and the Yocha Dehe Wintun Nation, which have previously requested to be on the District's notification list for any projects that they undertake. The letters were sent on November 21, 2024. A response from the Confederated Villages of Lisjan Nation was received on December 13, 2024, indicating that the Project site does not lie within the tribe's traditional territory, and that they will defer to other tribes affiliated with the Project area. No response was received from the Yocha Dehe Wintun Nation within 30 days of sending the notification letters. Therefore, no tribes requested to consult on the Project pursuant to AB 52, and no further consultation actions were taken.

There are no known tribal cultural resources within the Project site. Mitigation Measures CUL-1 and CUL-2 would be implemented to ensure that the Project would not result in impacts to any archaeological resources, which may be tribal cultural resources, that could be uncovered during construction. The impact would be less-than-significant with mitigation incorporated.

4.2.19 Utilities and Service Systems

Would the project:		*Potentially Significant Impact*	*Less than Significant 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

Water in the City is supplied by SSWA, a joint powers authority between the City and the Solano Irrigation District. The City is responsible for local billing and requests for water and sewer service, and the Solano Irrigation District provides field service, capital maintenance, water delivery, and water treatment services (City of Suisun City 2024).

Sewer service in the City is provided by the Fairfield-Suisun Sewer District (lead agency), which is an independent special district established to manage local sewer issues and is governed by the city Councils of Suisun City and Fairfield. The City is responsible for billing and requests for sewer services (City of Suisun City 2024).

Electricity and natural gas services in the City are provided by PG&E. Solid waste services are provided by Solano Garbage Company (City of Suisun City 2024).

REGULATORY SETTING

Suisun-Solano Water Agency 2020 Urban Water Management Plan

The SSWA's Urban Water Management Plan (UWMP) provides an analysis of projected and historical water demands, water supplies, supply reliability and potential vulnerabilities, water shortage contingency planning, and demand management programs. The UWMP is required to be updated every five years in accordance with the 1983 California Urban Water Management Planning Act. The UWMP reports the projected water use in the planning area in five-year increments through 2045. Total projected annual water use is expected to decrease by approximately 100 million gallons by 2045.

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?

Less-than-Significant Impact with Mitigation Incorporated

The Project would include rehabilitation of the existing Kellogg PS and associated piping and would also construct new stormwater drainage facilities in the form of subsurface suspended pavement systems with street trees. Potential environmental effects of constructing the proposed storm drainage facilities are discussed throughout this IS/MND. *Section 4.2.21, Mandatory Findings of Significance,* describes the cumulative impacts of the Project. As described throughout this IS/MND, the Project would not result in any significant environmental impacts; all impacts would be mitigated to a less-than-significant level with implementation of mitigation measures described throughout this document. Therefore, the environmental effects of the proposed new and rehabilitated stormwater facilities included in the Project would be less than significant with mitigation incorporated.

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

During construction, the Project would require the use of water for construction activities such as watering soil stockpiles. This would not increase the existing demand for water within the City, it would be covered by the existing water supply. As described in *Section 4.2.14, Population and Housing,* the Project would not construct new housing or provide services which would encourage or support growth within the Project site. The Project would rehabilitate and construct new stormwater infrastructure, which would not increase the demand for water during future normal, dry, and multiple dry years. The Project would have no operational impact on water supply. 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

As discussed in *Section 4.2.14, Population and Housing,* the Project would not construct new housing or provide services which would encourage or support growth within the Project site. As such, the Project would not impact demand for wastewater treatment during construction or operation. No impact would occur.

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?

Less-than-Significant Impact

The Project would generate construction and demolition waste during construction, which would be disposed of properly at a facility that accepts such waste. Project operation would not cause an increase in solid waste generation. The impact would be less than significant.

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

Less-than-Significant Impact

Project construction would generate construction and demolition waste such as old piping and fixtures from the Kellogg PS, and old pavement from the intersection of School Street and Maple Street. The Project would comply with all Federal, State, and local management and reduction statutes and regulations related to solid waste. Waste from Project construction would be disposed of in accordance with all Federal, State, and local regulations. Therefore, the impact of the Project related to solid waste requirements would be less than significant.

4.2.20 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 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

The Project site is located in a Local Responsibility Area within the City of Suisun City. The site is not surrounded by any CALFIRE-designated fire hazard severity zones within the State Responsibility Area or Local Responsibility Area. However, as described in *Section 3.0, Project Description,* the Suisun Marsh and surrounding open spaces routinely catch fire, which increases wildfire susceptibility for nearby communities, including residences bordering the Project site. A wildfire event in June 2020 burned and destroyed several homes adjacent north of the Kellogg stormwater detention basin.

REGULATORY SETTING

Solano County Multi-Jurisdictional Hazard Mitigation Plan

The Solano County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) was prepared to identify hazards that pose threats to life and property within the County and develop mitigation strategies to reduce or eliminate long-term risks caused by natural disasters. Mitigation activities include those that are implemented in order to reduce or eliminate the impact of natural disasters, or those that are aimed at recovering after a disaster occurs.

DISCUSSION OF IMPACTS

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

Less-than-Significant Impact

As described in *Section 4.2.9, Hazards and Hazardous Materials, Threshold d),* the Project would not conflict with the City's Emergency Evacuation Plan. The Project would not conflict with any mitigation activities included in the County's MJHMP. The Project would support mitigation action WF-SC-36 of the MJHMP by improving emergency access for fire vehicles. The impact would be less than significant.

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

The Project site is located in a flat area along the outskirts of a residential neighborhood bordering Suisun Slough. The portion of the Project site containing the Kellogg stormwater detention basin is characterized by dense ruderal and annual grassland vegetation. Since residences bordering the Project site have been subject to wildfires in recent years, one of the purposes of the Project is to increase wildfire resilience for the surrounding residences. The Project would include removal of much of the overgrown vegetation within the stormwater detention basin for the purpose of reducing wildfire fuels. Removing and thinning vegetation in this area of the site would reduce the ability of wildfires from the open space areas to the south to spread north to residences bordering the Slough. The Project would also construct an emergency vehicle access road along the southern border of the Kellogg stormwater detention basin to improve access for fire vehicles. This would provide critical firefighting infrastructure which would also reduce wildfire threats in the Project site. Therefore, the Project would result in a long-term beneficial impact related to wildfire resilience and would not exacerbate wildfire risks. 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?

Less-than-Significant Impact

The Project would construct an emergency vehicle access road along the southern border of the Kellogg stormwater detention basin. Potential environmental effects of constructing the proposed access road are discussed throughout this IS/MND. As described throughout this IS/MND, the Project would not result in any significant environmental impacts; all impacts would be mitigated to a less-than-significant level with implementation of mitigation measures described throughout this document. Therefore, the environmental effects of the proposed emergency vehicle access road included in the Project would be less than significant with mitigation incorporated. The Project would not require any other associated infrastructure which may exacerbate fire risk or 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?

Less-than-Significant Impact

As discussed in *Section 4.2.7, Geology and Soils,* the Project site is located in a flat area and is not near any landslide hazard areas. As discussed in *Section 4.2.9, Hydrology and Water Quality,* the Project would not significantly alter drainage patterns on or around the Project site. The

proposed Project would include upgrades to existing stormwater drainage infrastructure, removal of vegetation within the Kellogg stormwater detention basin, and reconstruction of portions of roadways and sidewalks. These improvements would not expose people or structures to significant risks as a result of runoff, post-fire instability, or drainage changes. The impact would be less than significant.

4.2.21 Mandatory Findings of Significance

		Potentially Significant Impact	*Less than Significant 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

Implementation of the Project would not substantially degrade the quality of the environment, reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the range of a rare or endangered plant or animal. Implementation of mitigation measures presented in Section 4.2.4, Biological Resources, would mitigate potential significant impacts that could substantially degrade the quality of the environment or impact biological resources. As discussed in Section 4.2.5, Cultural Resources, and Section 4.2.18, Tribal Cultural Resources, impacts to potentially unknown resources within the Project site would be mitigated to a less than significant level by Mitigation Measure CUL-1 and Mitigation Measure CUL-2. Given the fact that potential impacts to biological and cultural resources would primarily occur during active construction (not long term) and that measures have been identified to reduce these temporary

impacts, impacts would not be considered significant. Impacts 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 were identified in the area. Therefore, the project would create a less than significant cumulative impact with respect to all environmental issues analyzed in this IS/MND.

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 cause potential temporary impacts to humans due to the generation of criteria air pollutants and fugitive dust emissions. However, the BAAQMD considers implementation of dust control measures during construction sufficient to reduce air quality impacts from fugitive dust to a less-than-significant level.

Noise and transportation impacts resulting from the Project were found to be less than significant, and no mitigation measures are required. As such, the Project would not have environmental effects that would cause substantial adverse effects on human beings. The impact would be less than significant.

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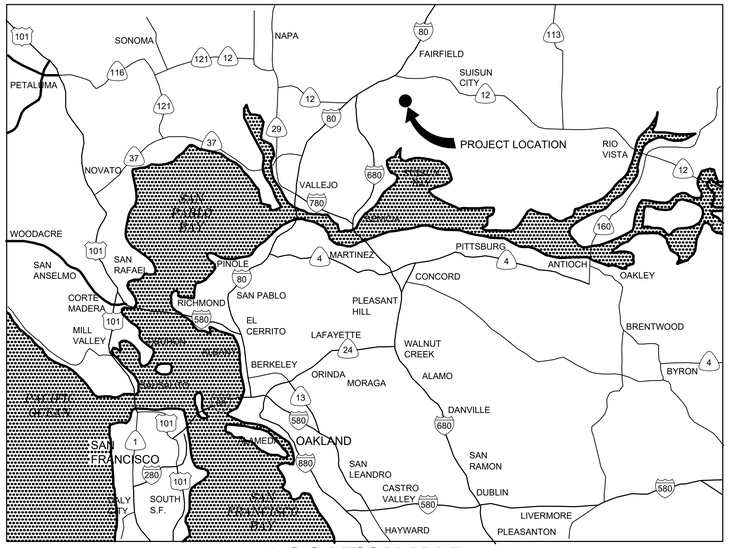
APPENDIX A. PRELIMINARY PROJECT PLANS

FAIRFIELD-SUISUN SEWER DISTRICT AND CITY OF SUISUN CITY

KELLOGG RESILIENCY PROJECT

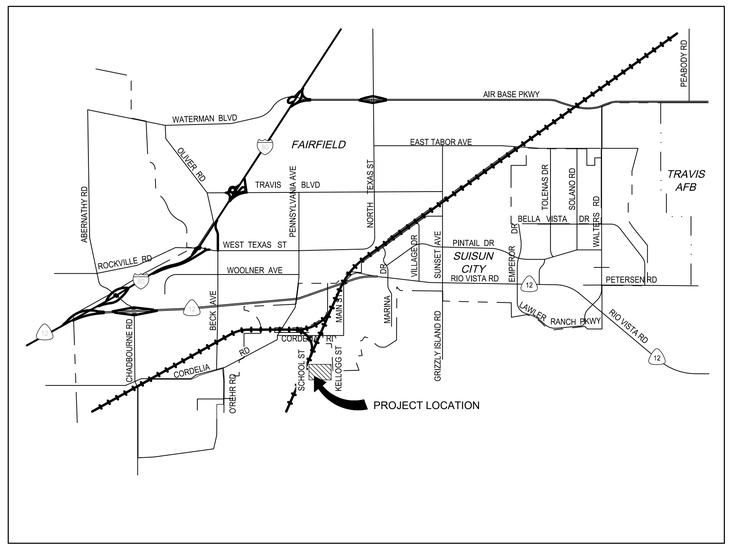
SUISUN CITY, CALIFORNIA

NOVEMBER 20, 2024



LOCATION MAP

NO SCALE



VICINITY MAP

NO SCALE

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2	G-02	GENERAL NOTES
3	G-03	KEY MAP
4	G-04	POLLUTION PREVENTION
5	G-05	EROSION CONTROL PLAN
6	G-06	STORM WATER MANAGEMENT PLAN
7	D-01	SCHOOL ST AND KELLOGG DEMOLITION
8	D-02	STORM WATER DETENTION BASIN DEMOLITION
9	C-01	SCHOOL ST (ELWOOD-MAPLE) GSI AND SD IMPROVEMENTS
10	C-02	SCHOOL STREET GSI AND SD IMPROVEMENTS
11	C-03	KELLOGG ST (SOUTH) GSI AND SD IMPROVEMENTS
12	C-04	KELLOGG ST (ELWOOD-MAPLE) GSI AND SD IMPROVEMENTS
13	C-05	STORM DRAIN CROSS SECTIONS
14	C-06	SCHOOL ST (ELWOOD-MAPLE) GRADING PLAN
15	C-07	SCHOOL ST(SOUTH) GRADING PLAN
16	C-08	KELLOGG ST (ELWOOD-MAPLE) GRADING PLAN
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34	IR 1.02	IRRIGATION PLAN KELLOGG STREET
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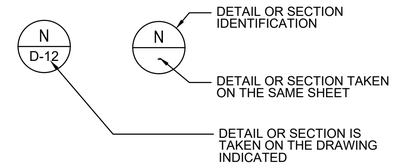
38	L2.1	LANDSCAPE PLANTING PROJECT OVERVIEW
39	L2.2	KELLOGG & SCHOOL STREET PLANTING PLAN
40	L2.3	KELLOGG BASIN PLANTING PLAN
41	L2.4	LANDSCAPE PLANTING NOTES AND DETAILS



DETAIL LEGEND

MICHAEL J RUDD, PE C51806
GEOSYNTEC CONSULTANTS, INC.

DATE

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NV: 800-227-2600

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GEOTECHNICAL ENGINEER

BY: _____ DATE: _____

GEOTECHNICAL ASPECTS OF GRADING PLAN HAVE BEEN REVIEWED FOR CONFORMANCE WITH THE INTENT OF THE RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL REPORT.

CITY OF SUISUN CITY
APPROVAL: DATE: _____

NOUAE VUE, CITY ENGINEER, CITY OF SUISUN

RCE No. _____ EXPIRATION _____

FAIRFIELD-SUISUN SEWER DISTRICT
APPROVED:

_____ DATE: _____

FIRST/LAST NAME
TITLE

REV	DATE	BY	DESCRIPTION
E			
D			
C			
B			
A			

DATE: mm/dd/yyyy
DESIGNED BY: xxx
DRAWN BY: xxx
CHECKED BY: xxx
JOB NUMBER: xxxx

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Geosyntec consultants
1340 TREAT BLVD, SUITE 208
WALNUT CREEK, CA 94597
(925) 357-6197

WARNING
0 1"
IF BAR DOES NOT MEASURE 1 INCH DRAWING IS NOT TO SCALE

FAIRFIELD-SUISUN SEWER DISTRICT
1010 Chadbourne Road
Fairfield, CA 94534-9700
(707) 429-8930 phone
(707) 429-1280 fax

FAIRFIELD-SUISUN SEWER DISTRICT AND CITY OF SUISUN CITY
KELLOGG RESILIENCY PROJECT

TITLE SHEET

SHEET CODE: G-01

SHEET 1 OF 41 SHEETS

C:\..\GEO-ACAD\ACADGEOSYNTEC\FAIRFIELD SUISAN SEWER DISTRICT_KELLOGG RESILIENCY PROJ\PROJECT FILES\CAD\01 - GREEN STREETS DESIGN\DWGS\SHEETS\G0R09201-G01.dwg

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GENERAL NOTES

1. AT LEAST FORTY-EIGHT (48) HOURS BEFORE STARTING ANY WORK ON OR NEAR AN EXISTING SEWER, NOTIFY THE FAIRFIELD-SUISUN SEWER DISTRICT (FSSD) AT 707-429-8930.
2. ALL CONNECTIONS TO EXISTING SEWER PIPES SHALL BE MADE AT A NEW OR EXISTING MANHOLE AND SHALL MATCH CROWN OF EXISTING PIPE, UNLESS APPROVED OTHERWISE BY FSSD.
3. OPENINGS IN EXISTING MANHOLES FOR NEW PIPES SHALL BE CORE DRILLED. A LINK-SEAL WITH 316-STAINLESS STEEL HARDWARE, OR APPROVED EQUAL, SHALL BE USED TO MAKE A WATERTIGHT SEAL AROUND THE PIPE.
4. NEW SEWERS THAT ENTER A NEW OR EXISTING MANHOLE SHALL MATCH THE CROWN ELEVATION OF EXISTING PIPES AND SHALL BE NO MORE THAN NINETY DEGREES (90°) FROM UPSTREAM DIRECTION. A NEW CHANNEL SHALL BE FORMED IN THE EXISTING MANHOLE TO PROVIDE A SMOOTH FLOW TRANSITION FROM THE NEW SEWER AND/OR STORMDRAIN TO THE EXISTING SEWER AND/OR STORMDRAIN CHANNEL.
5. NEW MANHOLES SHALL MEET REQUIREMENTS OF THE DISTRICT'S MANHOLE DETAIL; SEE CONSTRUCTION PLANS. CONTACT THE DISTRICT FOR MATERIAL, CONSTRUCTION AND TESTING SPECIFICATIONS. GROUT SHALL BE PLACED IN ALL HORIZONTAL JOINTS, INSIDE AND OUTSIDE. GROUT SHALL HAVE MINIMUM COMPRESSION STRENGTH OF 5000 PSI AND SHALL BE EQUAL TO BURKE NON-FERROUS, NON-SHRINK GROUT DAMP PACK MIX. AFTER ASSEMBLY AND WATERPROOFING, MANHOLES SHALL BE VACUUM TESTED BY CONTRACTOR AND WITNESSED BY FSSD.
6. SANITARY SEWERS AND/OR STORMDRAIN SHALL HAVE A MINIMUM DEPTH OF FOUR FEET (4') FROM TOP OF PIPE TO FINISHED GRADE UNLESS OTHERWISE NOTED BY FSSD.
7. VERTICAL CLEARANCE FROM DISTRICT SEWERS SHALL BE A MINIMUM OF 12-INCHES, FROM OUTSIDE WALL TO OUTSIDE WALL, FOR OPEN CUT CONSTRUCTION AND 24-INCHES FOR TRENCHLESS INSTALLATIONS. HORIZONTAL CLEARANCE FROM DISTRICT SEWERS SHALL BE A MINIMUM OF 10-FEET WALL-TO-WALL. UNDER SPECIAL CIRCUMSTANCES, HORIZONTAL CLEARANCE MAY BE REDUCED AT THE SOLE DISCRETION OF THE DISTRICT. ALL UTILITY CROSSINGS SHALL BE WITNESSED BY FSSD.
8. THE MAXIMUM DISTANCE BETWEEN MANHOLES SHALL BE FIVE HUNDRED FEET (500'), UNLESS OTHERWISE NOTED BY FSSD. CURVED SANITARY SEWERS AND/OR STORMDRAIN ARE NOT ALLOWED.
9. INSTALL JOINTS WITHIN TWO FEET (2') OF EACH END OF CONCRETE CAPS, CONCRETE ENCASEMENTS, STRUCTURES, OR MANHOLES TO MAINTAIN PIPE FLEXIBILITY TO PREVENT PIPE DAMAGE IN THE EVENT DIFFERENTIAL SETTLEMENT OCCURS.
10. IF PRECAST MANHOLE BASES ARE USED, A BELL END STUB MUST BE CAST IN AT BOTH UPSTREAM AND DOWNSTREAM DIRECTIONS, UNLESS OTHERWISE NOTED BY FSSD.
11. ALL CONTRACTORS WORKING ON DISTRICT FACILITIES SHALL DEVELOP A PROJECT SPECIFIC SEWER AND/OR STORMDRAIN OVERFLOW EMERGENCY RESPONSE PLAN (OERP). THE CONTRACTOR'S OERP SHALL BE SUBMITTED TO THE DISTRICT FOR REVIEW AND WRITTEN APPROVAL PRIOR TO START OF ANY WORK ON DISTRICT FACILITIES. ALL OF THE CONTRACTOR'S EMPLOYEES SHALL BE TRAINED ON THE PROJECT SPECIFIC OERP AND DOCUMENTATION OF THE TRAINING SHALL BE PROVIDED TO THE DISTRICT.
12. FLOW IN EXISTING SEWERS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL USE TEMPORARY BYPASS PIPING, TEMPORARY PUMPING, OR OTHER METHODS AS REQUIRED TO MAINTAIN EXISTING FLOW. THE CONTRACTOR SHALL SUBMIT A PROPOSED PLAN FOR MAINTAINING EXISTING FLOW TO THE FAIRFIELD-SUISUN SEWER DISTRICT AT LEAST TWO WEEKS IN ADVANCE OF STARTING WORK ON AN EXISTING SEWER.
13. CONTRACTOR SHALL HAND DIG IN VICINITY OF GAS LINES.
14. CONTRACTOR SHALL VERIFY, PROTECT, AND SUPPORT ALL UTILITIES ENCOUNTERED DURING EXCAVATION IN A MANNER ACCEPTABLE TO THE UTILITY OWNER.
15. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (USA) AT 1-800-227-2600 AT LEAST FOUR WORKING DAYS IN ADVANCE OF ANY PLANNED EXCAVATION FOR THIS PROJECT.
16. ALL MATERIALS, CONSTRUCTION METHODS AND TESTING ASSOCIATED WITH DISTRICT FACILITIES SHALL BE IN ACCORDANCE WITH DISTRICT STANDARDS. ALL MATERIALS SHALL BE SUBMITTED TO THE DISTRICT FOR REVIEW AND WRITTEN APPROVAL PRIOR TO INSTALLATION. MATERIALS INSTALLED WITHOUT WRITTEN APPROVAL MAY BE REJECTED. CONTACT THE DISTRICT FOR DISTRICT STANDARD SPECIFICATIONS AND SUBMITTAL REQUIREMENTS.
17. CONTRACTOR SHALL MAINTAIN A SET OF ACCURATE AS-BUILT DRAWINGS ON-SITE THAT ARE UPDATED WEEKLY AT A MINIMUM. CONTRACTOR SHALL TURN OVER COMPLETED RECORD DRAWINGS TO THE DISTRICT UPON FINAL INSPECTION PRIOR TO DISTRICT ACCEPTANCE.
18. ALL WORK ON DISTRICT FACILITIES SHALL BE INSPECTED AND ACCEPTED IN WRITING BY THE DISTRICT. WORK ON DISTRICT FACILITIES SHALL BE WARRANTED IN WRITING FOR ONE YEAR FROM FINAL WRITTEN ACCEPTANCE.
19. ALL CONTRACTORS SHALL POSSESS UP TO DATE CONFINED SPACE CERTIFICATION.

TRENCHING NOTES

1. TRENCH SHALL BE SPECIFICALLY DESIGNED FOR PIPE MATERIAL TO BE USED.
2. ALL TRENCH MATERIALS AND THEIR ASSOCIATED COMPACTION REQUIREMENTS SHALL BE BASED UPON RECOMMENDATION OF THE GEOTECHNICAL REPORT AND PIPE MANUFACTURER.
3. TRENCH ZONE MATERIALS AND COMPACTION SHALL MEET THE REQUIREMENTS OF THE CITY OF FAIRFIELD/CITY OF SUISUN CITY/SOLANO COUNTY, AS APPLICABLE.
4. NO NATIVE MATERIALS SHALL BE USED IN PIPE ZONE OR BELOW UNDER ANY CIRCUMSTANCES. NATIVE MATERIALS MAY NOT BE USED WITHIN THE TRENCH ZONE (ABOVE 12" ABOVE TOP OF PIPE) WITHOUT WRITTEN APPROVAL FROM THE DISTRICT, GEOTECHNICAL ENGINEER, AND CITY OF FAIRFIELD/CITY OF SUISUN CITY/SOLANO COUNTY, AS APPLICABLE.
5. PAVEMENT, PAVEMENT BASE, AND COMPACTION REQUIREMENTS SHALL BE PER REQUIREMENT OF THE CITY OF FAIRFIELD/CITY OF SUISUN CITY/SOLANO COUNTY, AS APPLICABLE.
6. VOID CREATED WHEN SHEETING IS REMOVED SHALL BE BACKFILLED WITH TRENCH MATERIAL AS SHEETING IS REMOVED.
7. IF FULL TRENCH SHEETING IS NOT USED, SLOPE TRENCH IN ACCORDANCE WITH OSHA. SLOPED EXCAVATIONS SHALL NOT BE PERMITTED UNLESS APPROVED BY THE DISTRICT. SLOPED EXCAVATIONS WILL ONLY BE CONSIDERED IN NON-PAVED AREAS.
8. EXCAVATE UNSUITABLE SUBGRADE MATERIAL BELOW EXCAVATION GRADE TO OBTAIN A FIRM AND STABLE BASE. MAINTAIN WATER LEVEL BELOW PIPE LAYING OPERATIONS. THE OVER-EXCAVATED AREA SHALL BE BACKFILLED WITH COARSE BEDDING AND SHALL BE WRAPPED TOGETHER WITH THE TRENCH COARSE BEDDING MATERIAL IN GEOTEXTILE FABRIC, AS NOTED ABOVE. OVER-EXCAVATION SHALL BE AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
9. TYPICAL TRENCH DIMENSIONS:
   ID = PIPE INSIDE DIAMETER; I.E., NOMINAL PIPE SIZE, INCHES
   OD = PIPE OUTSIDE DIAMETER, INCHES
10. PROTECT ALL EXISTING PIPES IN VICINITY OF TRENCH.
11. WHERE EDGE OF GUTTER IS WITHIN 3 FEET OF SAW CUT, REMOVE REMAINING EXISTING AC PAVING AND REPLACE WITH NEW AC PAVING.
12. NO JETTING OF TRENCH MATERIALS SHALL BE PERMITTED.
13. PIPE BEDDING OR AGGREGATE BASE MATERIAL SHALL NOT BE PLACED IN LIFTS GREATER THAN 8". CONTRACTOR SHALL DEMONSTRATE THAT SPECIFIED COMPACTION CAN BE ACHIEVED WITH 8" LIFTS THROUGH DENSITY TESTS.
14. IF THE MAXIMUM TRENCH WIDTH IS EXCEEDED DURING CONSTRUCTION, CONTACT THE DISTRICT IMMEDIATELY FOR ADDITIONAL REQUIREMENTS TO BE IMPLEMENTED BY THE CONTRACTOR.
15. PROVIDE MECHANICAL COMPACTION TO MEET REQUIREMENTS OF CITY OF FAIRFIELD/CITY OF SUISUN CITY/SOLANO COUNTY.
16. FINAL MATERIAL REQUIREMENTS IN UNPAVED AREAS SHALL BE PER THE RECOMMENDATIONS OF THE CITY OF FAIRFIELD/ CITY OF SUISUN/SOLANO COUNTY, AS APPLICABLE.
17. WHERE ADEQUATE COMPACTION CANNOT BE ACHIEVED ABOVE CROWN OF PIPE DUE TO OBSTRUCTION OR OTHER CONDITIONS. REPLACE PIPE ZONE BACKFILL AND/OR TRENCH ZONE BACKFILL WITH CDF AS DIRECTED BY THE DISTRICT.
18. PRIOR TO TRENCHING, CONTACT USA NORTH BY CALLING 811.
19. BLASTING OF EXCAVATION MATERIALS IS NOT PERMITTED.

DEWATERING NOTES

1. EXCAVATIONS SHALL BE MAINTAINED IN A DRY CONDITION DURING THE CONSTRUCTION PERIOD. IF GROUNDWATER, SEWAGE OR RAINWATER IS ENCOUNTERED IN EXCAVATIONS, THEN DEWATERING SHALL BE EMPLOYED TO REMOVE OR CONTROL INFLOWS. WATER SHALL BE LOWERED AND MAINTAINED TO LEVELS BELOW THE BOTTOMS OF EXCAVATIONS. DEWATERING FOR FACILITIES SHALL COMMENCE WHEN GROUNDWATER IS FIRST ENCOUNTERED, AND SHALL BE CONTINUOUS UNTIL FACILITIES ARE FULLY INSTALLED.
2. (FOR MANHOLES AND STRUCTURES ONLY) NO CONCRETE OR MASONRY, INCLUDING FOUNDATIONS, OR FLOORS SHALL BE LAID IN WATER, NOR SHALL WATER BE ALLOWED TO RISE OVER THEM UNTIL THE CONCRETE OR MORTAR HAS SET AT LEAST 24 HOURS. WATER SHALL NOT BE ALLOWED TO RISE UNEQUALLY AGAINST WALLS FOR A PERIOD OF 28 DAYS.
3. (FOR PIPELINES ONLY) ALL PIPELINES SHALL BE INSTALLED IN TRENCHES FREE FROM STANDING WATER AND SHALL REMAIN DRY UNTIL COMPLETION OF TRENCH BACKFILL.
4. DEVELOP SUBSTANTIALLY DRY AND STABLE SUBGRADES FOR SUBSEQUENT EARTHWORK COMPACTION AND CONSTRUCTION OPERATION.
5. PREVENT THE LOSS OF FINES, SEEPAGE, BOILS, QUICK CONDITIONS, OR SOFTENING OF THE FOUNDATION SOILS.
6. MAINTAIN STABILITY OF SIDES AND BOTTOMS OF EXCAVATIONS.
7. IF FOUNDATION SOILS ARE DISTURBED OR LOOSENED BY THE UPWARD SEEPAGE OF WATER OR AN UNCONTROLLED FLOW OF WATER, THE AFFECTED AREAS SHALL BE EXCAVATED AND REPLACED WITH SUITABLE MATERIALS UNTIL STABLE BOTTOM CONDITIONS ARE ACHIEVED.
8. DEWATERING SHALL, AT ALL TIMES, BE CONDUCTED IN SUCH A MANNER AS TO PRESERVE THE UNDISTURBED BEARING CAPACITY OF THE SUBGRADE SOILS AT THE PROPOSED BOTTOM OF EXCAVATION. DEWATERING SHALL LOWER THE WATER OUTSIDE THE EXCAVATION TO ENSURE THAT SEEPAGE AND MIGRATION OF SOIL PARTICLES DO NOT OCCUR THROUGH OPENINGS IN THE SHORING.
9. FLOTATION OF FACILITIES SHALL BE PREVENTED BY THE CONTRACTOR BY MAINTAINING A POSITIVE AND CONTINUOUS REMOVAL OF WATER. THE CONTRACTOR SHALL ADEQUATELY KEEP EXCAVATIONS DEWATERED.
10. THE RELEASE OF GROUNDWATER TO ITS STATIC LEVEL SHALL BE PERFORMED IN SUCH A MANNER AS TO MAINTAIN THE UNDISTURBED STATE OF THE NATURAL FOUNDATION SOILS, PREVENT DISTURBANCE OF COMPACTED BACKFILL, AND PREVENT FLOATATION OR MOVEMENT OF FACILITIES.

POLLUTION PREVENTION - GENERAL FIELD REQUIREMENTS

1. THE CONTRACTOR SHALL COMPLY WITH ALL LAWS AND REGULATIONS GOVERNING STORM WATER POLLUTION PREVENTION, INCLUDING THE DISTRICT'S ORDINANCE NO. 93-6. A COPY OF THE ORDINANCE IS AVAILABLE UPON REQUEST.
2. THE CONTRACTOR SHALL COMPLY WITH THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITS FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY REQUIREMENTS. THE CONTRACTOR SHALL PREPARE AND IMPLEMENT A STORM WATER POLLUTION PREVENTION PLAN (SWPPP). RESOURCES USED IN DEVELOPING THE SWPPP SHALL INCLUDE THE "CALIFORNIA STORM WATER BEST MANAGEMENT PRACTICE HANDBOOK FOR CONSTRUCTION ACTIVITY," THE SAN FRANCISCO BAY REGIONAL WATER QUALITY CONTROL BOARD'S "INFORMATION ON EROSION AND SEDIMENT CONTROLS FOR CONSTRUCTION PROJECTS." AND THE FAIRFIELD- SUISUN URBAN RUNOFF MANAGEMENT PROGRAM'S "POLLUTION PREVENTION-- GENERAL FIELD REQUIREMENTS." ORDERING INFORMATION FOR THESE RESOURCES IS AVAILABLE AT THE DISTRICT'S OFFICES. THE SWPPP SHALL BE SUBMITTED FOR REVIEW TO THE DISTRICT PRIOR TO ANY FIELD WORK. THE SWPPP MUST BE ACCEPTED BY THE DISTRICT PRIOR TO MOBILIZATION. THE SWPPP SHALL, AT A MINIMUM, INCLUDE BEST MANAGEMENT PRACTICES (BMPS), ACCEPTABLE TO THE DISTRICT, TO ADDRESS THE FOLLOWING:
   1) HOUSEKEEPING.
   2) WASTE CONTAINMENT AND CONTROL.
   3) MINIMIZING DISTURBED AREAS.
   4) STABILIZE DISTURBED AREAS.
   5) PROTECT SLOPES AND CHANNELS.
   6) CONTROL SITE PERIMETER.
   7) CONTROL OF INTERNAL EROSION.
   8) DISPOSAL OF STORM WATER AND GROUND WATER.
   9) SEDIMENT CONTROL.
   10) LIQUID WASTE MANAGEMENT.
   11) CONCRETE WASTE MANAGEMENT.
   12) HAZARDOUS WASTE MANAGEMENT.
   13) EMPLOYEE AND SUBCONTRACTOR TRAINING.
   14) VEHICLE AND EQUIPMENT FUELING AND MAINTENANCE.
   15) SPILL PREVENTION AND CONTROL.
   16) CONTAMINATED SOIL MANAGEMENT.
   17) SAWCUTTING.
   18) PAVING AND ASPHALT WORK.
   19) 3.STREET CLEANING.
3. THE CONTRACTOR SHALL EMPLOY AND UTILIZE ENVIRONMENTAL PROTECTION METHODS, OBTAIN ALL NECESSARY PERMITS, AND FULLY OBSERVE ALL APPLICABLE LAWS AND REGULATIONS.

COORDINATE SYSTEM

HORIZONTAL DATUM: NAD 1983 STATEPLANE CALIFORNIA II FIPS 0402 (US FEET)

NAD_1983_STATEPLANE_CALIFORNIA_II_FIPS_0402_FEET
WKID: 2226 AUTHORITY: EPSG

PROJECTION: LAMBERT_CONFORMAL_CONIC
FALSE_EASTING: 6561666.666666666
FALSE_NORTHING: 1640416.666666667
CENTRAL_MERIDIAN: -122.0
STANDARD_PARALLEL_1: 38.33333333333334
STANDARD_PARALLEL_2: 39.83333333333334
LATITUDE_OF_ORIGIN: 37.66666666666666
LINEAR UNIT: FOOT_US (0.3048006096012192)

GEOGRAPHIC COORDINATE SYSTEM: GCS_NORTH_AMERICAN_1983
ANGULAR UNIT: DEGREE (0.0174532925199433)
PRIME MERIDIAN: GREENWICH (0.0)
DATUM: D_NORTH_AMERICAN_1983
SPHEROID: GRS_1980
SEMIMAJOR AXIS: 6378137.0
SEMIMINOR AXIS: 6356752.314140356
INVERSE FLATTENING: 298.257222101

VERTICAL DATUM: NAVD 1988 (US SURVEY FEET)
NAVD_1988_FOOT_US
WKID: 105703 AUTHORITY: ESRI

LINEAR UNITS: FOOT_US
DIRECTION: POSITIVE UP
VERTICAL SHIFT: 0.0

LEGEND

- 355 — EXISTING GROUND MAJOR CONTOUR (5')
- EXISTING GROUND MINOR CONTOUR (1')
- PROPERTY BOUNDARY
- EXISTING SITE ACCESS ROAD
- EXISTING FENCE
- PROPOSED FENCE
- 310 — PROPOSED GRADING MAJOR CONTOURS (5')
- 312 — PROPOSED GRADING MINOR CONTOURS (1')
- PROPOSED GRADING LIMIT
- STM — PROPOSED STORM DRAIN
- IRR — PROPOSED IRRIGATION
- COM — EXISTING COMUNICATION
- PM/E — EXISTING ELECTRICAL
- PM/NG — EXISTING GAS
- W — EXISTING WATER LINE
- SS — EXISTING SANITARY SEWER
- SD — EXISTING STORM DRAIN
- PROJECT AREA
- DRAINAGE MANAGEMENT AREA (DMA)
- SAW CUT LINE
- EXISTING CATCH BASINS
- EXISTING SANITARY SEWER MANHOLE
- EXISTING STORM DRAIN MANHOLE
- EXISTING LIGHT POLE
- EXISTING FIRE HYDRANT
- EXISTING POWER POLE
- EXISTING STREET SIGN
- DEMO CONCRETE CURB, GUTTER AND SIDEWALK
- DEMO ASPHALT
- VEGETATION REMOVAL AREA
- DEMO CHAIN LINK FENCE AND GATE
- DEMO STORM DRAIN
- DEMO SDCB
- DEMO SDMH
- PROPOSED TREE WELL
- PROPOSED SILVA CELLS
- PROPOSED KAI PONO INLET

95% DRAFT DESIGN DRAWING - NOT FOR CONSTRUCTION

REV	DATE	BY	DESCRIPTION
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DATE: mm/dd/yyyy
DESIGNED BY: XXX
DRAWN BY: XXX
CHECKED BY: XXX
JOB NUMBER: XXXX

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WALNUT CREEK, CA 94597
(925) 357-6197

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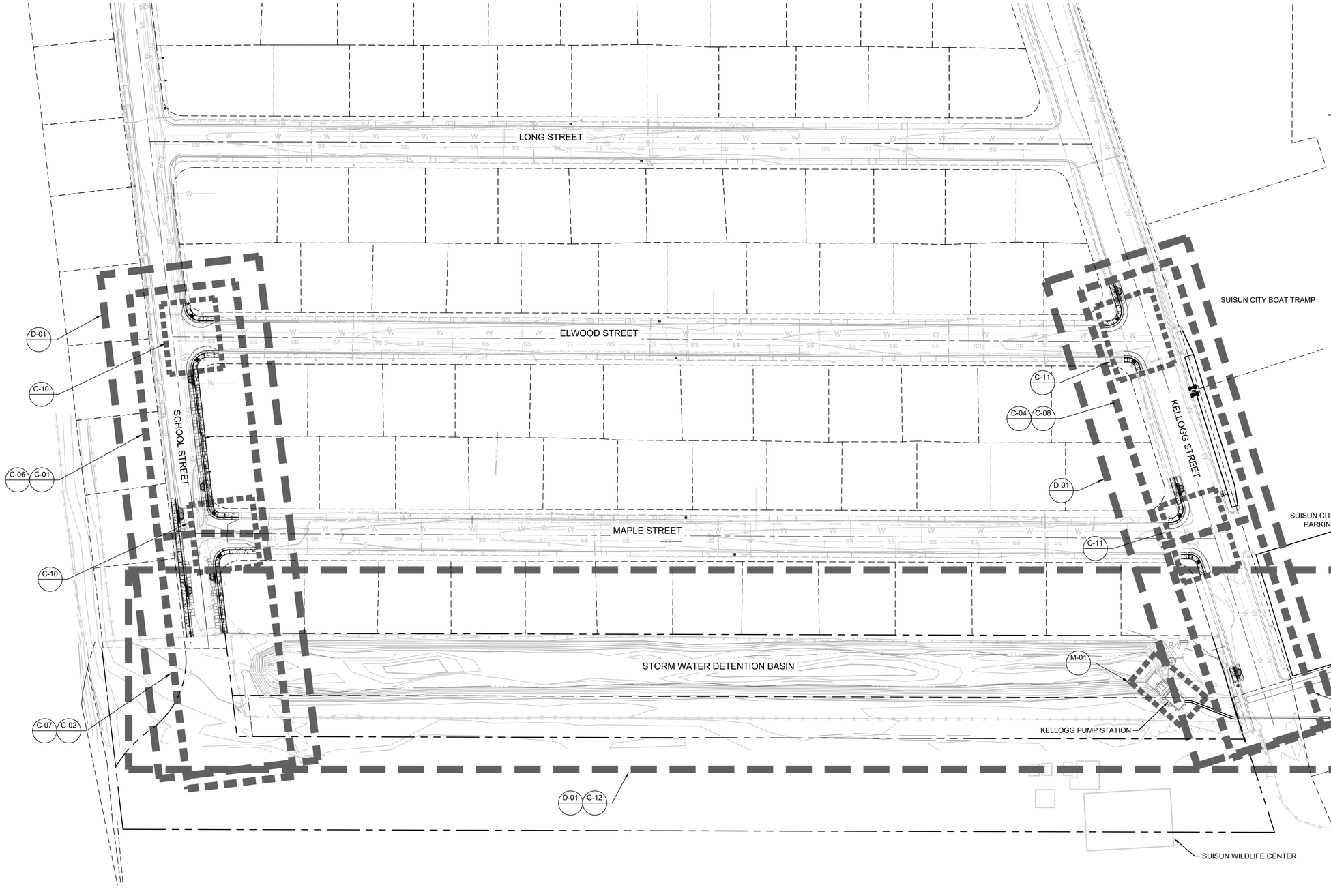
Fairfield, CA 94534-9700
(707) 429-8930 phone
(707) 429-1280 fax

FAIRFIELD-SUISUN SEWER DISTRICT AND CITY OF SUISUN CITY
KELLOGG RESILIENCY PROJECT

GENERAL NOTES

SHEET CODE: G-02
SHEET: 2
OF 41 SHEETS



LEGEND

- EXISTING GROUND MAJOR CONTOUR (5')
- EXISTING GROUND MINOR CONTOUR (1')
- PROPERTY BOUNDARY
- EXISTING SITE ACCESS ROAD
- EXISTING FENCE
- PROPOSED GRADING MAJOR CONTOURS (5')
- PROPOSED GRADING MINOR CONTOURS (1')
- PROPOSED GRADING LIMIT
- EXISTING COMUNICATION
- EXISTING ELECTRICAL
- EXISTING GAS
- EXISTING WATER LINE
- EXISTING SANITARY SEWER
- EXISTING STORM DRAIN
- EXISTING CATCH BASINS
- EXISTING SANITARY SEWER MANHOLE
- EXISTING STORM DRAIN MANHOLE
- EXISTING LIGHT POLE
- EXISTING FIRE HYDRANT
- EXISTING POWER POLE
- EXISTING STREET SIGN

95% DRAFT DESIGN DRAWING - NOT FOR CONSTRUCTION

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SCALE IN FEET

REV	DATE	BY	DESCRIPTION
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DATE: mm/dd/yyyy
DESIGNED BY: xxx
DRAWN BY: xxx
CHECKED BY: xxx
JOB NUMBER: xxxx

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FAIRFIELD-SUISUN SEWER DISTRICT AND CITY OF SUISUN CITY
KELLOGG RESILIENCY PROJECT

KEY MAP

SHEET CODE: G-03
SHEET: 3 OF 41 SHEETS

C:_GEO-ACCADCOOCS\GEOSYNTEC\FAIRFIELD SUISUN SEWER DISTRICT_KELLOGG RESILIENCY PROJPROJECT FILES\CADD\01_GREEN STREETS DESIGN\DWGS\SHEETS\DWR0902.01-G03

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FAIRFIELD-SUISUN SEWER DISTRICT (FSSD) - FAIRFIELD-SUISUN URBAN RUNOFF MANAGEMENT PROGRAM

POLLUTION PREVENTION - GENERAL FIELD REQUIREMENTS

MAKE SURE YOUR CREWS AND SUBS DO THE JOB RIGHT!

RUNOFF FROM STREETS AND OTHER PAVED AREAS IS A MAJOR SOURCE OF POLLUTION IN LOCAL CREEKS AND SUISUN MARSH. CONSTRUCTION ACTIVITIES CAN DIRECTLY AFFECT THE HEALTH OF THE CREEKS AND THE MARSH UNLESS CONTRACTORS AND CREWS PLAN AHEAD TO KEEP DIRT, DEBRIS, AND OTHER CONSTRUCTION WASTE AWAY FROM STORM DRAINS AND LOCAL CREEKS. FOLLOWING THESE GUIDELINES WILL ENSURE YOUR COMPLIANCE WITH FAIRFIELD-SUISUN URBAN RUNOFF MANAGEMENT PROGRAM REQUIREMENTS.

FAIRFIELD-SUISUN SEWER DISTRICT
(707) 429-8930

GENERAL PERMIT COMPLIANCE

CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL OF THE REQUIREMENTS OF THE STATE'S GENERAL CONSTRUCTION PERMIT (CONSTRUCTION GENERAL PERMIT ORDER WQ 2022-0057-DWQ, NPDES NO. CAS000002). ALL PROJECTS DISTURBING MORE THAN 1 ACRE OF AREA MUST PROVIDE PROOF TO THE DISTRICT THAT AN NOI HAS BEEN FILED WITH THE STATE AND THAT A WDID NUMBER HAS BEEN ISSUED BEFORE A NOTICE TO PROCEED WILL BE ISSUED BY THE DISTRICT.

MATERIALS STORAGE & SPILL CLEAN-UP

NON-HAZARDOUS MATERIALS

A. SAND, DIRT, AND SIMILAR MATERIALS MUST BE STORED AT LEAST 10 FEET FROM CATCH BASINS AND COVERED WITH TARPS HIGH WINDS, DURING WET WEATHER OR WHEN RAIN IS FORECAST.

B. USE (BUT DO NOT OVERUSE) RECLAIMED WATER FOR DUST CONTROL AS NEEDED.

C. RECYCLE ALL ASPHALT, CONCRETE, AND AGGREGATE BASE MATERIAL FROM DEMOLITION ACTIVITIES.

D. KEEP SITE CLEAN AND LITTER FREE. STORE ALL WASTES IN COVERED DUMPSTERS OR SIMILAR CONTAINMENT DEVICES TO PREVENT CONTACT WITH STORM WATER AND AVOID WINDBLOWN DEBRIS.

E. CHECK DUMPSTERS REGULARLY FOR LEAKS AND TO MAKE SURE THEY DON'T OVERFLOW. REPAIR OR REPLACE LEAKING DUMPSTERS PROMPTLY.

HAZARDOUS MATERIALS

A. LABEL ALL HAZARDOUS MATERIALS AND HAZARDOUS WASTES (SUCH AS PESTICIDES, PAINTS, THINNERS, SOLVENTS FUEL OIL, ANTIFREEZE) IN ACCORDANCE WITH CITY, COUNTY, STATE, AND FEDERAL REQUIREMENTS. CONTACT SOLANO COUNTY DEPARTMENT OF RESOURCE MANAGEMENT AT (707) 784-6765 FOR GREATER DETAIL.

B. STORE HAZARDOUS MATERIALS AND WASTES IN SECONDARY CONTAINMENT AND COVER THEM DURING WET WEATHER.

C. FOLLOW ALL MANUFACTURER'S APPLICATION INSTRUCTIONS FOR HAZARDOUS MATERIALS AND BE CAREFUL NOT TO USE MORE THAN NECESSARY. DO NOT APPLY CHEMICALS OUTDOORS WHEN RAIN IS FORECAST WITHIN 24 HOURS.

D. BE SURE TO ARRANGE FOR APPROPRIATE DISPOSAL OF ALL HAZARDOUS WASTES. CONTACT SOLANO COUNTY DEPARTMENT OF RESOURCE MANAGEMENT AT (707) 784-6765 FOR MORE INFORMATION.

SPILL PREVENTION AND CONTROL

A. KEEP A STOCKPILE OF CLEAN-UP MATERIALS (RAGS, ABSORBENTS, ETC.) AVAILABLE AT THE CONSTRUCTION SITE AT ALL TIMES.

B. WHEN SPILLS OR LEAKS OCCUR, CONTAIN THEM IMMEDIATELY AND BE PARTICULARLY CAREFUL TO PREVENT LEAKS AND SPILLS FROM REACHING THE GUTTER, STREET OR STORM DRAIN. NEVER WASH SPILLED MATERIAL INTO A GUTTER, STREET, STORM DRAIN OR CREEK.

C. REPORT ANY HAZARDOUS MATERIALS SPILLS IMMEDIATELY. CALL 911 AND SOLANO COUNTY RESOURCE MANAGEMENT (707-784-6765)

VEHICLE AND EQUIPMENT MAINTENANCE AND CLEANING

A. INSPECT VEHICLES AND EQUIPMENT FOR LEAKS FREQUENTLY. USE DRIP PANS TO CATCH LEAKS UNTIL REPAIRS ARE MADE; REPAIR LEAKS PROMPTLY.

B. FUEL AND MAINTAIN VEHICLES ON SITE ONLY IN A BERMED AREA OR OVER A DRIP PAN THAT IS BIG ENOUGH TO PREVENT RUNOFF.

C. IF YOU MUST CLEAN VEHICLES OR EQUIPMENT ON SITE, CLEAN WITH WATER ONLY IN A BERMED AREA THAT WILL NOT ALLOW RINSE WATER TO RUN INTO GUTTERS, STREETS, STORM DRAINS, SWALES OR CREEKS.

D. DO NOT CLEAN VEHICLES OR EQUIPMENT ON-SITE USING SOAPS, SOLVENTS, DEGREASERS, STEAM CLEANING EQUIPMENT, ETC.

EROSION AND SEDIMENT CONTROL

A. AN APPROVED EROSION CONTROL PLAN AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP) MUST BE SUBMITTED TO AND APPROVED BY APPROPRIATE CITY STAFF BEFORE A BUILDING OR GRADING PERMIT WILL BE ISSUED.

B. AVOID SCHEDULING EARTH MOVING ACTIVITIES DURING RAINY DAYS. IF GRADING ACTIVITIES ARE ALLOWED DURING THE WET SEASON, IMPLEMENT ALL CONTROL MEASURES NECESSARY TO PREVENT EROSION.

C. MATURE VEGETATION IS BEST FORM OF EROSION CONTROL. MINIMIZE DISTURBANCE TO EXISTING VEGETATION.

D. IF YOU DISTURB A SLOPE DURING CONSTRUCTION, PREVENT EROSION BY SECURING THE SOIL WITH EROSION CONTROL PRODUCTS. ALL DISTURBED AREAS MUST BE COVERED BY OCT. 1ST EACH YEAR TO PREVENT EROSION. AREAS MAY BE COVERED WITH TARPS, PLASTIC, STRAW, SEED, BLANKETS, BFM, ETC.

E. EROSION AND SEDIMENT CONTROL MATERIALS, SUPPLIES, AND DEVICES MUST BE INSTALLED ON ALL DISTURBED AREAS OF THE SITE AT LEAST 24 HOURS BEFORE ANY PREDICTION OF RAIN AND BETWEEN OCTOBER 1 AND APRIL 15. ONCE INSTALLED, THEY MUST BE INSPECTED AND MAINTAINED WEEKLY OR BEFORE, DURING, AND AFTER EACH STORM, WHICHEVER IS MOST FREQUENT. THIS INCLUDES WEEKENDS AND HOLIDAYS.

F. ALL STORM DRAIN INLETS MUST BE PROTECTED FROM SEDIMENT LADEN RUNOFF DURING ALL SEASONS.

STORM DRAIN POLLUTERS MAY BE LIABLE FOR FINES OF UP TO $54,000 PER INCIDENT, PLUS CLEAN UP EXPENSES.

CONTAMINATED SOIL

A. IF YOU SUSPECT CONTAMINATION (FROM SITE HISTORY, DISCOLORATION, ODOR, TEXTURE, ABANDONED PIPES, OR BURIED DEBRIS), CALL SOLANO COUNTY DEPARTMENT OF RESOURCE MANAGEMENT, (707) 784-6765, FOR HELP.

B. MANAGE DISPOSAL OF CONTAMINATED SOIL ACCORDING TO SOLANO COUNTY DEPARTMENT OF RESOURCE MANAGEMENT INSTRUCTIONS.

DEWATERING OPERATIONS

A. REUSE WATER FOR DUST CONTROL, IRRIGATION, OR ANOTHER ON-SITE PURPOSE TO THE GREATEST EXTENT POSSIBLE.

B. FILTRATION OR DIVERSION THROUGH A BASIN, TANK, OR SEDIMENT TRAP IS REQUIRED. WATER DISCHARGED PH MUST BE ABOVE 6 AND BELOW 9.THE MAXIMUM ALLOWABLE TURBIDITY IS 500 NTU.

C. IN AREAS OF KNOWN CONTAMINATION, TESTING IS REQUIRED PRIOR TO REUSE OR DISCHARGE OF GROUNDWATER. CONSULT WITH SOLANO COUNTY DEPARTMENT OR RESOURCE MANAGEMENT, (707) 784-6765, TO DETERMINE WHAT TESTING TO DO. CONTAMINATED GROUNDWATER MUST BE TREATED OR HAULED OFF-SITE FOR PROPER DISPOSAL.

SAW CUTTING

A. ALWAYS COMPLETELY COVER OR BARRICADE STORM DRAIN INLETS WITH SAND BAGS, OR FINE GRAVEL DAMS WHEN SAW CUTTING TO KEEP SLURRY OUT OF THE STORM DRAIN SYSTEM.

B. SHOVEL, ABSORB, OR VACUUM SAW-CUT SLURRY AND PICK UP ALL WASTE AS SOON AS YOU ARE FINISHED IN ONE LOCATION OR AT THE END OF THE DAY (WHICHEVER IS SOONER).

C. IF SAW-CUT SLURRY ENTERS A STORM DRAIN INLET, CLEAN IT UP IMMEDIATELY.

PAVING/ASPHALT WORK

A. DO NOT PAVE DURING WET WEATHER OR WHEN RAIN IS FORECAST.

B. ALWAYS COVER STORM DRAIN INLETS AND MANHOLES WHEN PAVING OR APPLYING SEAL COAT, TACK COAT, SLURRY SEAL, OR FOG SEAL.

C. PLACE DRIP PANS OR ABSORBENT MATERIAL UNDER PAVING EQUIPMENT WHEN NOT IN USE.

D. DO NOT WASH DOWN FRESH ASPHALT OR CONCRETE PAVEMENT.

CONCRETE, GROUT, MORTAR, AND STUCCO STORAGE AND WASTE DISPOSAL

A. STORE CONCRETE, GROUT, MORTAR, AND STUCCO UNDER COVER AND AWAY FROM DRAINAGE AREAS. THESE MATERIALS MUST NEVER ENTER THE STORM DRAIN.

B. WASH OUT CONCRETE AND STUCCO EQUIPMENT/TRUCKS ONLY IN THE DESIGNATED ON-SITE WASHOUT AREA. WASH WATER AND CONCRETE MUST NOT ENTER STORM DRAIN.

C. DIVERT WATER FROM WASHING EXPOSED AGGREGATE CONCRETE SO IT FLOWS TO A DIRT AREA WHERE IT WILL NOT RUN INTO A GUTTER, STREET, OR STORM DRAIN. IF A SUITABLE DIRT AREA IS NOT AVAILABLE, VACUUM UP THE RESIDUAL AND DISCARD ACCORDING TO REGULATIONS.

PAINTING

A. NEVER RINSE PAINT BRUSHES OR MATERIALS IN A GUTTER OR STREET OR OVER A STORM DRAIN.

B. PAINT OUT EXCESS WATER-BASED PAINT BEFORE RINSING BRUSHES, ROLLERS, OR CONTAINERS IN A SINK. IF YOU CAN'T USE A SINK, DIRECT WASH WATER TO A DIRT AREA AND SPADE IT IN.

C. PAINT OUT EXCESS OIL-BASED PAINT BEFORE CLEANING BRUSHES WITH THINNER.

D. FILTER PAINT THINNERS AND SOLVENTS FOR REUSE WHENEVER POSSIBLE. DISPOSE OF OIL-BASED PAINT SLUDGE AND UNUSABLE THINNER AS HAZARDOUS WASTE.

STREET CLEANING

A. THE STREET, GUTTER, SIDEWALK, AND OTHER PAVED SURFACES SHALL BE CLEANED DAILY OF ANY SOIL OR MATERIALS TRACKED OR DROPPED THERE. FLUSHING OF PAVED SURFACES WITH WATER SHALL NOT BE ALLOWED EXCEPT AFTER THE PAVED SURFACE HAS BEEN SWEPT USING MANUAL OR MECHANICAL BROOMS AND/OR MECHANICAL STREET SWEEPERS AND ALL DEPOSITED MATERIALS THAT CAN BE REMOVED BY REASONABLE MEANS HAVE BEEN REMOVED FROM THE PAVED SURFACE PRIOR TO FLUSHING.

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REV	DATE	BY	DESCRIPTION
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DATE mm/dd/yyyy
DESIGNED BY xxx
DRAWN BY xxx
CHECKED BY xxx
JOB NUMBER xxxx

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FAIRFIELD-SUISUN SEWER DISTRICT AND CITY OF SUISUN CITY
KELLOGG RESILIENCY PROJECT

POLLUTION PREVENTION

SHEET CODE G-04

SHEET 4 OF 41 SHEETS

C:\...GEO-ACCACCDOCS\GEDSYNTEC\FAIRFIELD SUISUN SEWER DISTRICT_KELLOGG RESILIENCY PROJPROJECT FILES\CADD\01_GREEN STREETS DESIGN\DWGS\SHEETS\GWR09201-G04

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SYMBOL	DESCRIPTION
NS-2	DEWATERING OPERATIONS
NS-3	PAVING AND GRIND OPERATIONS
NS-9	VEHICLE AND EQUIPMENT FUELING
SE-4	CHECK DAMS
SE-5	FIBER ROLL
SE-7	STREET SWEEPING AND VACUUMING
SE-10	STORM DRAIN INLET PROTECTION
TC-1	STABILIZED CONSTRICTION ENTRANCE
WE-1	WIND EROSION CONTROL
WM-1	MATERIAL DELIVERAY AND STORAGE
WM-3	STOCKPILE MANAGEMENT
WM-4	SPILL PREVENTION AND CONTROL
WM-8	CONCRETE WASTE MANAGEMENT
WM-9	SANITARY-SEPTIC WASTE MANAGEMENT

LEGEND

- EXISTING GROUND MAJOR CONTOUR (5')
- EXISTING GROUND MINOR CONTOUR (1')
- PROPERTY BOUNDARY
- EXISTING SITE ACCESS ROAD
- EXISTING FENCE
- PROPOSED GRADING MAJOR CONTOURS (5')
- PROPOSED GRADING MINOR CONTOURS (1')
- PROPOSED GRADING LIMIT
- EXISTING COMUNICATION
- EXISTING ELECTRICAL
- EXISTING GAS
- EXISTING WATER LINE
- EXISTING SANITARY SEWER
- EXISTING STORM DRAIN
- PROJECT AREA
- EXISTING CATCH BASINS
- EXISTING SANITARY SEWER MANHOLE
- EXISTING STORM DRAIN MANHOLE

LONG STREET
ELWOOD STREET
MAPLE STREET
SCHOOL STREET
KELLOGG STREET
SUISUN CITY MARINA PARKING LOT
STAGING AREA
STORM WATER DETENTION BASIN
CDFW TOB
OHWM
KELLOGG PUMP STATION
SUISUN WILDLIFE CENTER
SE-4
SE-5
SE-7
SE-10
NS-2
NS-3
NS-9
WM-1
WM-3
WM-4
WM-8
WM-9
TC-1
WE-1

N

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SCALE IN FEET

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FAIRFIELD-SUISUN SEWER DISTRICT AND CITY OF SUISUN CITY
KELLOGG RESILIENCY PROJECT

EROSION CONTROL PLAN

SHEET CODE G-05

SHEET 5 OF 41 SHEETS

C:_GEO-ACCACCDOCS\GEOSYNTEC\FAIRFIELD SUISUN SEWER DISTRICT_KELLOGG RESILIENCY PRJ\PROJECT FILES\CADD\01_GREEN STREETS DESIGN\DWGS\SHEETS\CWR\0002.01-G05

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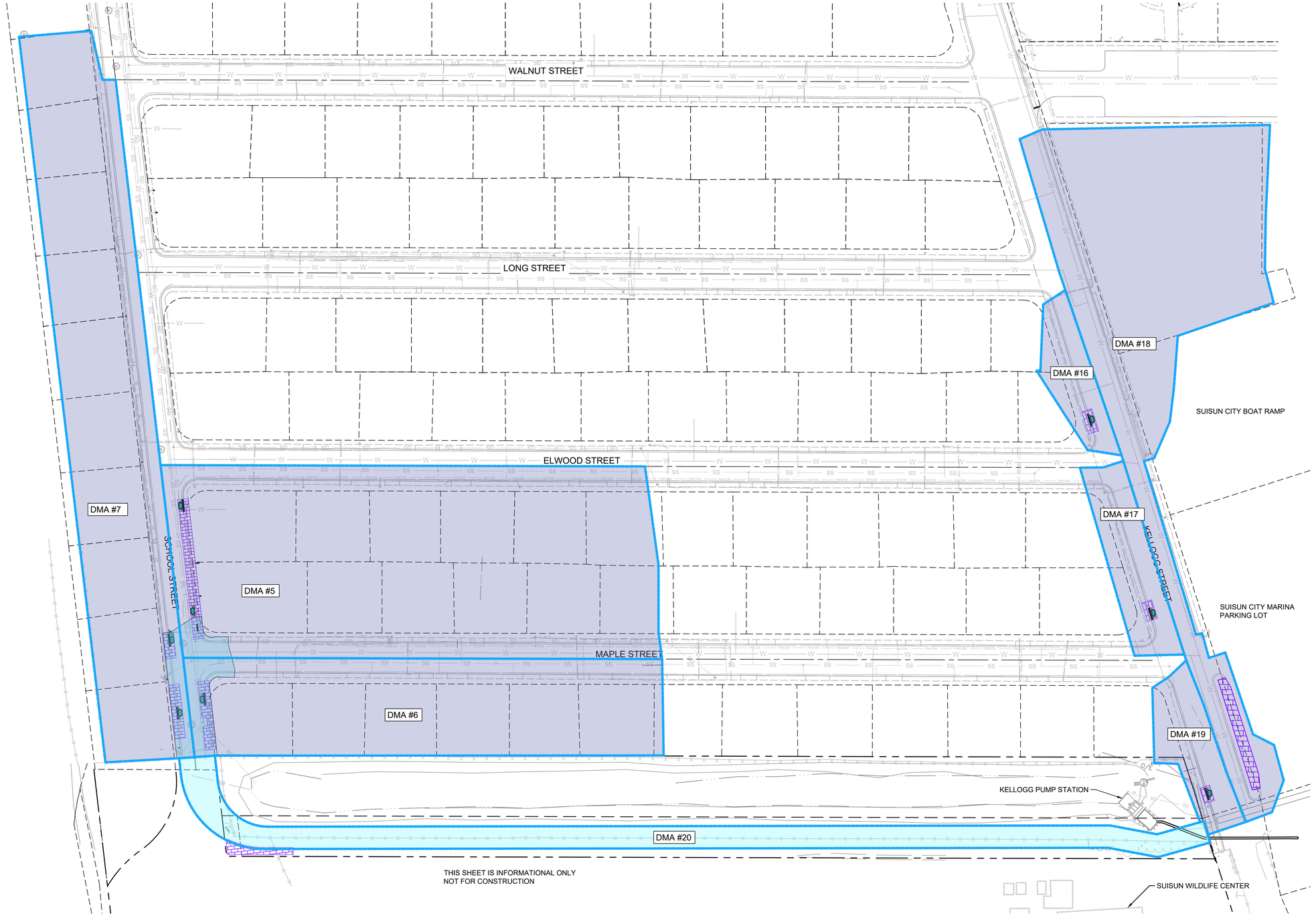

DMA	TOTAL AREA (SF)	IMPERVIOUS AREA (SF)	REGULATED PROJECT AREA[1] (SF)	C.3.J AREA[2] (SF)
1	63,330	30,507	2,181	29,464
2	90,570	58,019	1,361	57,215
3	44,770	26,295	2,719	24,924
4	6,240	5,764	0	5,764
5	62,010	53,020	0	53,020
6	8,800	7,768	0	7,768
7	7,630	6,628	0	6,628
8	23,920	3,871	23,920	0
TOTAL	*307,270*	*191,872*	*30,181*	*184,783*

[1] TOTAL AREA WITHIN DMA
[2] TOTAL IMPERVIOUS AREA OUTSIDE OF REGULATED PROJECT AREA WITHIN DMA

LEGEND

- DRAINAGE MANAGEMENT AREA (DMA)
- REGULATED PROJECT AREA
- PROPOSED GSI

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SCALE IN FEET

95% DRAFT DESIGN DRAWING - NOT FOR CONSTRUCTION

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DATE
DESIGNED BY xxx
DRAWN BY xxx
CHECKED BY xxx
JOB NUMBER xxxx

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FAIRFIELD-SUISUN SEWER DISTRICT AND CITY OF SUISUN CITY
KELLOGG RESILIENCY PROJECT

STORM WATER MANAGEMENT PLAN

SHEET CODE G-06
SHEET 6 OF 41 SHEETS

C:_GEO-ACCACCOOCS\GEOSYNTEC\FAIRFIELD SUISUN SEWER DISTRICT_KELLOGG RESILIENCY PRJ\PROJECT FILES\CAD\201_GREEN STREETS DESIGN\DWGS\SHEETS\CWR69021-01-G06

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APPENDIX B. AIR QUALITY DATA

Construction Off-Road Equipment Activity (Total Hours per Month)

Equipment Type	CalEEMod Equipment Type	Fuel Type	Horsepower	Engine Tier	2025					Duration (day)	Average Hours per Day
					May	Jun	Jul	Aug	Sept		
Aerial Lifts	Aerial Lifts	Diesel	46	Average	60	60					1.10
Air Compressors	Air Compressors	Diesel	37	Average	50	50	50	30	20		1.83
Cement and Mortar Mixers	Cement and Mortar Mixers	Diesel	10	Average	50	100	100	40	30		2.94
Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	33	Average	50	50	40	30	20		1.74
Boom Trucks	Cranes	Diesel	367	Average	20	20	20	20	20		0.92
Dumpers/Tenders	Dumpers/Tenders	Diesel	16	Average	50	50	40	25	10		1.61
Excavators	Excavators	Diesel	36	Average	80	100	100	40	20		3.12
Forklifts	Forklifts	Diesel	82	Average	30	30	20	10	10		0.92
Portable Generators	Generator Sets	Gasoline	11	Average	60	60	60	60	60		2.75
Field Trucks	Off-Highway Trucks	Diesel	376	Average	60	60	60	60	60		2.75
Pavers	Pavers	Diesel	81	Average	20	20	40	50	20		1.38
Paving Equipment	Paving Equipment	Diesel	89	Average	20	20	40	50	20		1.38
Plate Compactors	Plate Compactors	Diesel	8	Average	100	100	100	100	100	109	4.59
Pressure Washers	Pressure Washers	Diesel	14	Average			20	20	20		0.55
Pumps	Pumps	Diesel	11	Average	100	100	50	30	10		2.66
Rollers	Rollers	Diesel	36	Average	20	20	60	80	20		1.83
Rubber Tired Loaders	Rubber Tired Loaders	Diesel	203	Average	50	50	50	50	50		2.29
Signal Boards	Signal Boards	Electric	6	Average	60	60	60	60	60		2.75
Skid Steer Loaders	Skid Steer Loaders	Diesel	71	Average	60	60	60	60	60		2.75
Surfacing Equipment	Surfacing Equipment	Diesel	399	Average	80	80	80	40	20		2.75
Sweepers/Scrubbers	Sweepers/Scrubbers	Diesel	36	Average	20	20	60	60	20		1.65
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	84	Average	100	100	100	100	100		4.59
Trenchers	Trenchers	Diesel	40	Average				20	20		0.37
Welders	Welders	Diesel	46	Average	8	8	8	8	8		0.37
Water Truck	Off-Highway Trucks	Diesel	376	Average	80	80	80	80	80		3.67

Note: CalEEMod default horsepower and engine tier were used for construction off-road equipment.

Construction Vehicle Trip Activity (Total One-Way Trips per Month)

Vehicle Trip Activity	Travel Distance (One-Way Trip	Custom Travel Destination	Fleet Mix (percentage)				2025 (One-Way Trips)					Duration (day)	Trip Category	One-way Trips per Day
			LDA	LHD	MHD	HHD	May	Jun	Jul	Aug	Sept			
Worker Commute Trips	25		100%				200	200	200	200	200	109	**Worker Commute**	9.2
Vendor Trips	25	Various bay area locations		50%	50%		20	10	10	10	10		**Vendor**	0.6
Demolition Haul Trips	25	Landfill				100%	160	120	80	40	20		**Hauling**	8.6
Soil Haul Trips	25	Stockpile location				100%	160	120	80	40	20			
Concrete Trucks Trips	25	Concrete plant locations				100%	20	20	20	20	20			

Kellogg Resiliency Project Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Kellogg Resiliency Project
Construction Start Date	5/1/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	5.70
Precipitation (days)	39.2
Location	38.23305665141439, -122.04035172198323
County	Solano-San Francisco
City	Suisun City
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	877
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.28

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Linear	1.00	Mile	4.00	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	30.9	30.6	8.75	21.5	0.03	0.31	0.97	1.28	0.28	0.19	0.47	—	3,467	3,467	0.14	0.15	2.53	3,518
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	9.21	9.14	2.63	6.37	0.01	0.09	0.29	0.38	0.08	0.06	0.14	—	1,032	1,032	0.04	0.05	0.33	1,047
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.68	1.67	0.48	1.16	< 0.005	0.02	0.05	0.07	0.02	0.01	0.03	—	171	171	0.01	0.01	0.05	173

3. Construction Emissions Details

3.1. Project Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	30.7	30.5	7.06	19.5	0.02	0.26	—	0.26	0.24	—	0.24	—	2,354	2,354	0.10	0.02	—	2,362
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.59	0.59	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	9.16	9.10	2.11	5.83	0.01	0.08	—	0.08	0.07	—	0.07	—	703	703	0.03	0.01	—	705
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.18	0.18	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.67	1.66	0.38	1.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	116	116	< 0.005	< 0.005	—	117
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Demolition	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.71	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	174	174	< 0.005	0.01	0.72	177
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	46.4	46.4	< 0.005	0.01	0.13	48.6
Hauling	0.05	0.02	0.91	0.31	< 0.005	0.01	0.20	0.21	0.01	0.05	0.07	—	753	753	0.03	0.12	1.68	792
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.17	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	48.6	48.6	< 0.005	< 0.005	0.09	49.2
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.9	13.9	< 0.005	< 0.005	0.02	14.5
Hauling	0.01	< 0.005	0.28	0.09	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	225	225	0.01	0.04	0.22	236
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.05	8.05	< 0.005	< 0.005	0.02	8.15
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.30	2.30	< 0.005	< 0.005	< 0.005	2.40
Hauling	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	37.3	37.3	< 0.005	0.01	0.04	39.1

3.3. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.09	0.08	0.69	0.92	< 0.005	0.03	—	0.03	0.03	—	0.03	—	138	138	0.01	< 0.005	—	139
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.03	0.02	0.21	0.27	< 0.005	0.01	—	0.01	0.01	—	0.01	—	41.3	41.3	< 0.005	< 0.005	—	41.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	< 0.005	< 0.005	0.04	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.84	6.84	< 0.005	< 0.005	—	6.86
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Project Construction	Linear, Grading & Excavation	5/1/2025	9/30/2025	5.00	109	Project construction except for paving
Paving	Linear, Paving	5/1/2025	9/30/2025	5.00	109	Paving

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

Project Construction	Aerial Lifts	Diesel	Average	1.00	1.10	46.0	0.31
Project Construction	Air Compressors	Diesel	Average	1.00	1.83	37.0	0.48
Project Construction	Cement and Mortar Mixers	Diesel	Average	1.00	2.94	10.0	0.56
Project Construction	Concrete/Industrial Saws	Diesel	Average	1.00	1.74	33.0	0.73
Project Construction	Cranes	Diesel	Average	1.00	0.92	367	0.29
Project Construction	Dumpers/Tenders	Diesel	Average	1.00	1.61	16.0	0.38
Project Construction	Excavators	Diesel	Average	1.00	3.12	36.0	0.38
Project Construction	Forklifts	Diesel	Average	1.00	0.92	82.0	0.20
Project Construction	Generator Sets	Gasoline	Average	1.00	2.75	11.0	0.68
Project Construction	Off-Highway Trucks	Diesel	Average	1.00	2.75	376	0.38
Project Construction	Plate Compactors	Diesel	Average	1.00	4.59	8.00	0.43
Project Construction	Pressure Washers	Diesel	Average	1.00	0.55	14.0	0.30
Project Construction	Pumps	Diesel	Average	1.00	2.66	11.0	0.74
Project Construction	Rubber Tired Loaders	Diesel	Average	1.00	2.29	203	0.36
Project Construction	Signal Boards	Electric	Average	1.00	2.75	6.00	0.82
Project Construction	Skid Steer Loaders	Diesel	Average	1.00	2.75	71.0	0.37
Project Construction	Surfacing Equipment	Diesel	Average	1.00	2.75	399	0.30
Project Construction	Sweepers/Scrubbers	Diesel	Average	1.00	1.65	36.0	0.46
Project Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	4.59	84.0	0.37
Project Construction	Trenchers	Diesel	Average	1.00	0.37	40.0	0.50
Project Construction	Welders	Diesel	Average	1.00	0.37	46.0	0.45
Project Construction	Off-Highway Trucks	Diesel	Average	1.00	3.67	376	0.38
Paving	Pavers	Diesel	Average	1.00	1.38	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	1.38	89.0	0.36
Paving	Rollers	Diesel	Average	1.00	1.83	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Project Construction	—	—	—	—
Project Construction	Worker	9.20	25.0	LDA,LDT1,LDT2
Project Construction	Vendor	0.60	25.0	HHDT,MHDT
Project Construction	Hauling	8.60	25.0	HHDT
Project Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	0.00	0.00	LDA,LDT1,LDT2
Paving	Vendor	0.00	0.00	HHDT,MHDT
Paving	Hauling	0.00	0.00	HHDT
Paving	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)

Project Construction	0.00	3,360	4.00	4,200	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Linear	0.96	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	10.1	204	0.03	< 0.005

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Construction duration was provided by the applicant. Paver, paving equipment, and roller were included in the paving phase in order to calculate off-gassing emissions.
Construction: Off-Road Equipment	Construction off-road equipment activity was provided by the applicant.
Construction: Demolition	The amount of demolition debris was back-calculated based on the demolition haul trips provided by the applicant and the assumption of 20 short tons per load. The total material exported under the Dust from Material Movement tab was back-calculated based on the soil haul trips provided by the applicant and the assumption of 16 cubic yards of material per load.
Construction: Trips and VMT	Construction vehicle trip activity was provided by the applicant. Construction vehicle trips are all included in the Project Construction phase.

Construction: Paving	It is conservatively assumed that the Maple Street and south School Street will be repaved.

APPENDIX C. AIR DISPERSION MODEL

Summary of AERMOD Model Parameters, Assumptions, and Results for DPM and PM2.5 Emissions from Construction

AERMOD Model Parameters and Assumptions			
Source Type	**Units**	**Value**	**Notes**
Area Source: Off-Road Equipment Exhaust (DPM)			
Average Hours/Work Day	hours/day	10.5	Monday to Friday, 7 am to 6 pm; Saturday: 9 am to 5 pm
DPM Emission Rate	gram/second	0.00350	Exhaust PM10 from off-road construction equipment
Release Height	meters	5.0	SMAQMD, 2015
Initial Vertical Dimension	meters	1.4	USEPA, 2022
Area Source: On-Site Fugitive PM2.5			
Fugitive PM2.5 Emission Rate	gram/second	0.0011	Fugitive PM2.5 from on-site construction activities.
Release Height	meters	0.0	SMAQMD, 2015
Initial Vertical Dimension	meters	1.0	SMAQMD, 2015

AERMOD Model Results			
Sensitive Receptor	**Pollutant**	**Annual Average Concentration**	**Notes**
MEIR	DPM ($\mu g/m^3$)	0.0798	Maximally exposed residential receptor
	PM2.5 ($\mu g/m^3$)	0.1200	
MEIW	DPM ($\mu g/m^3$)	0.0291	Maximally exposed offsite worker
	PM2.5 ($\mu g/m^3$)	0.0417	

Notes:

DPM = diesel particulate matter

PM_{10} = particulate matter with aerodynamic resistance diameters equal to or less than 10 microns

$PM_{2.5}$ = particulate matter with aerodynamic resistance diameters equal to or less than 2.5 microns

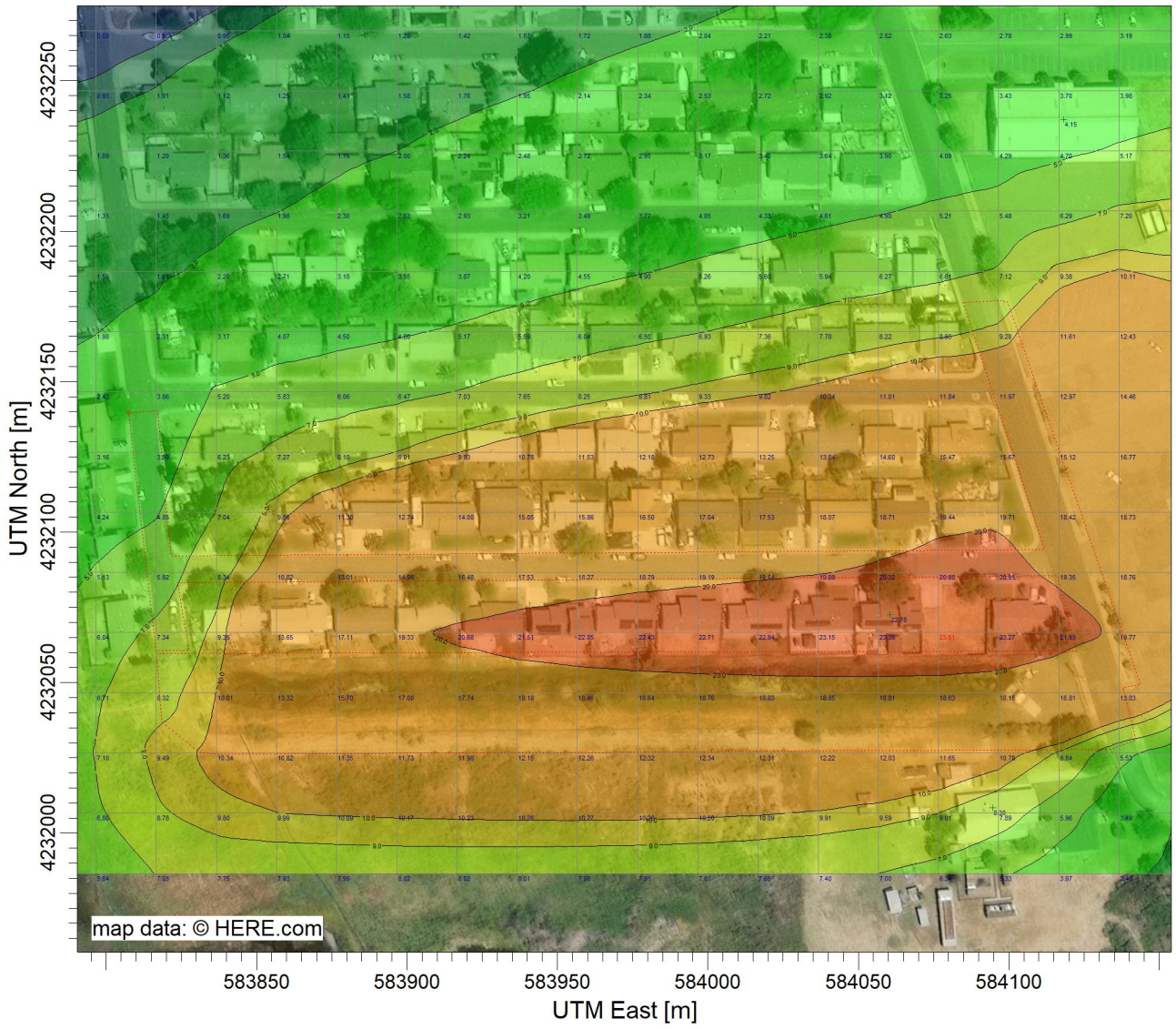
$\mu g/m^3$ = micrograms per cubic meter

Sacramento Metropolitan Air Quality Management District (SMAQMD), 2015. *Guide to Air Quality Assessment in Sacramento County* . June.

U.S. Environmental Protection Agency (USEPA), 2022. User's Guide for the AMS/EPA Regulatory Model (AERMOD).

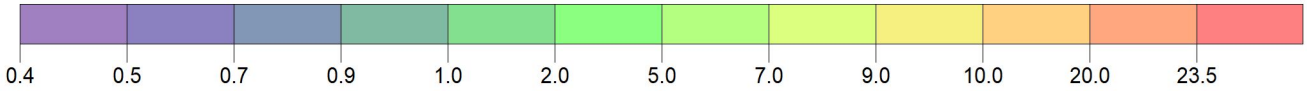
PROJECT TITLE:

Kellogg Resiliency Project
Construction Off-Road Equipment Exhaust PM10



PLOT FILE OF PERIOD VALUES AVERAGED ACROSS 0 YEARS FOR SOURCE GROUP: EXHAUSTP ug/m^3

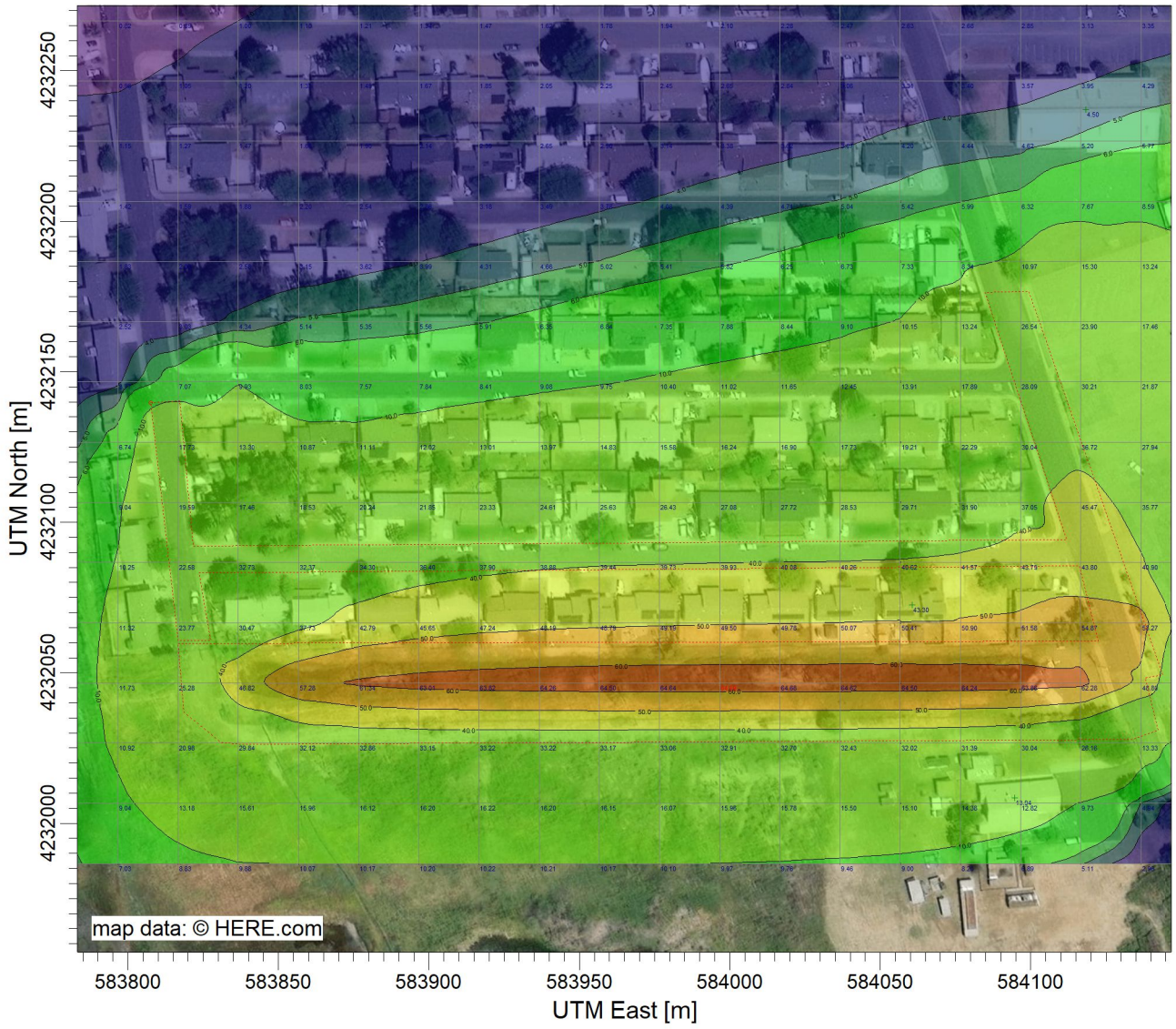
Max: 23.5 [ug/m^3] at (584076.65, 4232066.61)



COMMENTS: Concentrations based on unit emission rate (1 g/s)	SOURCES: **2**	COMPANY NAME: **Baseline Environmental Consulting**	
	RECEPTORS: **444**		
	OUTPUT TYPE: **Concentration**	SCALE: 1:2,287 0 0.05 km	
	MAX: **23.5 ug/m^3**		PROJECT NO.: **21202-19**

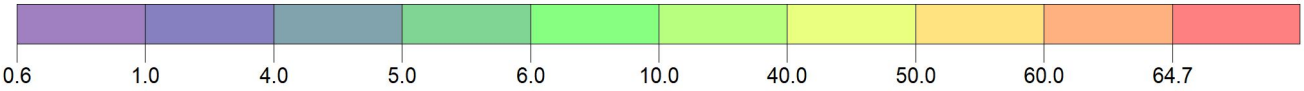
PROJECT TITLE:

Kellogg Resiliency Project
Construction Off-Road Equipment Fugitive PM2.5



PLOT FILE OF PERIOD VALUES AVERAGED ACROSS 0 YEARS FOR SOURCE GROUP: DUSTPM2. ug/m^3

Max: 64.7 [ug/m^3] at (583996.65, 4232046.61)



COMMENTS: Concentrations based on unit emission rate (1 g/s)	SOURCES: **2**	COMPANY NAME: **Baseline Environmental Consulting**	
	RECEPTORS: **444**		
	OUTPUT TYPE: **Concentration**	SCALE: 1:2,287 0 0.05 km	
	MAX: **64.7 ug/m^3**		PROJECT NO.: **21202-19**

Summary of Health Risk Assessment for DPM Emissions during Construction

Health Risk Assessment Parameters and Results				
Inhalation Cancer Risk Assessment for DPM	**Units**	**0-2 Years Old Infant (MEIR)**	**16-70 Years Old Off-site Worker (MEIW)**	**Notes**
DPM Concentration (C)	$\mu g/m^3$	0.080	0.029	AERMOD Annual Average
Daily Breathing Rate (DBR)	L/kg-day	1090	230	MEIR, and MEIW: BAAQMD, 2023
Inhalation absorption factor (A)	unitless	1.0	1.0	OEHHA, 2015
Exposure Frequency (EF)	unitless	0.96	0.68	MEIR: 350 days/365 days, MEIW: 250 days/365 days in a year (OEHHA, 2015)
Dose Conversion Factor (CF_D)	$mg\text{-}m^3/\mu g\text{-}L$	0.000001	0.000001	Conversion of µg to mg and L to m^3
Dose (D)	mg/kg/day	0.000083	0.000005	$C*DBR*A*EF*CF_D$ (OEHHA, 2015)
Cancer Potency Factor (CPF)	$(mg/kg/day)^{-1}$	1.1	1.1	Inhalation CPF for Diesel exhaust, OEHHA, 2015
Age Sensitivity Factor (ASF)	unitless	10	1	OEHHA, 2015
Annual Exposure Duration (ED)	years	0.4	0.4	Based on total construction period of 5 months
Averaging Time (AT)	years	70	70	70 years for residents (OEHHA, 2015)
Fraction of time at home (FAH)	unitless	0.85	--	OEHHA, 2015
Worker Adjustment Factor (WAF)	unitless	--	2.7	Assumes the emission source operates 10.5 hours/day, 6 days per week
Cancer Risk Conversion Factor (CF)	m^3/L	1000000	1000000	Chances per million (OEHHA, 2015)
Cancer Risk	per million	4.6	0.08	MEIR: D*CPF*ASF*ED/AT*FAH*CF*IF MEIW: D*CPF*ASF*ED/AT*WAF*CF*IF
Hazard Index for DPM	**Units**	**MEIR**	**MEIW**	**Notes**
Chronic REL	$\mu g/m^3$	5.0	5.0	OEHHA, 2015
Chronic Hazard Index for DPM	unitless	0.02	0.01	HI=C/REL (OEHHA, 2015)

Notes:

DPM = diesel particulate matter

REL = reference exposure level

$\mu g/m^3$ = micrograms per cubic meter

L/kg-day = liters per kilogram-day

m^3/L = cubic meters per liter

$(mg/kg/day)^{-1}$ = 1/milligrams per kilograms per day

MEIR = maximally exposed individual resident

MEIW = maximally exposed individual worker

References:

Office of Environmental Health Hazard Assessment (OEHHA), 2015. *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. February.*

Bay Area Air Quality Management District (BAAQMD), 2023. CEQA Air Quality Guidelines, May.

APPENDIX D. BIOLOGICAL RESOURCES REPORT

CARLSBAD
CLOVIS
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

February 9, 2023

Lucas Paz
Terraphase Engineering, Inc.
1300 Clay Street, Suite 1000
Oakland, CA 94612

Subject: Biological Resources Report for the Kellogg Resiliency Project, Fairfield-Suisun Sewer District, Suisun City, Solano County

Dear Mr. Paz:

On behalf of Terraphase Engineering, Inc. and the Fairfield-Suisun Sewer District, LSA completed this biological resources assessment report for the Kellogg Resiliency Project in City of Suisun City, Solano County, California. This report describes the habitat present at the project site, including a wetland basin, the potential for special-status species to occur, and provides recommendations and mitigation/avoidance measures.

SITE DESCRIPTION

The approximately 1.82-acre project site is a narrow, approximately 1,000-foot-long rectangle containing a constructed trapezoidal storm water detention ditch (Figure 1, attached). The site is located along the western side of Kellogg Street at the street's southern terminus, west of the City's municipal boat launch along Suisun Slough, approximately 0.8 mile south of the Main Street exit off of Highway 12.

The site comprises portions of Solano County Assessor's Parcels 1-3904-1-5, 41-3903-2-8, and 41-3902-3-22. The site is situated within Township 2 North, Range 2 West, Section 36 on the *Fairfield South, California* 7.5-minute USGS quadrangle. The site extends from approximately 38.2325° North Latitude and 122.0422° West Longitude at its western end to 38.2325° North Latitude and 122.0389° West Longitude at its eastern end. Much of the site appears to be imported fill. Site elevations range between 2 feet (within the ditch) and 10 feet above mean sea level.

Land uses surrounding the site include single family residences to the north, brackish/salt marsh to the west, the Suisun Wildlife Center and brackish/salt marsh to the south, and the Suisun City municipal boat launch and parking lot to the east.

The site is accessed from State Highway 12 at the Suisun City Main Street/Civic Center Boulevard exit 58B, by driving southward on Main Street to Cordelia Street, eastward to Kellogg Street, and then southward on Kellogg to its terminus.

METHODS

Research Methods

Prior to conducting fieldwork, LSA searched the following data bases: (1) the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB; CDFW 2023); (2) the California Native Plant Society's on-line Inventory of Rare and Endangered Vascular Plants of California (CNPS 2023); (3) the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Conservation (IPaC) on-line system (USFWS 2023), and (4) the eBird bird species list for the Peytonia Slough Ecological Reserve (eBird 2023). LSA also reviewed the *Biological Opinion on the Proposed Suisun Marsh Habitat Management, Preservation, and Restoration Plan and the Project-Level Actions in Solano County, California* (Programmatic Biological Opinion; USFWS 2013).

Field Survey

LSA Senior Biologist Dan Sidle conducted a reconnaissance-level survey of the project site on December 9, 2022. The survey involved walking throughout the project site in order to evaluate the site's potential to support special-status species and sensitive habitats. Plants and wildlife observed were recorded in field notes.

Nomenclature

The scientific and vernacular nomenclature for the plant and wildlife species used in this analysis are from the following standard sources: plants, Baldwin et al (2012). and updates listed on the Jepson Herbarium website (ucjeps.berkeley.edu/eflora/); amphibians and reptiles, Crother (2017); birds, American Ornithologists' Union and supplements through 2022 (AOU 2018); and mammals, Bradley et al (2014).

VEGETATION

The banks and tops of the trapezoidal channel are vegetated with ruderal and annual grassland plants, with common species comprising wild oats (*Avena* spp.), rip-gut (*Bromus diandrus*), Italian rye (*Festuca perennis*), soft chess (*Bromus hordeaceus*), wild radish (*Raphanus sativa*), tall wheatgrass (*Elymus ponticus*), salt grass (*Distichlis spicata*), common mallow (*Malva neglecta*), Himalayan blackberry (*Rubus armeniacus*), sweet fennel (*Foeniculum vulgare*), bull thistle (*Cirsium vulgare*), yellow star-thistle (*Centaurea solstitialis*), wild radish (*Raphanus raphanistrum*), Harding grass (*Phalaris aquatica*), and ice plant (*Carpobrotus edulis*). Trees and shrubs along the southern site boundary include coast live oak (*Quercus agrifolia*) and coyote brush (*Baccharis pilularis*). Trees along the northern site boundary comprise non-native landscape trees adjacent to residential yards. Vegetation in the flat bottom of the trapezoidal ditch includes saltgrass (*Distichlis spicata*), cattail (*Typha* spp.), Olney's three-square bulrush (*Schoenoplectus americanus*), and fat hen (*Atriplex prostrata*). The bottom of the trapezoidal ditch is predominantly vegetated with cattails in its eastern half and with bulrush in its western half. Tamarisk (*Tamarix* sp.), date palm (*Phoenix* sp.), and agave (*Agave* sp.) are also growing along perimeter of the wetland basin.

WILDLIFE

Wildlife species or wildlife sign observed or detected during the reconnaissance-level survey consist of California ground squirrel (*Otospermophilus beecheyi*), raccoon (*Procyon lotor*), and various birds that occur in wetland and grassland habitats. Bird species observed or detected consisted of Canada goose, ring-necked pheasant, rock pigeon, mourning dove, Anna's hummingbird, killdeer, greater yellowlegs, California gull, great egret, turkey vulture, Cooper's hawk, northern flicker, black phoebe, California scrub-jay, American crow, ruby-crowned kinglet, marsh wren, northern mockingbird, house finch, white-crowned sparrow, golden-crowned sparrow, song sparrow, spotted towhee, red-winged blackbird, common yellowthroat, and yellow-rumped warbler.[1] This list of wildlife is not an exhaustive list and various additional mammals and birds along with reptiles and amphibians are expected to occur at the site.

SPECIAL-STATUS SPECIES

For the purposes of this analysis, special-status species are defined as follows:

- Species that are listed, formally proposed, or designated as candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA);
- Species that are listed, or designated as candidates for listing, as rare, threatened, or endangered under the California Endangered Species Act (CESA);
- Plant species on California Rare Plant Rank (CRPR) Lists 1A, 1B and 2 in the CNPS *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2023);
- Wildlife species designated as Species of Special Concern or Fully Protected by the CDFW;
- Species that meet the definition of rare, threatened, or endangered under Section 15380 of the California Environmental Quality Act (CEQA) guidelines; or
- Species considered to be a taxon of special concern by local agencies.

Several special-status species that are or could be present in the project area. In addition to special-status species, active nests of native birds by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code and active roosts of bats are protected by CDFW. More detailed evaluation is provided below for the following special-status species and/or species groups due to their state and/or federal status and potential to occur on the site. Tables A and B (attached) list the special-status plant and wildlife species evaluated for the project.

Special-Status Plants

The project site provides low quality habitat for special-status plants due to the prior disturbance at the site and the constructed nature and periodic flooding of the existing basin. The banks and upland areas at the site appear to be regularly mowed. Although unlikely to occur, the following four special-status plants have the potential to occur in the basin due to the presence of marsh

[1] Note: Scientific names of bird species not included since common bird names are standardized by the American Ornithologists' Union.

habitat and having CNDDB occurrences recorded within 5 miles of the site: Suisun Marsh aster (*Aster lentus*; CRPR 1B), Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*; CRPR 1B), California alkali grass (*Puccinellia simplex*; CRPR 1B), and long-styled sand-spurrey (*Spergularia macrotheca* var. *longistyla*; CRPR 1B) (CDFW 2023).

Special-Status Wildlife

Western and Crotch Bumble Bee

The western bumble bee (*Bombus occidentalis*) and Crotch bumble bee (*Bombus crotchii*) are Candidate State Endangered species. The western bumble bee's and possibly the Crotch bumble bee's historical distribution included the project area, but these species are now rare (CDFW 2019). The closest CNDDB occurrence for western bumble bee is a 1950 record estimated at approximately 0.7 mile from the site, while the closest CNDDB occurrence for the Crotch bumble bee is a 2014 record approximately 4.6 miles from the site (CDFW 2023). Potentially suitable foraging habitat and nectar plants for these bumble bees are present at or near the site.

Monarch Butterfly

The monarch butterfly (*Danaus plexippus plexippus*) is a federal Candidate but is not yet listed or proposed for listing. This butterfly uses milkweed (*Asclepias* spp.) as its hostplant and will use numerous flowering plants for nectar-feeding. Although no remnant milkweed plants were observed during the field survey, narrow leaf milkweed (*Asclepias fascicularis*) grows in disturbed soils, including disked firebreaks. Milkweed may be present at the site and the project site may provide suitable nectar plants for monarch butterflies and may provide suitable breeding habitat if its milkweed hostplants are present. Monarchs could also use the onsite flowering plants for nectar.

Western Pond Turtle

The western pond turtle (*Emys marmorata*) is a California Species of Special Concern. Limited suitable aquatic and nesting habitat are present at the basin and the adjacent uplands. The closest CNDDB occurrence is approximately 4 miles from the site (CDFW 2023). Although unlikely due to the limited habitat and the site's isolation from occupied ponds, western pond turtles could occur at the site.

Burrowing Owl

Burrowing owl is a California Species of Special Concern that occurs in open, well-drained grasslands with abundant small mammal burrows, particularly those of California ground squirrels. Burrowing owls also prefer areas with short vegetation so they can easily scan their surroundings and spot potential predators (Zarn 1974). The closest CNDDB occurrence is a 2006 record approximately 0.4 mile from the site (CDFW 2023). This owl has been observed in the Peytonia Slough Ecological Reserve (eBird 2023) and could nest, winter, and/or forage in the grasslands and wetlands at or near the site. The presence of ground squirrel burrows and low grass height in some areas provide suitable habitat conditions for the species. No owls or sign of their presence were observed during the reconnaissance survey, but burrowing owls may nest and/or winter within the grasslands in the project area.

Short-Eared Owl

The short-eared owl is a California Species of Special Concern that occurs in freshwater and salt marshes, meadows, and irrigated alfalfa fields. This raptor is known to forage in the Peytonia Slough Ecological Reserve (eBird 2023) and could nest in the grasslands and wetlands at or near the site.

Northern Harrier

The northern harrier is a California Species of Special Concern that occurs in grasslands, fields, marshes, and meadows. This raptor is known to forage in Peytonia Slough Ecological Reserve (eBird 2023) and could nest in the grasslands and wetlands at or near the site.

White-Tailed Kite

The white-tailed kite is a California Fully Protected Species. This species nests in trees or large shrubs with dense foliage located near suitable foraging habitat (e.g., grasslands, marshes, agricultural fields). Preferred prey includes voles and mice. Although no stick nests were found during the field survey, the numerous trees in the project area provide suitable nest sites and foraging habitat is present in the grasslands and wetlands. White-tailed kites are known to occur in Peytonia Slough Ecological Reserve (eBird 2023) and could nest in the project area.

California Black Rail

The California black rail is a State Threatened and California Fully Protected Species that inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays. This bird species could forage an/or nest in the basin and at wetlands adjacent to the site.

California Ridgway's Rail

The California Ridgway's rail was listed as Federally Endangered. California Ridgway's rails nest mostly in lower tidal marsh zones near tidal sloughs and where cordgrass (*Spartina* spp.) is abundant. No suitable tidal channels occur at or within 700 feet of the project site. California Ridgway's rail are known to occur in Peytonia Slough Ecological Reserve (eBird 2023).

Other Nesting Birds

The trees, shrubs, herbaceous vegetation, wetland vegetation, and structures on or adjacent to the site provide suitable nesting habitat for numerous native bird species. Nests of all native birds, regardless of their regulatory status, are protected by the federal MBTA and provisions of the California Fish and Game Code. Suitable nesting habitat is present on and adjacent to the site for both special-status (e.g., white-tailed kite) and common (e.g., northern mockingbird) bird species, and construction activities could result in the destruction and/or disturbance of active nests if conducted during the breeding season (February through August). Construction-related disturbance (e.g., noise, vehicle traffic, personnel working adjacent to nesting habitat) could also indirectly impact nesting birds by causing adults to abandon nests in nearby trees or other habitat, resulting in nest failure and reduced reproductive potential. Vegetation removal activities would occur during the non-nesting season to the extent feasible.

Salt Marsh Harvest Mouse

The salt marsh harvest mouse (*Reithrodontomys raviventris*) is a federally endangered, State endangered and a California Fully Protected Species. Salt marsh harvest mice inhabit mid- to upper elevations of tidal and diked salt marshes dominated by dense pickleweed and other halophyte, such as alkali heath (*Frankenia salina*), fat hen, and salt grass. Vegetated levees and other grassy upland habitats adjacent to marshes are also critical as they provide shelter from predators during high tides and flooding. High-quality marsh habitat is comprised of deep (23-29 inches tall) and dense pickleweed, intermixed with fat hen and alkali heath (Shellhammer 1982). The species requires non-submerged, salt tolerant vegetation to escape the high tide (Shellhammer et al 1982). During these periods of high tides, populations of salt marsh harvest mice tend to concentrate in high marsh areas (Fisler 1965). The salt marsh harvest mouse has also been found in the top zone and transitional zones of tidal marshes that rarely flood. A recent study in Suisun Marsh north of Suisun Bay (Solano County) demonstrated that marsh microhabitats dominated by a variety of both native and non-native halophytic species (e.g., fat hen, alkali heath, salt grass, Baltic rush [*Juncus balticus*], prickly lettuce [*Lactuca serriola*]) can be just as productive for salt marsh harvest mice as pickleweed-dominated habitats (Sustaita et al. 2011). This species will also move into adjoining grasslands during the highest winter tides. Grasslands are also utilized as habitat primarily when new grass growth affords suitable cover in spring and summer months (Fisler 1965, Shellhammer 1982.). This species could use the project site as upland refugia during high tides/flooding of adjacent marshes and for foraging in the spring.

Suisun Shrew

The Suisun shrew is a California Species of Special Concern that occurs in tidal marshes of the northern shores of San Pablo and Suisun Bays. Suisun shrews inhabit tidal marshes characterized in order of decreasing tolerance to inundation, by California cordgrass (*Spartina foliosa*), pickleweed (*Salicornia ambigua*), and gumplant (*Grindelia cuneifolia*), and brackish marshes dominated by bulrush (*Schoenoplectus californicus*) and broadleaf cattail (*Typha latifolia*) (Williams 1986 as cited in Collins 1998). In general, salt marsh shrews prefer areas of low, dense vegetation, which provide adequate cover and nesting places along with a plentiful supply of invertebrates (Johnston and Rudd 1957, Rudd 1955 as cited in Collins 1998). This species could use the project site as upland refugia during high tides at the adjacent wetlands to the west.

Roosting Bats

Trees and structures in or adjacent to the project site provide suitable roosting habitat for special-status and common bat species. Bats could roost in the buildings and structures or in the large trees within or adjacent to the site. Special-status bats that could roost in the structures and large tree hollows include the pallid bat (*Antrozous pallidus*) and Townsend's big-eared bat (*Corynorhinus townsendii*), which are both California Species of Special Concern. Other bat species, such as the western red bat (*Lasiurus blossevillii*; California Species of Special Concern), could roost in the tree foliage at or near the site.

RIPARIAN HABITAT AND SENSITIVE NATURAL COMMUNITIES

The project site is a constructed stormwater collection basin. The basin supports freshwater marsh vegetation, while the margins of the basin include ruderal plants and a few scattered trees and shrubs, such palm, tamarisk, and agave. The constructed basin and surrounding vegetation would not be considered a sensitive natural community by CDFW and under CEQA.

WATERS OF THE UNITED STATES/STATE

The project site consists of a constructed stormwater collection basin with the freshwater marsh vegetation. The regulatory status of the basin is uncertain and will need to be determined by the U.S. Army Corps of Engineers (Corps). Current information indicates the basin was likely constructed on uplands and is being used and maintained as a stormwater collection basin, and therefore, the basin may not be considered as a Waters of the U.S. and not subject to regulation by the Corps. The Regional Water Quality Control Board (RWQCB); however, may exert jurisdiction over the basin even if the basin is exempt from Corps jurisdiction, since the basin supports wetland vegetation and receives stormwater flows from a constructed ditch to the west. Restoration, modification, and other impacts to the basin may require a permit from the RWQCB. Mitigation, such as the planting of native riparian plants and/or removal of invasive plants, may be required as part of the permit application.

CRITICAL HABITAT

Critical Habitat for the federally listed Delta smelt (*Hypomesus transpacificus*) and Suisun thistle (*Cirsium hydrophilum* var. *hydrophilum*) have been designated very close to the site, while Critical Habitat for vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardi*), and Contra Costa goldfields (*Lasthenia conjugens*) have been designated in the project vicinity. Although Critical Habitat has been designated near the site, the project does not provide suitable habitat for these species.

CONCLUSIONS AND RECOMMENDATIONS

The proposed project will require a formal jurisdictional determination to determine if the wetland basin is jurisdictional by the Corps and RWQCB.

The project site is adjacent to Suisun Marsh and several special-status species, such as Suisun song sparrow and salt marsh harvest mouse, are known to occur within the marsh and the surrounding habitat. Several preconstruction surveys are recommended to avoid and minimize potential impacts to special-status plant and wildlife species, nesting birds, and roosting bats. These recommendations are attached.

Please contact me at dan.sidle@lsa.net or (510) 376-5704 or Ross A. Dobberteen, PhD, Principal-in-Charge, at ross.dobberteen@lsa.net or at (510) 236-6810, if you have any questions or require additional information.

Sincerely,

LSA Associates, Inc.

Dan Sidle
Associate/Senior Biologist

Attachments: Figure 1
Tables A and B
Recommended Avoidance and Minimization Measures
U.S. Fish and Wildlife Service IPaC Species List
CNDDB Occurrences List within 5 Miles of Site

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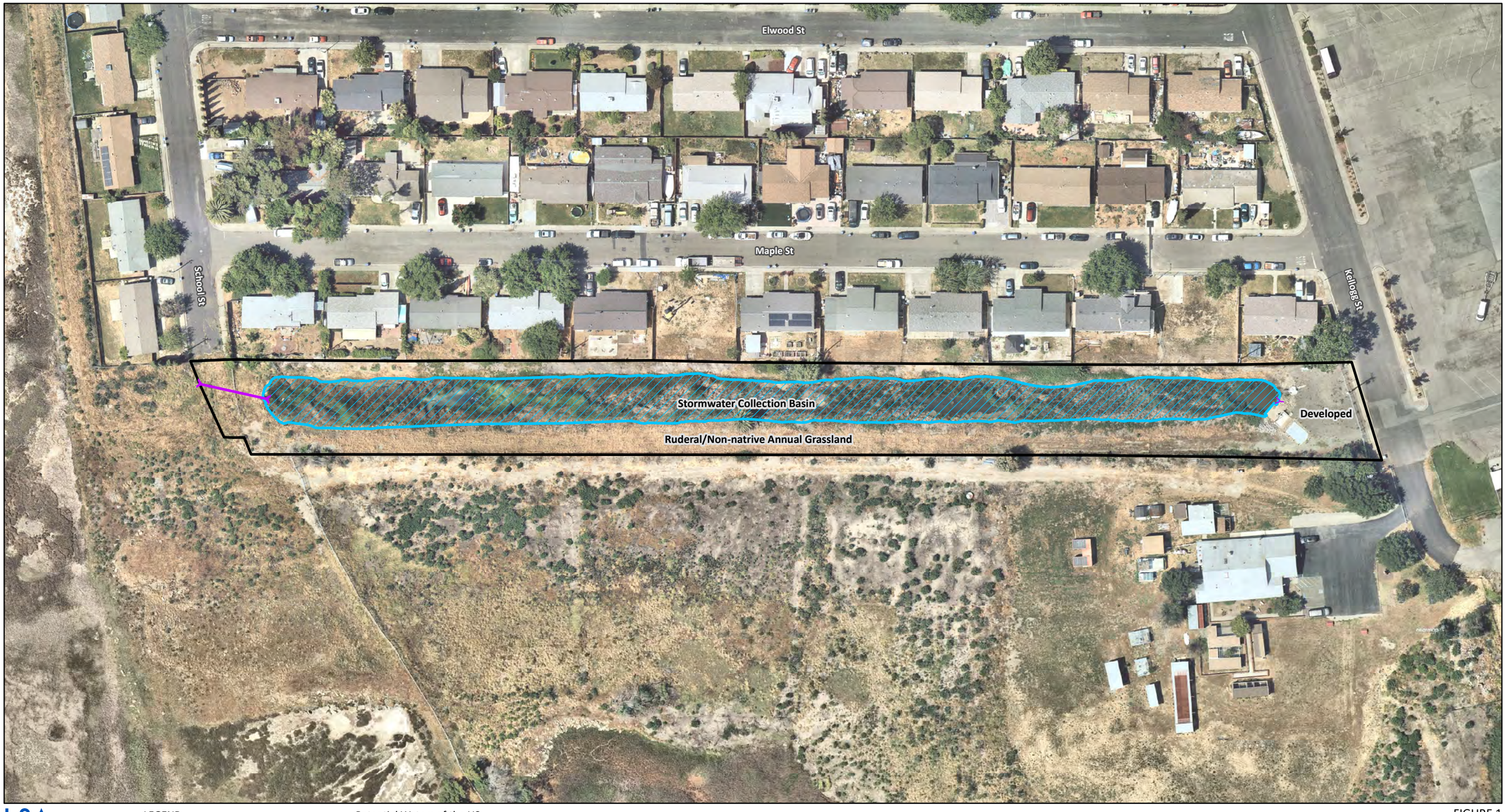


LSA

LEGEND

Project Site

Potential Waters of the US

Wetlands

Stormwater Collection Basin

Other Waters

Culvert

0 40 80

FEET

SOURCE: Nearmap Aerial (05/2022).

I:\20220829\GIS\MXDs\Bio Resources Report\Figure 1_Project Site.mxd (2/2/2023)

FIGURE 1

Fairfield-Suisun Sewer District Kellogg Resiliency Project
Suisun, Solano County, California

Project Site

Table A: Special-Status Plant Species Evaluated for the Project

Species	Status* (Fed/State/ CRPR)	Habitat Requirement	Potential for Occurrence
Aster lentus Suisun Marsh aster	–/–/List 1B	Brackish and freshwater marshes. Endemic to the Sacramento/San Joaquin River Delta. Most often observed along sloughs with *Phragmites australis*, *Scirpus* spp., *Rubus* sp., *Typha* spp., etc. 0-3 meters. Blooming period: May-November.	Wetland basin provides freshwater marsh habitat, but prior disturbance at the site likely precludes occurrence. The closest CNDDB occurrence is approximately 0.1 mile from the site
Astragalus tener var. *tener* Alkali milk-vetch	–/–/List 1B	Alkali playa, alkali flats, grassland, vernal pools, in low ground and flooded areas. 0-90 meters. Blooming period: Mar-June.	No suitable alkali habitat present. The closest CNDDB occurrence is approximately 0.8 mile from the site
Atriplex cordulata Heartscale	–/–/List 1B	Chenopod scrub, grassland, meadows; in sandy soils of alkaline flats and scalds in Central Valley. 15-95 meters. Blooming period: Apr-Oct.	No suitable alkali habitat present. The closest CNDDB occurrence is approximately 3.7 miles from the site
Atriplex depressa Brittlescale	–/–/List 1B	Chenopod scrub, meadows, playas, grassland, vernal pools; usually in alkali scalds, or alkali clay, or annual grassland. 0-380 meters. Blooming period: May-Oct.	No suitable alkali habitat present. The closest CNDDB occurrence is approximately 3.3 miles from the site.
Centromadia parryi ssp. *parryi* Pappose tarplant	–/–/List 1B	Chaparral, coastal prairie, meadows and seeps, marshes and swamps, vernally mesic, often alkaline valley and foothill grassland. Blooming period: June-Nov.	No suitable habitat present. The closest CNDDB occurrence is approximately 1 mile from the site.
Chloropyron molle ssp. *molle* Soft salty bird's-beak	FE/CR/List 1B	In coastal saltmarsh with *Distichlis spicata*, *Salicornia virginica*, *Frankenia salina*, etc. 0-3 meters. Blooming period: July-Nov.	No suitable habitat present. The closest CNDDB occurrence is a 1904 record at an unknown located estimated at approximately 0.2 mile from the site.

Species	Status* (Fed/State/ CRPR)	Habitat Requirement	Potential for Occurrence
Cicuta maculata var. bolanderi Bolander's Water-hemlock	–/–/List 2B	Coastal and salt-marsh wetlands. 0-460 meters. Blooming period: July-Sep.	No suitable habitat present. The closest CNDDB occurrence is approximately 0.2 mile from the site.
Cirsium hydrophilum var. hydrophilum Suisun thistle	FE/–/List 1B	Endemic to the Sacramento/San Joaquin Delta; known only from Solano County. Grows with *Scirpus* spp., *Distichlis spicata* near small watercourses within saltmarsh. 0-1 meter. Blooming period: July-Sep.	Suitable habitat not present. The closest CNDDB occurrence is approximately 0.1 mile from the site.
Downingia pusilla Dwarf downingia	–/–/List 1B	In several types of vernal pools and vernal lakes within valley and foothill grassland along margins with a variety of associates. 1-485 meters. Blooming period: March-May.	No suitable habitat present. The closest CNDDB occurrence is an 1893 record approximately 4.7 miles from the site.
Eriogonum truncatum Mt. Diablo buckwheat	–/–/List 1B	Chaparral, coastal scrub, and valley and foothill grassland. Dry, exposed clay or sandy substrates. Historically known from Alameda and Solano Counties. Assumed extinct in California before recently rediscovered at Mount Diablo in Contra Costa County. 100-600 meters. Blooming period: April-Nov.	Suitable habitat of dry exposed clay or sandy substrates is not present. The closest CNDDB occurrence is an 1888 record approximately 0.7 mile from the site.
Extriplex joaquinana San Joaquin spearscale	–/–/List 1B	Meadows, usually in non-wetlands, occasionally in wetlands in shadscale scrub and valley grassland. 0-950 meters. Blooming period: April-Sep.	No suitable habitat present. The closest CNDDB occurrence is an 1888 record approximately 3.4 miles from the site.
Holocarpha macradenia Santa Cruz tarplant	FT/CE/List 1B	Clay and sandy soils in coastal prairie, coastal scrub, and valley and foothill grassland. 10-220 meters. Blooming period: June–Oct.	No suitable habitat present. No CNDDB occurrences recorded within 5 miles of site.

Species	Status* (Fed/State/ CRPR)	Habitat Requirement	Potential for Occurrence
Isocoma arguta Carquinez goldenbush	–/–/List 1B	Alkaline soils, flats, hills and benches near drainages and on tops and sides of mounds in swale habitat within valley and foothill grassland. Known only from Contra Costa and Solano Counties. 1-20 meters. Blooming period: Aug-Dec.	No suitable alkali habitat present. The closest CNDDB occurrence is an 1829 record approximately 4.7 miles from the site.
Lasthenia conjugens Contra Costa goldfields	FE/–/List 1B	Grassland, vernal pools, woodland, alkaline playas; in depressions in open grassy areas. 5-210 meters. Blooming period: Mar-June.	Suitable habitat not present. The closest CNDDB occurrence is approximately 0.6 mile from the site
Lathyrus jepsonii var. *jepsonii* Delta tule pea	–/–/List 1B	Freshwater and brackish marshes. Most of distribution restricted to the Sacramento/San Joaquin River Delta. Often found with *Typha* spp., *Aster lentus*, *Rosa californica*, *Juncus* spp., *Scirpus* sp., etc. Usually on marsh and slough edges. 0-4 meters. Blooming period: May-Sep.	Wetland basin provides freshwater marsh habitat, but prior disturbance at the site likely precludes occurrence. The closest CNDDB occurrence is approximately 0.03 mile from the site
Legenere limosa Legenere	–/–/List 1B	In beds of vernal pools. Many historical occurrences are extirpated. 1-880 meters. Blooming period: April-June.	No suitable habitat present. The closest CNDDB occurrence is an extirpated record approximately 0.7 mile from the site
Lilaeopsis masonii Mason's lilaeopsis	–/CR/List 1B	Freshwater and brackish marshes and riparian scrub. Tidal zones, in muddy or silty soil formed through river deposition or river bank erosion. 0-10 meters. Blooming period: April-Nov.	Suitable habitat not present. The closest CNDDB occurrence is an extirpated record approximately 0.1 mile from the site in Suisun Slough.
Navarretia leucocephala ssp. *bakeri* Baker's navarretia	–/–/List 1B	In vernal pools and swales within cismontane woodland, valley and foothill grassland, and Lower montane coniferous forest. Adobe or alkaline soils. 5-950 meters. Blooming period: April-July.	Suitable habitat not present. The closest CNDDB occurrence is a 1930 record approximately 4.7 miles from the site.

Species	Status* (Fed/State/ CRPR)	Habitat Requirement	Potential for Occurrence
Plagiobothrys hystriculus Bearded popcorn-flower	–/–/List 1B	Margins of vernal pools or vernal swales in valley and foothill grassland. 0-52 meters. Blooming period: Apr-May.	Suitable habitat not present. The closest CNDDB occurrence is approximately 2.1 miles from the site.
Puccinellia simplex California alkali grass	–/–/List 1B	Usually in wetlands, occasionally in non-wetlands, in valley grassland and wetland-riparian habitat. 5-1,390 meters. Blooming period: March-May.	Wetland basin provides freshwater marsh habitat, but prior disturbance at the site likely precludes occurrence. The closest CNDDB occurrence is a 1938 record from an unknown location in Suisun.
Spergularia macrotheca var. *longistyla* Long-styled sand-spurrey	–/–/List 1B	Wetlands and non-wetlands in wetland-riparian habitat. 5-170 meters. Blooming period: Feb-May.	Wetland basin provides freshwater marsh habitat, but prior disturbance at the site likely precludes occurrence. The closest CNDDB occurrence is a 1953 record from an unknown location in Suisun.
Trifolium amoenum Two-fork clover	FE/–/List 1B	Valley and foothill grassland and coastal bluff scrub. Sometimes on serpentine soil, open sunny sites, and swales. Most recently sited on roadside and eroding cliff face. 5-560 meters. Blooming period: April-June.	Suitable habitat not present. The closest CNDDB occurrence is approximately 4.7 miles from the site.
Trifolium hydrophilum Saline clover	–/–/List 1B	Marshes and swamps, grassland (mesic), vernal pools; in alkaline soils. 0-45 meters. Blooming period: Apr-June.	Suitable habitat not present. The closest CNDDB occurrence is an 1888 record approximately 0.5 mile from the site.

*Status:
FE = Federally Endangered
CE = California Endangered
CR = California Rare
List 1B = CRPR: plant considered rare, threatened, or endangered in California and elsewhere.
List 2B = CRPR: plant considered rare, threatened, or endangered in California but more common elsewhere.
– = No status

Source: LSA 2023.

Table B: Special-Status Wildlife Species Evaluated for the Project

Species	Status (Federal/ State)	Habitat	Potential for Occurrence Within Project Area[a]
Crustaceans			
Conservancy fairy shrimp *Branchinecta conservatio*	FE/–	Vernal pools, typically large playa pools	Suitable habitat not present. The closest CNDDB occurrence is approximately 3.3 miles from the site.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT/–	Vernal pools and other seasonal wetlands	Suitable habitat not present. The closest CNDDB occurrence is approximately 2.7 miles from the site.
Vernal pool tadpole shrimp *Lepidurus packardi*	FE/–	Vernal pools.	Suitable habitat not present. The closest CNDDB occurrence is approximately 3.3 miles from the site.
California freshwater shrimp *…Syncaris pacifica*	FE/CE	Low gradient creeks with abundant riparian cover, frequenting shallow backwaters; during winter undercut banks with root tangles.	Suitable habitat not present. No CNDDB occurrences recorded within 5 miles of the site.
Insects			
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT/–	Closely associated with blue elderberry (*Sambucus mexicana* or *S. velutina*).	No elderberry shrubs present on site. The closest CNDDB occurrence is approximately 3.8 miles from the site.
Monarch butterfly *Danaus plexippus plexippus*	FC/ Sensitive Winter Roosting Sites	Winter roosts along the coast from northern Mendocino to Baja California, Mexico in wind-protected tree groves (eucalyptus, Monterey pine, cypress) with nectar and water sources nearby. Uses milkweed (*Asclepias* spp.) as host plants.	No suitable overwintering roost sites present, but species could forage in grasslands and breed onsite if milkweed (*Asclepias* spp.) host plant is present. Solano County is identified as an important migratory area for the species, and therefore, they likely migrate through the area. The closest CNDDB occurrence is an overwintering occurrence approximately 0.5 mile from the site.

Species	Status (Federal/ State)	Habitat	Potential for Occurrence Within Project Area[a]
Crotch bumble bee *Bombus crotchii*	–/CCE	Open grassland and scrub habitats supporting flowering plants, such as *Asclepias* sp., *Chaenactis* sp., *Lupinus* sp., *Medicago* sp., *Phacelia* sp., and *Salvia* sp.	Low quality habitat present at the project site due to limited native flowering plants. The closest CNDDB occurrence is approximately 4.6 miles from the site.
Western bumble bee *Bombus occidentalis*	–/CCE	Variety of habitat types supporting native flowering plants. Species has declined precipitously, perhaps from disease.	Low quality habitat present at the project site due to limited native flowering plants. The closest CNDDB occurrence is approximately 0.7 mile from the site.
Fish			
Sacramento splittail *Pogonichthys macrolepidotus*	FT/–	Slow-moving sections of rivers and sloughs, and in dead-end sloughs such as in the Delta and Suisun Marsh	Suitable habitat not present. The closest CNDDB occurrence is approximately 2 miles from the site.
Steelhead - Central Valley Distinct Population Segment *Oncorhynchus mykiss*	FT/–	Perennial streams with clear, cool to cold, fast flowing water and abundant gravels and riffles	Suitable habitat not present. No CNDDB occurrences recorded within 5 miles of site.
Chinook Salmon-Central Valley fall/late fall-run Evolutionary Significant Unit *Oncorhynchus tshawtyscha*	–/CSC	Chinook salmon tend to spawn in the mainstems of rivers (or larger tributaries) in areas of gravel and cobble substrate.	Suitable habitat not present. No CNDDB occurrences recorded within 5 miles of site.
Green sturgeon-southern Distinct Population Segment *Acipenser medirostris*	FT/–	Estuaries, lower reaches of large rivers, and salt or brackish water off river mouths. Ascends far up Trinity and Klamath rivers.	Suitable habitat not present. The closest CNDDB occurrence is approximately 4 miles from the site.
Longfin smelt *Spirinchus thaleichthys*	FC/CT	Bays, estuaries, and nearshore coastal waters from San Francisco Bay north to Lake Earl, near the Oregon Border. Spawn in low-salinity or freshwater reaches of coastal rivers and tributary streams.	Suitable habitat not present. The closest CNDDB occurrence is near the site in the upper Suisun Slough and tributaries.
Delta smelt *Hypomesus transpacificus*	FT/CE	Open brackish and fresh water of large channels.	Suitable habitat not present at the site. Suitable habitat and designated Critical Habitat present nearby in Suisun Marsh

Species	Status (Federal/ State)	Habitat	Potential for Occurrence Within Project Area[a]
Amphibians			
Foothill yellow-legged frog *Rana boylii*	–/CSC	Found in streams, creeks, and smaller rivers with partial shade, shallow riffles, and cobble sized or greater substrate	Suitable habitat not present. The closest CNDDB occurrence is approximately 4.3 miles from the site.
California red-legged frog *Rana draytonii*	FT/CSC	Found in lowlands and foothills in or near permanent ponds and streams with dense, shrubby, or emergent riparian vegetation.	Suitable habitat not present. No CNDDB occurrences recorded within 5 miles of site.
California tiger salamander *Ambystoma californiense*	FT/CE	Breeds in playa pools, ponds, and stock ponds. Spends summer and early Fall in uplands surrounding breeding sites, taking refuge in small mammal burrows or other underground cover.	Outside of known range. Suitable habitat not present. The closest CNDDB occurrence is approximately 3.9 miles from the site.
Reptiles			
Western pond turtle *Emys marmorata*	–/CSC	Found in ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires basking sites and adjacent grasslands or other open habitat for egg-laying.	Low quality habitat present in wetland basin. The closest CNDDB occurrence is approximately 4 miles from the site.
Birds			
White-tailed kite *Elanus leucurus*	–/CFP	Nests in shrubs and trees in open areas and forages in adjacent grasslands and agricultural land.	Suitable nesting and foraging habitat present on and near site. The closest CNDDB occurrence is approximately 3.5 miles from the site. This species is known to forage in the Peytonia Slough Ecological Reserve.
Northern harrier *Circus hudsonius*	–/CSC	Nests and forages in meadows, grasslands, open rangeland, and fresh or saltwater marshes.	Suitable nesting and foraging habitat present near site. The closest CNDDB occurrence is approximately 2.3 miles from the site. This species is known to forage in the Peytonia Slough Ecological Reserve.

Species	Status (Federal/ State)	Habitat	Potential for Occurrence Within Project Area[a]
Swainson's hawk *Buteo swainsoni*	–/CT	Found in open country and ranch lands, with scattered trees for nesting.	Suitable foraging habitat present at or near site, but no suitable nesting habitat present at site. The closest CNDDB occurrence is approximately 3.6 miles from the site. This species is known to forage in the Peytonia Slough Ecological Reserve.
Golden eagle *Aquila chrysaetos*	–/CSC	Forages in rolling foothill or coast-range terrain, with open grassland and scattered large trees. Nests in large trees, on cliffs, and occasionally on power line poles.	Suitable foraging habitat present near site. No suitable nesting habitat occurs on or near site. This species is known to forage in the Peytonia Slough Ecological Reserve.
Burrowing owl *Athene cunicularia*	–/CSC	Nests in burrows in grasslands and woodlands; often associated with ground squirrels. Will also nest in artificial structures (culverts, concrete debris piles, etc.)	Suitable foraging and nesting habitat present, but limited suitable burrow surrogates present. The closest CNDDB occurrence is approximately 0.4 miles from the site. This species is known to forage in the Peytonia Slough Ecological Reserve.
Short-eared owl *Asio flammeus*	–/CSC	Found in swamp lands, both fresh and salt, lowland meadows and irrigated alfalfa fields.	No suitable habitat present at site. The closest CNDDB occurrence is approximately 4.2 miles from the site. This species is known to forage in the Peytonia Slough Ecological Reserve.
California black rail *Laterallus jamaicensis coturniculus*	–/CT and CFP	Inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays.	Low quality habitat present in wetland basin, but could occur adjacent to site in Suisun Marsh. The closest CNDDB occurrence is approximately 0.2 mile from the site.
California Ridgway's rail *Rallus obsoletus obsoletus*	FE/CE and CFP	Salt-water and brackish marshes traversed by tidal sloughs in the vicinity of the San Francisco Bay.	Suitable habitat not present at the site. No suitable tidal channels within 700 feet of the project site. The closest CNDDB occurrence is approximately 1.4 miles from the site. This species is known to forage in the Peytonia Slough Ecological Reserve.

Species	Status (Federal/ State)	Habitat	Potential for Occurrence Within Project Area[a]
Yellow rail *Coturnicops noveboracensis*	–/CSC	Grassy shallow marshes and wet meadows dominated by sedges and grasses.	Species is very rare in area. The closest CNDDB occurrence is approximately 1.8 miles from the site.
California least tern *Sterna antillarum browni*	FE	Nests on the ground on sandy beaches, alkali flats, and hard-pan surfaces (salt ponds).	No Suitable foraging or nesting habitat present. No CNDDB occurrences recorded within 5 miles of site.
Loggerhead shrike *Lanius ludovicianus*	–/CSC	Found in grasslands and open shrub or woodland communities. Nests in dense shrubs or trees and forages in scrub, open woodlands, grasslands, and croplands. Frequently uses fences, posts, and utility lines as hunting perches.	Suitable foraging and nesting habitat present on and near site. No CNDDB occurrences recorded within 5 miles of site. This species is known to forage in the Peytonia Slough Ecological Reserve.
Yellow-breasted chat *Icteria virens*	–/CSC	Inhabits riparian thickets of willow and other brushy tangles near watercourses.	None. Suitable habitat not present. No CNDDB occurrences recorded within 5 miles of site.
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	–/CSC	Salt, brackish, and freshwater marshes; and riparian woodlands. Nests on or near ground in low vegetation.	Suitable habitat present in wetland basin. This bird was observed at the wetland during the field survey. The closest CNDDB occurrence is approximately 0.4 mile from the site. This species is known to forage in the Peytonia Slough Ecological Reserve.
Suisun song sparrow *Melospiza melodia maxillaries*	–/CSC	Resident of brackish water marshes surrounding Suisun Bay.	Suitable nesting and foraging habitat present in wetland basin. Song sparrows were observed during field survey, but these birds may have been a different subspecies other than the Suisun song sparrow. The closest CNDDB occurrence is approximately 0.4 miles from the site.
Tricolored blackbird *Agelaius tricolor*	–/CT, CSC	Nests in dense vegetation near open water, forages in grasslands and agricultural fields.	Suitable nesting habitat present. The closest CNDDB occurrence is approximately 2.1 miles from the site.

Species	Status (Federal/ State)	Habitat	Potential for Occurrence Within Project Area[a]
Mammals			
Townsend's western big-eared bat *Corynorhinus townsendii townsendii*	–/CSC	Found in wooded areas with caves or old buildings for roost sites.	May forage within the site. No suitable roosting or hibernating habitat present on the site. No CNDDB occurrences recorded within 5 miles of site.
Pallid bat *Antrozous pallidus*	–/CSC	Occupies a wide variety of habitats at low elevations. Most commonly found in open, dry habitats with rocky areas for roosting.	May forage on-site. No suitable roosting or hibernating habitat present on the site. No CNDDB occurrences recorded within 5 miles of site.
Western red bat *Lasiurus blossevillii*	–/CSC	Often roosts and forages on or near riparian habitat. Roosts primarily in trees, 2-40 feet above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging. Does not breed in the San Francisco Bay Area.	May forage and roost in trees on the site. No CNDDB occurrences recorded within 5 miles of site.
Salt marsh harvest mouse *Reithrodontomys raviventris*	FE/CE and CFP	Saline emergent wetlands of the San Francisco Bay and its tributaries.	May use project site for refugia during high tides within the adjacent Suisun Marsh. The closest CNDDB occurrence is near the site at the Peytonia Slough Ecological Reserve.
Suisun Shrew *Sorex ornatus sinuosus*	–/CSC	Tidal marshes of the northern shores of San Pablo and Suisun Bays.	May use upland habitat at site for refugia during high tides within the adjacent Suisun Marsh. The closest CNDDB occurrence is a 1952 record from nearby at the Suisun City Salt Marsh, adjacent to Cordelia Street.
American badger *Taxidea taxus*	–/CSC	Grassland, scrub, and woodland with loose-textured soils.	No suitable habitat present. No CNDDB occurrences recorded within 5 miles of site.

Status Codes:

FE = Federally-listed as an endangered species.
FT = Federally-listed as a threatened species.
CE = State-listed as an endangered species.
CT = State-listed as a threatened species.
CFP = State-listed as a fully protected.
CSC = State Species of Special Concern.

[a] Nearest records are based on CNDDB (CDFW 2023) occurrences unless otherwise noted.

Source: LSA 2023.

RECOMMENDED AVOIDANCE AND MINIMIZATION MEASURES

Worker Environmental Awareness Protection Training

The following worker environmental awareness training session modified from the Programmatic Biological Opinion is recommended for the project:

1. The qualified biologist will provide training to field management and construction personnel on the importance of protecting environmental resources. Communication efforts and training will take place during preconstruction meetings so that construction personnel are aware of their responsibilities and the importance of compliance.

2. Construction personnel will be educated on the types of sensitive resources located in the action area and the measures required to avoid impacts on these resources. Materials covered in the training program will include environmental rules and regulations for the specific project and requirements for limiting activities to the construction right-of-way and avoiding demarcated sensitive resource areas. Training seminars will educate construction supervisors and managers on:

    - The need for resource avoidance and protection.
    - Construction drawing format and interpretation.
    - Staking methods to protect resources.
    - The construction process.
    - Roles and responsibilities.
    - Project management structure and contacts.
    - Conservation measures.
    - Emergency procedures.

3. If new construction personnel are added to the project, the contractor will ensure the new personnel receive the mandatory training before starting work. A representative will be appointed during the employee education program to be the contact for any employee or contractor who might inadvertently kill or injure a listed species or who finds a dead, injured, or entrapped individual. The representative's name and telephone number will be provided to the USFWS and/or CDFW before the initiation of ground disturbance.

Biological Monitoring

The following biological monitoring information modified from the Programmatic Biological Opinion is recommended for the project:

1. The project proponents will provide a qualified biologist who will be responsible for monitoring implementation of the conditions in any of the state and federal permits.

2. The qualified biologist will determine the location of environmentally sensitive areas adjacent to each construction site based on mapping of existing land-cover types and special-status plant species. If such maps are not available, the biologist/environmental monitor will map and quantify the land-cover types and special-status plant populations in the proposed project footprint prior to construction.

3. To avoid construction-phase disturbance to sensitive habitats immediately adjacent to the action area, the qualified biologist will identify the boundaries of sensitive habitats and add at least a 100-foot buffer, where feasible, using orange construction barrier fencing. The fencing will be mapped on the project designs. Erosion-control fencing also will be placed at the edges of construction where the construction activities are upslope of wetlands and channels to prevent washing of sediment off site. The sensitive habitat and erosion-control fencing will be installed before any construction activities begin and will be maintained throughout the construction period.

4. The qualified biologist will ensure that dredging operations avoid all sensitive habitat areas outside direct project footprint, including patches of tidal wetland along channel banks to the extent practical.

5. Plants for revegetation will come primarily from natural recruitment. Plants imported to the restoration areas will come from local stock, and to the extent possible, local nurseries. Only native plants will be used for restoration efforts.

Focused Special-Status Plants

- Preconstruction botanical surveys of the project site shall be completed by a qualified botanist according to the CDFW's 2018 Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities. Surveys shall be floristic in nature, include areas of potential direct impacts and a minimum 50 feet surrounding area, be conducted at the time of year when species are both evident and identifiable, and be replicable. The purpose of these surveys shall be to identify the locations of special-status plants that could be affected during project construction. If special-status plants are not found in the survey area, then no further mitigation is required. If special-status plants are found in the survey area, then the below mitigation measures shall also be implemented.

- Locations of identified special-status plants shall be recorded by the qualified botanist using a global positioning system (GPS) unit or equivalent and flagged in the field. The GPS data shall be used to create digital and hardcopy maps for distribution to construction inspectors and contractors to inform them of areas where disturbance is prohibited, or where activities are restricted.

- Special-status plant species identified during surveys shall be submitted to the CNDDB.

- Where possible, identified special-status plants will be avoided. This may include making small adjustments to the proposed project, as well as the following:

    1. The qualified botanist shall establish an adequate buffer area to exclude activities that could harm an identified special-status plant population that is near the construction area.

    2. Access during construction may be restricted around special-status plant populations through appropriate field direction by the qualified botanist. This access restriction may include signage, buffers, seasonal restrictions, and design or no access, depending on the location and special-status species in question.

    3. The District and its construction contractors shall install a temporary, plastic mesh-type construction fence (Tensor Polygrid or equivalent) at least 4 feet tall around any established buffer areas to prevent encroachment by construction equipment and personnel. The qualified botanist shall determine the exact location of the fencing. The fencing shall be strung tightly on posts set at maximum intervals of 10 feet (3 meters) and shall be checked and maintained weekly until all construction is complete in the area where special-status plant species occur.

    4. No grading, clearing, storage of equipment or machinery, or other disturbance or construction activity shall occur until all temporary construction fencing has been installed by the District, and its construction contractor, and inspected and approved by the qualified botanist.

- If avoidance of special-status populations is not possible, then a Rare Plant Mitigation Plan shall be designed and implemented. CDFW approval of the Rare Plant Mitigation Plan is required before implementation of an activity that could directly or indirectly impact a federally or state listed or CNPS Rare Plant Rank 1A, 1B, 2A, or 2B species, and under no circumstances will state or federally listed plants be impacted without additional consultation with appropriate regulatory agencies. At a minimum, the plan shall include the following elements:

    1. For annual species, seed shall be collected from plants that will be impacted, seed stored in an appropriate seed banking facility, and a portion of the seeds shall be redistributed in the project vicinity, as directed by the qualified botanist. Individual plants may also be transplanted. For perennial species, seed collection and seed banking may be augmented by transplanting entire plants or cuttings, as directed by the qualified botanist.

    2. Suitable sites shall be identified on the site or in another nearby suitable location and prepared for redistribution of seeds (or transplants) at mitigation ratios that are appropriate for the species lifeform (e.g., annual or perennial) and success based on performance standards calibrated by established reference populations. The plan shall outline the site preparation activities.

3. Monitoring surveys of the seeded or transplanted areas shall be conducted for a minimum of three years. The District shall prepare monitoring reports that document the monitoring results and the success of the rare plant mitigation program.

4. Mitigation will be deemed successful when the mitigation population provides the same ecological functions as the impacted population, after taking into account natural fluctuations in population size, health, etc. This will include each of the relocated species establishes at least one stable population of approximately the same size of the impacted population, defined as species presence and population size over a 3-year period, taking into account fluctuations in local reference populations. If this goal is not achieved in 4 years, then contingency measures shall be implemented. Such measures will include evaluating the environmental or other characteristics affecting plant survival and implementing corrective measures, which may include additional seeding and planting; altering or implementing a weed control regime; or introducing or altering other management activities. Efforts shall continue until the mitigation site meets the success criteria for two consecutive years.

Special-Status Wildlife Species Protection Measures

The following special-status wildlife species protection measures modified from the Programmatic Biological Opinion is recommended for the project:

1. If individuals of listed wildlife species may be present and subject to potential injury or mortality from construction activities, a qualified biologist will conduct a preconstruction survey. If a listed wildlife species is discovered, construction activities will not begin in the immediate vicinity of the individual until the USFWS and/or CDFW is contacted and the individual has been allowed to leave the construction area.

2. Minimum qualifications for the qualified biologist will be a 4-year college degree in biology or related field and 2 years of professional experience in the application of standard survey, capture, and handling methods for the species of concern. However, in the case of DFG fully protected species, no capture or handling will be done.

3. Any special-status species observed during surveys will be reported to the USFWS and CDFW so the observations can be added to the CNDDB.

Bumble Bees and Monarch Butterfly

- A minimum of two preconstruction surveys conducted within 30 days during appropriate activity periods (i.e., March through September) and conditions prior to the start of ground disturbing activities to identify bumble bee activity and to look for nests, milkweed host plants, and signs of monarch breeding activity (larvae or chrysalides). Appropriate conditions for conducting the survey include surveying when temperatures are above 60° Fahrenheit (15.5°Celsius) and not during wet conditions (e.g., foggy, raining, or drizzling). The survey should be conducted at least 2 hours after sunrise and 3 hours before sunset and should occur at least 1 hour after rain subsides. Preferably, the survey should be conducted during sunny days with low wind speeds

(less than 8 miles per hour), but surveying during partially cloudy days or overcast conditions are permissible if the surveyors can still see their own shadow.

- If monarch butterflies, Crotch or western bumble bees, or potential Crotch or western bumble bees (since bumble bees can be difficult to identify in the field) are observed within the project site, a plan to protect monarch butterflies, Crotch and/or western bumble bee nests and individuals shall be developed and implemented in consultation with CDFW and USFWS. The plan shall include, but not be limited to, the following measures:

    - Specifications for construction timing and sequencing requirements (e.g., avoidance of raking, mowing, tilling, or other ground disturbance until late March to protect overwintering queen bumble bees);

    - Establishment of appropriate no-disturbance buffers for bumble bee nest sites or milkweed and construction monitoring by a qualified biologist to ensure compliance if bumble bee nests or milkweed are identified;

    - Restrictions associated with construction practices, equipment, or materials that may harm bumble bees or monarch butterflies (e.g., avoidance of pesticides/herbicides, BMPs to minimize the spread of invasive plant species);

    - Provisions to avoid monarch butterflies, Crotch or western bumble bees, or potential Crotch or western bumble bees if observed away from a bumble bee nest or milkweed plant during project activity (e.g., ceasing of project activities until the animal has left the active work area on its own volition); and

    - Prescription of an appropriate restoration seed mix targeted for the monarch butterfly and Crotch and western bumble bee, including milkweed and native plant species known to be visited by monarch butterflies and native bumble bee species and containing a mix of flowering plant species with continual floral availability through the entire active season of the Crotch and western bumble bee (March to October) and breeding season for monarch butterfly (early spring to fall).

Western Pond Turtle

- The District shall require a qualified biologist to conduct surveys for western pond turtles and nesting areas prior to initiating any ground-disturbing activities within 0.25-mile of potential western pond turtle aquatic habitat. If a western pond turtle is observed in aquatic habitat during the nesting season (May to July), a subsequent survey of the surrounding upland habitats shall be conducted to determine the suitability of the upland habitats for nesting and to examine the area for any evidence of turtle nesting activity. If a nesting area is detected or suspected, the Park District shall install temporary exclusion fencing around the nesting area, designed to not prevent movement of turtles between the nesting site and nearby aquatic habitat, but to exclude the movement of turtles into the construction area.

California Black Rail

The following California black rail avoidance measures are recommended for the project:

- Preconstruction surveys for California black rail will be conducted, by a qualified biologist, in suitable habitat at and adjacent to the site. The specific project proponent will implement the following survey protocols.

1. Surveys will be conducted at sunrise and sunset.

2. Sunrise surveys will begin 60 minutes before sunrise and conclude 75 minutes after sunrise (or until presence is detected).

3. Sunset surveys will begin 75 minutes before sunset and conclude 60 minutes after sunset (or until presence is detected).

4. Surveys will not be conducted when tides are greater than 4.5 National Geodetic Vertical Datum (NGVD) or when sloughs and marshes are more than bank full.

5. If California black rail are present in the immediate construction area, the following measures will apply during construction activities.

    A. To minimize or avoid the loss of individual California black rails, activities within or adjacent to California black rail habitat will not occur within 2 hours before or after extreme high tides (6.5 feet or above, as measured at the Golden Gate Bridge), when the marsh plain is inundated, because protective cover for California black rails is limited and activities could prevent them from reaching available cover.

    B. To minimize or avoid the loss of individual California black rails, activities within or adjacent to suitable marsh areas will be avoided during the California black rail breeding season from February 1 through August 31 each year unless surveys are conducted to determine California black rail locations and California black rail territories can be avoided.

    C. If breeding California black rails are determined to be present, activities will not occur within 300 feet of the nesting territory. If the intervening distance across a major slough channel or across a substantial barrier between the California black rail territory and any activity area is greater than 200 feet, it may proceed at that location within the breeding season.

    D. Construction activity shall be conducted only when high tides are not at their winter or summer extremes, to reduce the likelihood that California black rails will be present in the work area. Therefore, construction shall be avoided during the highest tides of June–July and December–January (± one week each month).

    E. A qualified biological monitor familiar with the habitat and ecology of California black rail and salt marsh harvest mouse (see below) shall be present on the site

during all initial habitat disturbance to ensure that avoidance and minimization measures and construction limits are enforced. The monitor shall have the authority to stop any construction activity.

Burrowing Owl

- Preconstruction activity surveys for burrowing owls shall be performed by a qualified biologist no more than 15 days before initial ground disturbance activities within a construction area. A survey to determine presence or absence may be performed at any time to facilitate passive relocation efforts (which can only occur outside of the nesting season of February 1 to August 31). In addition, a preconstruction activity survey by a qualified biologist must be conducted no more than 15 days prior to the commencement of grading, to confirm the absence of burrowing owls. This survey shall be conducted in all areas on and within 500 feet of the impact area and shall be conducted in accordance with the CDFW 2012 Staff Report on Burrowing Owl Mitigation (e.g., the surveys shall be conducted during weather conditions suitable for owl detection as recommended in the Staff Report. Surveys shall be conducted within 2 hours of dawn or sunset to maximize the detection of owls).

- If burrowing owls are present during the breeding season (generally February 1 to August 31), a 250-foot buffer, within which no new activity will be permissible, shall be maintained between project activities and occupied burrows. Owls present on the site after February 1 will be assumed to be nesting unless evidence indicates otherwise as confirmed by a qualified biologist. This protected buffer area shall remain in effect until August 31, or based upon monitoring evidence, until the young owls are foraging independently or a qualified biologist has determined that the nest is no longer active. In some cases (e.g., if an activity is not visible from the nest site), it is possible that a breeding-season buffer less than 250 feet would be adequate to avoid disturbance of nesting burrowing owls, but such a variance would be set by a qualified biologist in consultation with the CDFW. In such a case, the biologist shall monitor the behavior of the nesting birds during the first full day of construction activity immediately surrounding the buffer. The biologist shall look for signs of stress such as repeated alarm calls, agitated behavior, or departure of the birds from the nest. If the birds do not show signs of habituation to the new disturbance by resuming their normal nesting activities, work within the vicinity of the nest shall stop and the CDFW shall be consulted to refine the buffer determination. If the birds continue their normal activities, the biologist shall inspect the nest site every 1 to 2 days (the frequency determined in consultation with the CDFW) for as long as the nest is active and work is ongoing within the reduced buffer to confirm that the birds are tolerant of the construction activities.

- If burrowing owls are present during the nonbreeding season (generally September 1 to January 31), a 150-foot buffer zone shall be maintained around the occupied burrow(s) if practicable. If such a buffer is not practicable, then a buffer adequate to avoid injury or mortality of owls (based on the determination of a qualified biologist) shall be maintained. If an adequate buffer (as determined by a qualified biologist) cannot be maintained, or if destruction of the burrow is required, the non-nesting birds may be passively relocated subject to CDFW approval of a Burrowing Owl Exclusion Plan.

Other Nesting Birds

- Prior to construction activities occurring during the nesting bird season (February 1 through August 31), a preconstruction activity surveys for nesting birds will be conducted by a qualified biologist to ensure that no nests will be disturbed during project implementation. Surveys will be conducted no more than seven days prior to the initiation of construction activities. During this survey, the biologist shall inspect all trees and other potential nesting habitats (e.g., shrubs, ground and structures) in the impact area plus a surrounding 300-foot buffer for nests. If removal of potential nesting substrate or project grading will occur during more than one nesting season, or in different parts of the site in phases over the course of a single season, then additional pre-activity surveys must be performed within seven days prior to initiation of work in any particular area. If the preconstruction activity survey does not identify the presence of any active nests on or within 300 feet of the site, construction activities may proceed.

- If nests known to have eggs or young, or that cannot be confirmed to be inactive or to lack eggs or young, are found, or adults are demonstrating nesting behavior, a qualified biologist shall establish an appropriate construction-free buffer around each nest. Generally, a buffer of 300 feet for raptors and 100 feet for songbirds are adequate to avoid causing nest abandonment. The buffer shall remain in place until the qualified biologist has confirmed that the nest is no longer active.

- If less than a 100-foot nest buffer is necessary and determined to be appropriate for a particular nest or nests, a qualified biologist shall monitor the nest(s) before construction to document baseline nesting behavior and monitor the nest during construction to ensure nesting birds are not exhibiting signs of stress and territorial behavior. If signs of stress are observed during the monitoring, construction activities shall cease or buffer shall increase, as determined by a qualified biologist, the to a sufficient distance where the nesting birds are longer exhibiting signs of stress.

- To prevent encroachment, the buffer shall be clearly marked for avoidance. The established buffer shall remain in effect until the young have fledged or the nest is no longer active as confirmed by the biologist.

Salt Marsh Harvest Mouse

The following salt marsh harvest mouse avoidance measures from the PBO are recommended for the project.

1. A qualified biologist, with previous salt marsh harvest mouse monitoring and surveying experience, will conduct preconstruction surveys for the mouse prior to project initiation. If a salt marsh harvest mouse is discovered, construction activities will cease in the immediate vicinity of the individual until the USFWS and/or CDFW is contacted and the individual has been allowed to leave the construction area.

2. Disturbance to wetland vegetation will be avoided to the extent feasible in order to reduce potential impacts on salt marsh harvest mouse. If wetland plants cannot be avoided, it will

be removed by hand (and/or by another USFWS- and CDFW-approved method). The qualified biologist will be on site to monitor all wetland vegetation removal activities.

3. The upper 6 inches of soil excavated within salt marsh harvest mouse habitat will be stockpiled separately and replaced on top of the backfilled material.

4. Vegetation will be removed using hand tools (and/or by another USFWS- and CDFW-approved method).

5. Vegetation must be cleared to bare ground.

6. Vegetation should be removed from all areas (driving roads, action area, or anywhere else that vegetation could be stepped on).

7. Work will be scheduled to avoid extreme high tides when there is potential for salt marsh harvest mouse to move to higher, drier grounds. All equipment will be staged on existing roadways or paved/gravel areas away from the project site when not in use.

8. To prevent salt marsh harvest mouse from moving through the project site during construction, temporary exclusion fencing will be placed around a defined work area before construction activities start and immediately after vegetation removal. The fence should be made of a material that does not allow salt marsh harvest mouse to pass through or over, and the bottom should be buried to a depth of 2 inches so that mice cannot crawl under the fence. Any supports for the salt marsh harvest mouse exclusion fencing must be placed on the inside of the project area.

9. Prior to the start of daily construction activities during initial ground disturbance, the qualified biologist will inspect the salt marsh harvest mouse-proof boundary fence to ensure that it has no holes or rips and the base is still buried. The fenced area also will be inspected to ensure that no mice are trapped in it. Any mice found along and outside the fence will be closely monitored until they move away from the construction area.

10. If a salt marsh harvest mouse is discovered, construction activities will cease in the immediate vicinity of the individual until the USFWS and/or CDFW is contacted and the individual has been allowed to leave the construction area.

11. A qualified biologist with previous salt marsh harvest mouse experience will be on site during construction activities occurring in wetlands. The biologist will document compliance with the project permit conditions and avoidance and conservation measures. The qualified biologist has the authority to stop project activities if any of the requirements associated with these measures is not being fulfilled. If the qualified biologist has requested work stoppage because of take of any of the listed species, the USFWS and CDFW will be notified within one day by email or telephone.

Roosting Bats

- Prior to any tree removal during the maternity roosting period (April 15 to August 31) or hibernation period (October 15 to February 28), a focused tree habitat assessment shall be conducted by a qualified bat biologist of all trees that will be removed or impacted by construction activities. Trees containing suitable potential bat roost habitat features would then be clearly marked. The habitat assessments should be conducted enough in advance to allow preparation of a report with specific recommendations, and to ensure tree removal can be scheduled during seasonal periods of bat activity if required. If it is determined that day roosting bats are unlikely to occur, the tree may be removed as described below. If the absence of roosting bats cannot be confirmed, then the removal of trees providing suitable maternity or hibernation roosting habitat should only be conducted during seasonal periods of bat activity, including:

    1. Between March 1 (or after evening temperatures rise above 45F and/or no more than 1/2 inch of rainfall within 24 hours occurs) and April 15; or

    2. Between September 1 and about October 15 (or before evening temperatures fall below 45F and/or more than 1/2 inch of rainfall within 24 hours occurs).

- Appropriate methods will be used to minimize the potential of harm to bats during tree removal. Such methods may include but are not limited to using a two-step tree removal process. This method is conducted over two consecutive days and works by creating noise and vibration by cutting non-habitat branches and limbs from habitat trees using chainsaws only (no excavators or other heavy machinery) on Day 1. The noise and vibration disturbance, together with the visible alteration of the tree, is very effective in causing bats that emerge nightly to feed, to not return to the roost that night. The remainder of the tree is removed on Day 2. A bat biologist qualified in two-step tree removal is required on Day 1 to supervise and instruct the tree-cutters who will be on the site conducting the work, but only for a sufficient length of time to train all tree cutters who will conduct two-step removal of habitat trees. The bat biologist is generally not required on Day 2, unless a very large cavity is present and a large colony is suspected.

IPaC **U.S. Fish & Wildlife Service**

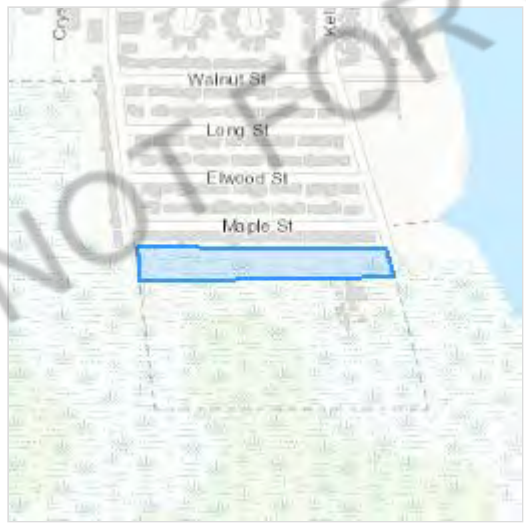
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Solano County, California



Local offices

San Francisco Bay-Delta Fish And Wildlife

(916) 930-5603
(916) 930-5654

650 Capitol Mall

Suite 8-300
Sacramento, CA 95814

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Salt Marsh Harvest Mouse Reithrodontomys raviventris Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/613	Endangered

Birds

NAME	STATUS
California Clapper Rail Rallus longirostris obsoletus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4240	Endangered
California Least Tern Sterna antillarum browni Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS

NAME	STATUS
Delta Smelt Hypomesus transpacificus Wherever found There is **final** critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Crustaceans

NAME	STATUS
California Freshwater Shrimp Syncaris pacifica Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7903	Endangered
Conservancy Fairy Shrimp Branchinecta conservatio Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp Branchinecta lynchi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
Contra Costa Goldfields Lasthenia conjugens Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7058	Endangered

Santa Cruz Tarplant Holocarpha macradenia — Threatened
Wherever found
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/6832

Soft Bird's-beak Cordylanthus mollis ssp. mollis — Endangered
Wherever found
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/8541

Suisun Thistle Cirsium hydrophilum var. hydrophilum — Endangered
Wherever found
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/2369

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE
Delta Smelt Hypomesus transpacificus https://ecos.fws.gov/ecp/species/321#crithab	Final

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Allen's Hummingbird Selasphorus sasin This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Jan 1 to Aug 31
Belding's Savannah Sparrow Passerculus sandwichensis beldingi This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15

Bullock's Oriole Icterus bullockii — Breeds Mar 21 to Jul 25
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

California Gull Larus californicus — Breeds Mar 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Clark's Grebe Aechmophorus clarkii — Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Olive-sided Flycatcher Contopus cooperi — Breeds May 20 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

Short-billed Dowitcher Limnodromus griseus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Western Grebe aechmophorus occidentalis — Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

Willet Tringa semipalmata — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Yellow-billed Magpie Pica nuttalli — Breeds Apr 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9726

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

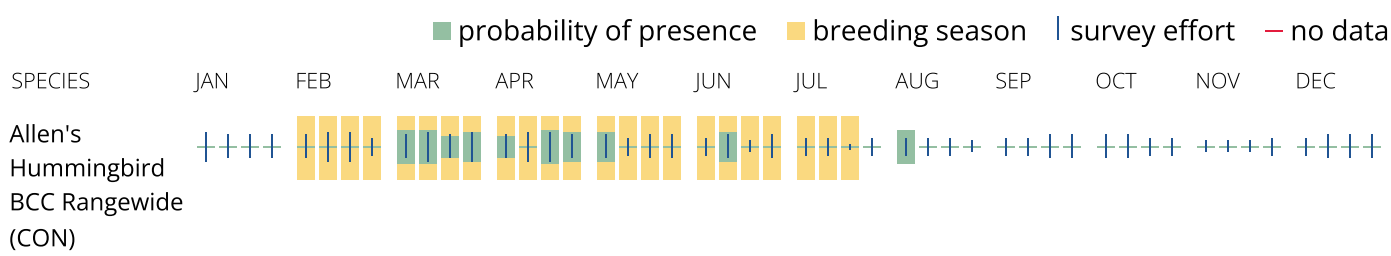
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

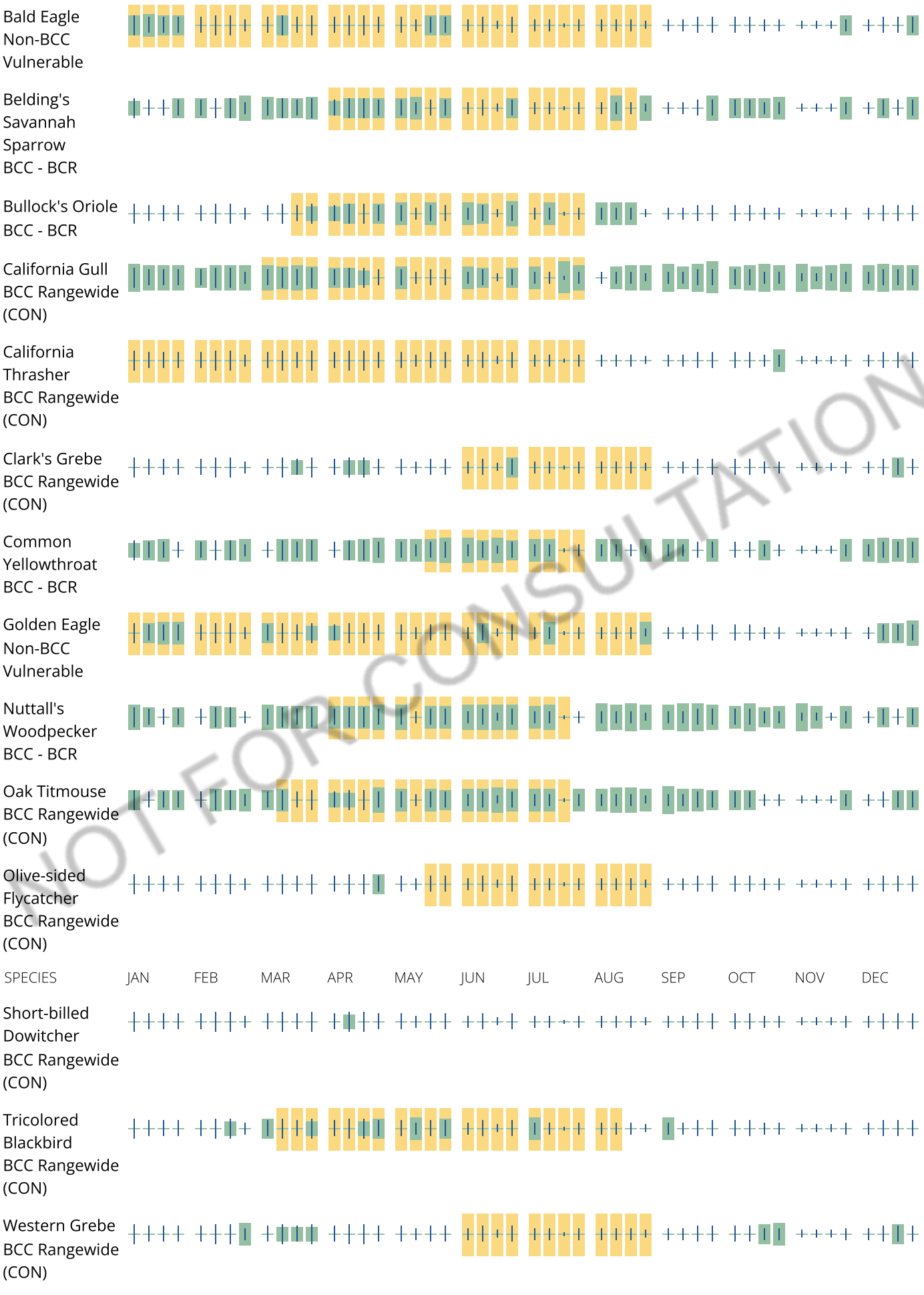
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

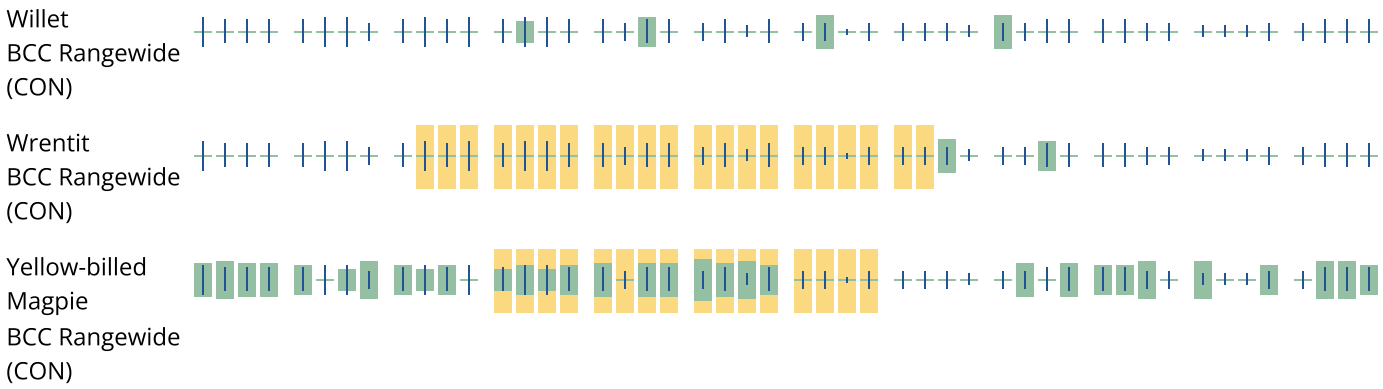
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.







Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local

government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Common Name	Scientific Name	Occ #	Federal List	California List	Rare Plant Rank	CDFW Status	Distance (miles)
Alkali Milk-vetch	Astragalus tener var. tener	38	None	None	1B.2		0.76
Alkali Milk-vetch	Astragalus tener var. tener	65	None	None	1B.2		1.06
Alkali Milk-vetch	Astragalus tener var. tener	40	None	None	1B.2		1.89
Alkali Milk-vetch	Astragalus tener var. tener	20	None	None	1B.2		3.67
Alkali Milk-vetch	Astragalus tener var. tener	52	None	None	1B.2		4.17
Alkali Milk-vetch	Astragalus tener var. tener	47	None	None	1B.2		4.69
Baker's Navarretia	Navarretia leucocephala ssp. bakeri	42	None	None	1B.1		4.69
Bearded Popcornflower	Plagiobothrys hystriculus	12	None	None	1B.1		2.05
Bolander's Water-hemlock	Cicuta maculata var. bolanderi	10	None	None	2B.1		0.23
Bolander's Water-hemlock	Cicuta maculata var. bolanderi	11	None	None	2B.1		1.15
Bolander's Water-hemlock	Cicuta maculata var. bolanderi	12	None	None	2B.1		4.96
Brittlescale	Atriplex depressa	55	None	None	1B.2		3.26
Brittlescale	Atriplex depressa	64	None	None	1B.2		4.56
Carquinez Goldenbush	Isocoma arguta	8	None	None	1B.1		4.69
Contra Costa Goldfields	Lasthenia conjugens	3	Endangered	None	1B.1		0.55
Contra Costa Goldfields	Lasthenia conjugens	43	Endangered	None	1B.1		0.69
Contra Costa Goldfields	Lasthenia conjugens	20	Endangered	None	1B.1		3.38
Contra Costa Goldfields	Lasthenia conjugens	28	Endangered	None	1B.1		3.40
Contra Costa Goldfields	Lasthenia conjugens	7	Endangered	None	1B.1		3.64
Contra Costa Goldfields	Lasthenia conjugens	42	Endangered	None	1B.1		3.72
Contra Costa Goldfields	Lasthenia conjugens	33	Endangered	None	1B.1		4.17
Contra Costa Goldfields	Lasthenia conjugens	22	Endangered	None	1B.1		4.18
Contra Costa Goldfields	Lasthenia conjugens	45	Endangered	None	1B.1		4.48
Contra Costa Goldfields	Lasthenia conjugens	46	Endangered	None	1B.1		4.96
Delta Tule Pea	Lathyrus jepsonii var. jepsonii	7	None	None	1B.2		0.03
Delta Tule Pea	Lathyrus jepsonii var. jepsonii	55	None	None	1B.2		0.40
Delta Tule Pea	Lathyrus jepsonii var. jepsonii	101	None	None	1B.2		1.47
Delta Tule Pea	Lathyrus jepsonii var. jepsonii	103	None	None	1B.2		1.96
Delta Tule Pea	Lathyrus jepsonii var. jepsonii	102	None	None	1B.2		2.01
Delta Tule Pea	Lathyrus jepsonii var. jepsonii	104	None	None	1B.2		2.79
Delta Tule Pea	Lathyrus jepsonii var. jepsonii	105	None	None	1B.2		3.23
Delta Tule Pea	Lathyrus jepsonii var. jepsonii	80	None	None	1B.2		3.25
Delta Tule Pea	Lathyrus jepsonii var. jepsonii	107	None	None	1B.2		3.73
Delta Tule Pea	Lathyrus jepsonii var. jepsonii	108	None	None	1B.2		3.89
Delta Tule Pea	Lathyrus jepsonii var. jepsonii	93	None	None	1B.2		4.11
Delta Tule Pea	Lathyrus jepsonii var. jepsonii	106	None	None	1B.2		4.21
Delta Tule Pea	Lathyrus jepsonii var. jepsonii	91	None	None	1B.2		4.25
Delta Tule Pea	Lathyrus jepsonii var. jepsonii	15	None	None	1B.2		4.41
Delta Tule Pea	Lathyrus jepsonii var. jepsonii	6	None	None	1B.2		4.48
Delta Tule Pea	Lathyrus jepsonii var. jepsonii	110	None	None	1B.2		4.53
Delta Tule Pea	Lathyrus jepsonii var. jepsonii	95	None	None	1B.2		4.54
Delta Tule Pea	Lathyrus jepsonii var. jepsonii	109	None	None	1B.2		4.77
Dwarf Downingia	Downingia pusilla	1	None	None	2B.2		4.69
Heartscale	Atriplex cordulata var. cordulata	79	None	None	1B.2		3.67
Jepson's Coyote-thistle	Eryngium jepsonii	14	None	None	1B.2		4.32
Legenere	Legenere limosa	2	None	None	1B.1		0.65
Long-styled Sand-spurrey	Spergularia macrotheca var. longistyla	18	None	None	1B.2		0.00
Long-styled Sand-spurrey	Spergularia macrotheca var. longistyla	17	None	None	1B.2		2.17
Marsh Microseris	Microseris paludosa	39	None	None	1B.2		3.64
Mason's Lilaeopsis	Lilaeopsis masonii	18	None	Rare	1B.1		0.01
Mason's Lilaeopsis	Lilaeopsis masonii	155	None	Rare	1B.1		3.95
Mason's Lilaeopsis	Lilaeopsis masonii	148	None	Rare	1B.1		4.23
Mason's Lilaeopsis	Lilaeopsis masonii	154	None	Rare	1B.1		4.91
Mt. Diablo Buckwheat	Eriogonum truncatum	8	None	None	1B.1		0.00
Pappose Tarplant	Centromadia parryi ssp. parryi	5	None	None	1B.2		1.02
Pappose Tarplant	Centromadia parryi ssp. parryi	38	None	None	1B.2		1.33
Pappose Tarplant	Centromadia parryi ssp. parryi	34	None	None	1B.2		1.70
Pappose Tarplant	Centromadia parryi ssp. parryi	10	None	None	1B.2		1.95
Pappose Tarplant	Centromadia parryi ssp. parryi	32	None	None	1B.2		2.40
Pappose Tarplant	Centromadia parryi ssp. parryi	11	None	None	1B.2		3.65
Pappose Tarplant	Centromadia parryi ssp. parryi	26	None	None	1B.2		3.67
Pappose Tarplant	Centromadia parryi ssp. parryi	43	None	None	1B.2		4.01
Pappose Tarplant	Centromadia parryi ssp. parryi	33	None	None	1B.2		4.07

Pappose Tarplant	Centromadia parryi ssp. parryi	8	None	None	1B.2		4.32
Pappose Tarplant	Centromadia parryi ssp. parryi	3	None	None	1B.2		4.46
Pappose Tarplant	Centromadia parryi ssp. parryi	2	None	None	1B.2		4.71
Saline Clover	Trifolium hydrophilum	47	None	None	1B.2		0.45
Saline Clover	Trifolium hydrophilum	10	None	None	1B.2		4.09
San Joaquin Spearscale	Extriplex joaquinana	50	None	None	1B.2		3.35
San Joaquin Spearscale	Extriplex joaquinana	57	None	None	1B.2		3.57
San Joaquin Spearscale	Extriplex joaquinana	49	None	None	1B.2		3.59
San Joaquin Spearscale	Extriplex joaquinana	61	None	None	1B.2		4.17
San Joaquin Spearscale	Extriplex joaquinana	63	None	None	1B.2		4.69
Soft Salty Bird's-Beak	Chloropyron molle ssp. molle	31	Endangered	Rare	1B.2		0.21
Soft Salty Bird's-Beak	Chloropyron molle ssp. molle	19	Endangered	Rare	1B.2		1.80
Soft Salty Bird's-Beak	Chloropyron molle ssp. molle	21	Endangered	Rare	1B.2		1.92
Soft Salty Bird's-Beak	Chloropyron molle ssp. molle	29	Endangered	Rare	1B.2		2.04
Soft Salty Bird's-Beak	Chloropyron molle ssp. molle	22	Endangered	Rare	1B.2		2.50
Soft Salty Bird's-Beak	Chloropyron molle ssp. molle	16	Endangered	Rare	1B.2		2.85
Soft Salty Bird's-Beak	Chloropyron molle ssp. molle	6	Endangered	Rare	1B.2		4.41
Suisun Marsh Aster	Symphyotrichum lentum	9	None	None	1B.2		0.07
Suisun Marsh Aster	Symphyotrichum lentum	204	None	None	1B.2		0.40
Suisun Marsh Aster	Symphyotrichum lentum	205	None	None	1B.2		0.91
Suisun Marsh Aster	Symphyotrichum lentum	196	None	None	1B.2		1.19
Suisun Marsh Aster	Symphyotrichum lentum	203	None	None	1B.2		2.12
Suisun Marsh Aster	Symphyotrichum lentum	108	None	None	1B.2		2.14
Suisun Marsh Aster	Symphyotrichum lentum	102	None	None	1B.2		3.01
Suisun Marsh Aster	Symphyotrichum lentum	98	None	None	1B.2		3.31
Suisun Marsh Aster	Symphyotrichum lentum	101	None	None	1B.2		3.61
Suisun Marsh Aster	Symphyotrichum lentum	104	None	None	1B.2		3.85
Suisun Marsh Aster	Symphyotrichum lentum	14	None	None	1B.2		4.37
Suisun Marsh Aster	Symphyotrichum lentum	97	None	None	1B.2		4.56
Suisun Thistle	Cirsium hydrophilum var. hydrophilum	1	Endangered	None	1B.1		0.13
Suisun Thistle	Cirsium hydrophilum var. hydrophilum	4	Endangered	None	1B.1		1.88
Suisun Thistle	Cirsium hydrophilum var. hydrophilum	7	Endangered	None	1B.1		2.96
Two-fork Clover	Trifolium amoenum	13	Endangered	None	1B.1		4.69
Vernal Pool Smallscale	Atriplex persistens	38	None	None	1B.2		1.02
California Alkali Grass	Puccinellia simplex	60	None	None	1B.2		0.00
Lyngbye's Sedge	Carex lyngbyei	31	None	None	2B.2		1.10
Northern Slender Pondweed	Stuckenia filiformis ssp. alpina	17	None	None	2B.2		1.32
California Tiger Salamander - Centra	Ambystoma californiense pop. 1	988	Threatened	Threatened		WL	3.92
California Tiger Salamander - Centra	Ambystoma californiense pop. 1	398	Threatened	Threatened		WL	4.05
California Tiger Salamander - Centra	Ambystoma californiense pop. 1	714	Threatened	Threatened		WL	4.44
California Tiger Salamander - Centra	Ambystoma californiense pop. 1	715	Threatened	Threatened		WL	4.51
California Tiger Salamander - Centra	Ambystoma californiense pop. 1	716	Threatened	Threatened		WL	4.61
Foothill Yellow-legged Frog - North (	Rana boylii pop. 1	1567	None	None		SSC	4.34
American Peregrine Falcon	Falco peregrinus anatum	42	Delisted	Delisted		FP	4.56
Black-crowned Night Heron	Nycticorax nycticorax	27	None	None			1.97
Burrowing Owl	Athene cunicularia	858	None	None		SSC	0.36
Burrowing Owl	Athene cunicularia	70	None	None		SSC	0.98
Burrowing Owl	Athene cunicularia	113	None	None		SSC	3.18
Burrowing Owl	Athene cunicularia	145	None	None		SSC	3.26
Burrowing Owl	Athene cunicularia	119	None	None		SSC	3.71
Burrowing Owl	Athene cunicularia	440	None	None		SSC	4.15
Burrowing Owl	Athene cunicularia	116	None	None		SSC	4.28
Burrowing Owl	Athene cunicularia	118	None	None		SSC	4.87
California Black Rail	Laterallus jamaicensis coturniculus	20	None	Threatened		FP	0.23
California Black Rail	Laterallus jamaicensis coturniculus	178	None	Threatened		FP	0.97
California Black Rail	Laterallus jamaicensis coturniculus	22	None	Threatened		FP	1.64
California Black Rail	Laterallus jamaicensis coturniculus	118	None	Threatened		FP	1.71
California Black Rail	Laterallus jamaicensis coturniculus	129	None	Threatened		FP	2.03
California Ridgway's Rail	Rallus obsoletus obsoletus	80	Endangered	Endangered		FP	1.38
California Ridgway's Rail	Rallus obsoletus obsoletus	95	Endangered	Endangered		FP	1.45
California Ridgway's Rail	Rallus obsoletus obsoletus	67	Endangered	Endangered		FP	1.73
California Ridgway's Rail	Rallus obsoletus obsoletus	94	Endangered	Endangered		FP	1.76
California Ridgway's Rail	Rallus obsoletus obsoletus	96	Endangered	Endangered		FP	3.25
California Ridgway's Rail	Rallus obsoletus obsoletus	97	Endangered	Endangered		FP	4.10
Ferruginous Hawk	Buteo regalis	22	None	None		WL	3.47
Northern Harrier	Circus hudsonius	31	None	None		SSC	2.27

Saltmarsh Common Yellowthroat	Geothlypis trichas sinuosa	116	None	None	SSC	0.36
Saltmarsh Common Yellowthroat	Geothlypis trichas sinuosa	91	None	None	SSC	0.86
Saltmarsh Common Yellowthroat	Geothlypis trichas sinuosa	92	None	None	SSC	1.97
Saltmarsh Common Yellowthroat	Geothlypis trichas sinuosa	90	None	None	SSC	2.08
Saltmarsh Common Yellowthroat	Geothlypis trichas sinuosa	93	None	None	SSC	2.97
Short-eared Owl	Asio flammeus	12	None	None	SSC	4.22
Snowy Egret	Egretta thula	18	None	None		1.97
Suisun Song Sparrow	Melospiza melodia maxillaris	41	None	None	SSC	0.36
Suisun Song Sparrow	Melospiza melodia maxillaris	25	None	None	SSC	0.69
Suisun Song Sparrow	Melospiza melodia maxillaris	11	None	None	SSC	1.73
Suisun Song Sparrow	Melospiza melodia maxillaris	23	None	None	SSC	2.08
Suisun Song Sparrow	Melospiza melodia maxillaris	24	None	None	SSC	2.97
Suisun Song Sparrow	Melospiza melodia maxillaris	35	None	None	SSC	3.83
Suisun Song Sparrow	Melospiza melodia maxillaris	12	None	None	SSC	4.25
Suisun Song Sparrow	Melospiza melodia maxillaris	36	None	None	SSC	4.66
Swainson's Hawk	Buteo swainsoni	2746	None	Threatened		3.62
Swainson's Hawk	Buteo swainsoni	1372	None	Threatened		4.74
Tricolored Blackbird	Agelaius tricolor	833	None	Threatened	SSC	2.07
Tricolored Blackbird	Agelaius tricolor	837	None	Threatened	SSC	3.18
Tricolored Blackbird	Agelaius tricolor	670	None	Threatened	SSC	3.78
Tricolored Blackbird	Agelaius tricolor	834	None	Threatened	SSC	4.06
White-tailed Kite	Elanus leucurus	97	None	None	FP	3.45
Yellow Rail	Coturnicops noveboracensis	40	None	None	SSC	1.77
Yellow Rail	Coturnicops noveboracensis	2	None	None	SSC	4.44
Green Sturgeon - Southern DPS	Acipenser medirostris pop. 1	10	Threatened	None		3.97
Longfin Smelt	Spirinchus thaleichthys	30	Candidate	Threatened		0.00
Longfin Smelt	Spirinchus thaleichthys	29	Candidate	Threatened		3.91
Sacramento Splittail	Pogonichthys macrolepidotus	4	None	None	SSC	1.95
Hoary Bat	Lasiurus cinereus	122	None	None		0.00
Salt-marsh Harvest Mouse	Reithrodontomys raviventris	153	Endangered	Endangered	FP	0.00
Salt-marsh Harvest Mouse	Reithrodontomys raviventris	114	Endangered	Endangered	FP	0.41
Salt-marsh Harvest Mouse	Reithrodontomys raviventris	167	Endangered	Endangered	FP	0.56
Salt-marsh Harvest Mouse	Reithrodontomys raviventris	71	Endangered	Endangered	FP	0.75
Salt-marsh Harvest Mouse	Reithrodontomys raviventris	121	Endangered	Endangered	FP	1.01
Salt-marsh Harvest Mouse	Reithrodontomys raviventris	112	Endangered	Endangered	FP	1.74
Salt-marsh Harvest Mouse	Reithrodontomys raviventris	142	Endangered	Endangered	FP	1.75
Salt-marsh Harvest Mouse	Reithrodontomys raviventris	166	Endangered	Endangered	FP	2.03
Salt-marsh Harvest Mouse	Reithrodontomys raviventris	198	Endangered	Endangered	FP	2.17
Salt-marsh Harvest Mouse	Reithrodontomys raviventris	122	Endangered	Endangered	FP	2.77
Salt-marsh Harvest Mouse	Reithrodontomys raviventris	13	Endangered	Endangered	FP	3.71
Salt-marsh Harvest Mouse	Reithrodontomys raviventris	111	Endangered	Endangered	FP	3.82
Salt-marsh Harvest Mouse	Reithrodontomys raviventris	197	Endangered	Endangered	FP	3.92
Salt-marsh Harvest Mouse	Reithrodontomys raviventris	149	Endangered	Endangered	FP	4.46
Salt-marsh Harvest Mouse	Reithrodontomys raviventris	179	Endangered	Endangered	FP	4.88
Suisun Shrew	Sorex ornatus sinuosus	5	None	None	SSC	0.00
Suisun Shrew	Sorex ornatus sinuosus	15	None	None	SSC	2.26
Suisun Shrew	Sorex ornatus sinuosus	14	None	None	SSC	2.76
Suisun Shrew	Sorex ornatus sinuosus	16	None	None	SSC	3.13
Suisun Shrew	Sorex ornatus sinuosus	6	None	None	SSC	3.83
Western Pond Turtle	Emys marmorata	600	None	None	SSC	3.96
California Linderiella	Linderiella occidentalis	211	None	None		0.94
California Linderiella	Linderiella occidentalis	207	None	None		1.50
California Linderiella	Linderiella occidentalis	202	None	None		3.76
Conservancy Fairy Shrimp	Branchinecta conservatio	14	Endangered	None		3.25
Hairy Water Flea	Dumontia oregonensis	2	None	None		3.82
Vernal Pool Fairy Shrimp	Branchinecta lynchi	331	Threatened	None		2.67
Vernal Pool Fairy Shrimp	Branchinecta lynchi	184	Threatened	None		3.26
Vernal Pool Fairy Shrimp	Branchinecta lynchi	666	Threatened	None		4.05
Vernal Pool Fairy Shrimp	Branchinecta lynchi	399	Threatened	None		4.30
Vernal Pool Tadpole Shrimp	Lepidurus packardi	97	Endangered	None		3.26
Vernal Pool Tadpole Shrimp	Lepidurus packardi	158	Endangered	None		3.76
Crotch Bumble Bee	Bombus crotchii	306	None	Candidate Endar		4.64
Monarch - California Overwintering	Danaus plexippus plexippus pop. 1	23	Candidate	None		0.46
Valley Elderberry Longhorn Beetle	Desmocerus californicus dimorphus	211	Threatened	None		3.78
Valley Elderberry Longhorn Beetle	Desmocerus californicus dimorphus	230	Threatened	None		3.78
Valley Elderberry Longhorn Beetle	Desmocerus californicus dimorphus	192	Threatened	None		4.00

Valley Elderberry Longhorn Beetle	Desmocerus californicus dimorphus	299	Threatened	None	4.71
Western Bumble Bee	Bombus occidentalis	124	None	Candidate Endar	0.69
Western Bumble Bee	Bombus occidentalis	183	None	Candidate Endar	2.73
Coastal Brackish Marsh	Coastal Brackish Marsh	4	None	None	0.01
Coastal Brackish Marsh	Coastal Brackish Marsh	5	None	None	1.73
Coastal Brackish Marsh	Coastal Brackish Marsh	16	None	None	4.25
Northern Claypan Vernal Pool	Northern Claypan Vernal Pool	31	None	None	0.00

APPENDIX E. CULTURAL RESOURCES STUDY

The Cultural Resources Study is available for review at the District by qualified individuals only.

APPENDIX F. NOISE DATA

Construction Noise Calculations for Potential Adverse Effects

Source	Noise Generating Equipment (Project Applicant List)[1]	Noise Generating Equipment (USDOT List)[2]	Acoustical Usage Factor[2]	Maximum Noise Level @ 50 feet (Lmax)[3]	Typical Noise Level @ 50 feet (dBA_1)[4]	Ground Absorption Constant (G)	Reference Distance (D_1)	Distance to Receptor (D_2)	Noise Level at Receptor (dBA_2)	Maximum Noise Level at Receptor	Noise Threshold	Buffer Distance to Threshold
		Unit:	%	dBA Lmax	dBA Leq	unitless	feet	feet	dBA Leq	dBA Leq	dBA Leq	feet
Construction	Cat 335 Excavator	Excavator	40	85	81	0	50	20	89	93	90	29
	Cat 624 Loader	Backhoe	40	80	76	0	50	20	84			
	John Deere 410 Backhoe	Backhoe	40	80	76	0	50	20	84			
	Dodge Ram 5500	Pickup Truck	40	55	51	0	50	20	59			
	Dodge Ram 3500	Pickup Truck	40	55	51	0	50	20	59			
	Doosan P185 Portable Air Compressor	Compressor (air)	40	80	76	0	50	20	84			
	Llanda 7000 psi Pressure Washer	Pheumatic Tools	50	85	82	0	50	20	90			
	Honda 6500 Portable Power	Generator	50	82	79	0	50	20	87			
	Resin Static Mixer	All other Equipment>5 HP	50	85	82	0	50	20	90			
	Reach Lift	All other Equipment>5 HP	50	85	82	0	50	20	90			
	Conveyor/Pinch Roller Trailer	All other Equipment>5 HP	50	85	82	0	50	20	90			
	Refrigeration Truck	Flat Bed Truck	40	84	80	0	50	20	88			
	Generator	Generator	50	82	79	0	50	20	87			
	Air Compressor 185	Compressor (air)	40	80	76	0	50	20	84			
	Resin Pump/Heat Exchanger	Pumps	50	77	74	0	50	20	82			
	CIPP Boiler Truck/Trailer	Flat Bed Truck	40	84	80	0	50	20	88			
	Semi Trucks	Flat Bed Truck	40	84	80	0	50	20	88			
	6" Gorman Rupp Circulation Pumps	Pumps	50	77	74	0	50	20	82			
	Vacuum Pump	Pumps	50	77	74	0	50	20	82			
	12" Bypass Pumps	Pumps	50	77	74	0	50	20	82			
	Reach Lift	All other Equipment>5 HP	50	85	82	0	50	20	90			
	Fusion Machine	All other Equipment>5 HP	50	85	82	0	50	20	90			
	Vactor Jetter/Combo Cleaner	Flat Bed Truck	40	84	80	0	50	20	88			
	TV Truck	Flat Bed Truck	40	84	80	0	50	20	88			

Notes:

receptor

$dBA_2 = dBA_1 + 10 * \log_{10}(D_1/D_2)^{2+G}$

Where:

dBA_2 = Noise level at receptor

dBA_1 = Noise level at reference distance

D_1 = Reference distance

D_2 = Receptor distance

G = Ground absorption constant (0 for hard surface, 0.5 for soft surface)

Combined noise levels at receptor calculated for two noisiest equipment using decibel addition:

$L = 10 * \log_{10}(10^{(L_1/10)}+10^{(L_2/10)})$

L = Combined noise level

L_1 = Noise level for first noisiest piece of equipment

L_2 = Noise level for second noisiest piece of equipment

[1] The type of construction equipment is based on construction equipment list provided by the applicant.

[2] U.S. Department of Transportation, 2006. FHWA Highway Construction Noise Handbook, Table 9.1. August.

[3] Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Table 7-1. September.

[4] California Department of Transportation, 1998. Technical Noise Supplement (TeNS). Equation N-2141.2. October.

Construction Vibration Calculations for Potential Disturbance

Typical Ground-Borne Vibration Equipment	Typical Vibration Level[1] (RMS_1)	Receptor Type	Vibration Threshold	Reference Distance (D_1)	Receptor Distance (D_2)	Equipment Used for Project?	Vibration Level @ Receptor (RMS_2)	Buffer Distance to Threshold
Unit:	VdB	--	VdB	feet	feet	--	VdB	feet
Pile Driver (impact)	104	Residence	80	25	20	No	--	--
Pile Driver (sonic)	93	Residence	80	25	20	No	--	--
Vibratory Roller	94	Residence	80	25	20	No	--	--
Hoe Ram	87	Residence	80	25	20	No	--	--
Large bulldozer	87	Residence	80	25	20	No	--	--
Caisson drilling	87	Residence	80	25	20	No	--	--
Loaded trucks	86	Residence	80	25	20	Yes	89	40
Jackhammer	79	Residence	80	25	20	No	--	--
Small bulldozer	58	Residence	80	25	20	No	--	--

Notes:

"--" = not applicable

Vibration levels at a distance was calculated based on the following equation:[2]

$RMS_2=RMS_1-30*\log_{10}(D_2/D_1)$

where

RMS_1 is the reference vibration level at a specified distance

RMS_2 is the calculated vibration level

D_1 is the reference distance

D_2 is the distance from the equipment to the receiver

[1] Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Table 7-4. September.

[2] Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Equations 7-3. September.

Construction Vibration Calculations for Potential Building Damage

Typical Ground-Borne Vibration Equipment	Typical Vibration Level[1] (PPV_1)	Receptor Type	Vibration Threshold	Reference Distance (D_1)	Receptor Distance (D_2)	Equipment Used for Project?	Vibration Level @ Receptor (PPV_2)	Buffer Distance to Threshold
Unit:	in/sec	--	in/sec	feet	feet	--	in/sec	feet
Pile Driver (impact)	0.644	Older Residential Structure	0.3	25	20	No	--	--
Pile Driver (sonic)	0.17	Older Residential Structure	0.3	25	20	No	--	--
Vibratory Roller	0.21	Older Residential Structure	0.3	25	20	No	--	--
Hoe Ram	0.089	Older Residential Structure	0.3	25	20	No	--	--
Large bulldozer	0.089	Older Residential Structure	0.3	25	20	No	--	--
Caisson drilling	0.089	Older Residential Structure	0.3	25	20	No	--	--
Loaded trucks	0.076	Older Residential Structure	0.3	25	20	Yes	0.11	10
Jackhammer	0.035	Older Residential Structure	0.3	25	20	No	--	--
Small bulldozer	0.003	Older Residential Structure	0.3	25	20	No	--	--

Notes:

"--" = not applicable

Buffer distance to vibration threshold for building damage calculated based on the following equation:[2]

$D_2 = (PPV_1 / PPV_2)^{(1 / 1.5)} * D_1$

Where:

PPV_1 = Vibration level at reference distance

PPV_2 = Vibration threshold for building damage

D_1 = Reference distance

D_2 = Distance to Receptor

[1] Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Table 7-4. September.

[2] Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Equations 7-2. September.