



Fairfield-Suisun
Sewer District

BLOWER REPLACEMENT

Project (2016)

Public Draft Initial Study/Mitigated Negative Declaration



September 2016



Fairfield-Suisun Sewer District Blower Replacement Project (2016)

Initial Study/Mitigated Negative Declaration

Prepared by:



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Table of Contents

Chapter 1 Introduction	1-1
1.1 Project Location, Setting, and Background	1-1
1.2 Goal and Objective and Purpose and Need	1-3
1.3 Document Organization and Review Process	1-3
Chapter 2 Proposed Project Description and Alternatives	2-1
2.1 Proposed Project/Action Description	2-1
2.2 Construction Considerations	2-4
2.3 Responsible Agencies, Permits and Approvals	2-5
2.4 No Project/Action Alternative	2-5
Chapter 3 Environmental Review and Consequences.....	3-1
3.1 Aesthetics	3-2
3.2 Agricultural Resources	3-4
3.3 Air Quality	3-5
3.4 Biological Resources	3-11
3.5 Cultural Resources	3-16
3.6 Geology and Soils.....	3-19
3.7 Hazards and Hazardous Materials.....	3-22
3.8 Hydrology and Water Quality	3-26
3.9 Land Use and Planning.....	3-28
3.10 Mineral Resources	3-29
3.11 Noise.....	3-30
3.12 Population and Housing.....	3-32
3.13 Public Services	3-33
3.14 Recreation.....	3-34
3.15 Socioeconomics.....	3-35
3.16 Traffic and Transportation	3-36
3.17 Utilities and Service Systems.....	3-38
3.18 Mandatory Findings of Significance	3-40
Chapter 4 Determination.....	4-1
Chapter 5 Bibliography	5-1

List of Tables

Table 1: Typical Construction Equipment for Construction Proposed Project/Action	2-4
Table 2: Regulatory Requirements, Permits, and Authorizations for Project Facilities.....	2-5
Table 3: Proposed Project/Action Construction Emissions.....	3-7

List of Figures

Figure 1: Fairfield-Suisun Sewer District Treatment Plant and Service Area	1-2
Figure 2: Site and Key Plans.....	2-2
Figure 3: Major Outdoor Facilities and Activities	2-3
Figure 4: Location of Federal and State Species.....	3-13

Appendices

Appendix A: Air Quality Emissions Calculations.....	A-1
Appendix B: Potential for Special Status Species to Occur within the Project Area.....	B-1
Appendix C: Federally-Listed Biological Resources Report.....	C-1
Appendix D: Section 106 Cultural Resources Investigation Report.....	D-1

List of Abbreviations

ABWF	average base wastewater flow
ARB	Air Resources Board
BAAQMD	Bay Area Air Quality Management District
Basin	Bay Area Air Basin
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal EPA	California Environmental Protection Agency
Cal/OSHA	State of California Occupational Safety and Health Administration
CALTRANS	California Department of Transportation
CAP	Clean Air Plan
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CEQA- Plus	California Environmental Quality Act, Plus Federal Requirements
CESA	California Endangered Species Act
CGS	California Geological Survey
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society's
CWA	Federal Clean Water Act
dBA	Outdoor Ambient Sound levels
DPM	Diesel particulate matter
DTSC	Department of Toxics Substances Control
EA	Environmental Assessment
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact

gpd	gallons per day
gpm	gallons per minute
HCP	Habitat Conservation Plan
I/I	infiltration/inflow
ISA	International Society of Arboriculture Standards
IS	Initial Study
Leq	Equivalent Sound Level
LU	Landscape Unit
mgd	million gallons per day
MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zone 4
NAAQS	National Ambient Air Quality Standards
NBWRP	North Bay Water Recycling Program
ND	Negative Declaration
NEPA	National Environmental Quality Act
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NMFS	National Marine Fisheries Service
NO _x	Nitrous Oxides
NPDES	National Pollutant Discharge Elimination System
OHWM	Ordinary High Water Mark
PWWF	Peak wet weather flow
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SR	State Route
SRF	State Revolving Funds
SWPPP	Stormwater Pollution Prevention Permit
SWRCB	State Water Resources Control Board
TAZ	Traffic Analysis Zones
TSP	Total Suspended Particles
USACE	United States Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile Organic Compounds
WWTP	Wastewater Treatment Plant

Chapter 1 Introduction

This document is an Initial Study/Mitigated Negative Declaration (IS/MND) that addresses the potential environmental impacts of the Fairfield-Suisun Sewer District's (District's) proposed Blower Replacement Project (Proposed Project/Action) as defined in the District's *April 2016 Blower Replacement Project Final Preliminary Design Report*. The purpose of the Proposed Project/Action is to enhance the reliability and efficiency of the secondary treatment process aeration system.

Many successful projects and programs receive funding assistance in the form of low-interest loans and in some instances, grants are available to reduce the financial burden of initial capital and implementation costs. Funding programs are offered at times through the United States Department of Interior, Bureau of Reclamation (USBR), United States Department of Agriculture (USDA), the California State Water Resources Control Board (State Board), and/or the California Department of Water Resources (DWR). It is anticipated that the District will pursue funding from the State Revolving Fund (SRF) Loan Program that is administered by the State Board on behalf of the U.S. Environmental Protection Agency (USEPA). As a result, the Proposed Project/Action would be subject to the California Environmental Quality Act (CEQA) at a minimum where the District would be the CEQA Lead Agency to ensure that all of the applicable state environmental regulations are adhered to. Under the State Board's SRF Program, the State Board is responsible on behalf of the USEPA for ensuring that the project adheres to federal environmental regulations, including the Endangered Species Act, the National Historic Preservation Act (NHPA) and the General Conformity Rule for the Clean Air Act (CAA), among others. The USEPA has chosen to use the CEQA as the compliance base for California's SRF Loan Program, in addition to compliance with ESA, NHPA, and CAA. Collectively, the State Board calls these requirements CEQA-Plus. Additional federal regulations may also apply.

The purpose of this document is to provide project-level CEQA-Plus environmental analysis of the District's Proposed Project/Action to enhance the reliability and efficiency of the secondary treatment process aeration system. What follows is a review and analysis of the major state and federal environmental issues that may be a factor as a result in the construction and/or operation of the Proposed Project/Action. For this analysis, we have reviewed prior and relevant existing environmental documentation and have used a modified CEQA environmental checklist to assess the potential impacts on endangered/threatened species, public health or safety, natural resources, regulated waters, and cultural resources, among others to include and address specific issues associated with CEQA-Plus requirements. Based on our experience with evaluating these kinds of projects in California, most of the potential environmental issues appear to be short-term/temporary impacts due to construction activities, which can be avoided and/or mitigated to less-than-significant levels. For any potentially significant impact(s) identified, we have identified appropriate mitigation measures and strategies to attempt to avoid and/or reduce those impacts to less-than-significant levels. The information developed is designed to assist the District and/or the State Board determine what the major potential environmental impacts are to comply with CEQA and/or CEQA-plus requirements.

1.1 Project Location, Setting, and Background

The District is a special district, a legally constituted governmental entity established to fulfill a specific function – in the District's case, wastewater and stormwater management in a multi-jurisdictional environment. An act of the California Legislature in 1951 created the District to perform wastewater collection and treatment, and water recycling services for all property within the boundaries of Fairfield, Suisun City, and Travis Air Force Base. The District also operates a drainage maintenance utility that performs specified stormwater management services in conjunction with the cities in its service area. Establishment of the District has enabled well-coordinated management of local wastewater and stormwater.

The District serves more than 135,000 residential, commercial and industrial customers in central Solano County, about 40 miles northeast of San Francisco. Households, retail businesses, major food and beverage producers, light industries, manufactures, and vital military operations depend upon the District's service. Today, they serve a population more than 20 times that size. They have been able to accommodate the growth and evolving needs of the region by remaining flexible, dedicated to customer service and mindful of the trust placed in them to protect public health and the natural environment.

The District's current treatment facilities, which replaced two older plants in 1977, underwent major renovations and expansions in 1982, 1987, 1989, 2007, and 2010 to keep pace with population growth, economic expansion of our region and technological advancements.



Figure 1
Fairfield-Suisun Sewer District
Treatment Plant and Service Area

The District's treatment plant occupies about 150 acres¹ and is located in the southern portion of the City of Fairfield. It draws from a collection system that consists of 12 pump stations and a 70-mile network of sewers. The sewer conduits range from 12 inches to 48 inches in diameter. The replacement cost for the system is estimated at \$635 million—tangible evidence of the District's significant investment in infrastructure.

The Fairfield and Suisun City stormwater drainage systems serve an area of 41 square miles. The drainage system encompasses seven pump stations to maintain flow of stormwater to the natural creek system and the marsh.

The District safeguards public health and helps protect environmentally sensitive Suisun Marsh, which is the nation's largest brackish water marsh as well as the largest wetland on the Pacific Coast. This 116,000-acre region not only supports abundant plant life but also serves as a stopover for up to 1.5 million migratory birds traversing the Pacific Flyway each year. The District is proud to play a part in the preservation of these marshlands.

¹ The District also owns an additional 380 acres mostly to the east and the north of the fenced wastewater treatment plant boundaries.

1.2 Goal and Objective and Purpose and Need

The primary purpose of the Proposed Project/Action is to enhance the reliability and efficiency of the secondary treatment process aeration system. There are several issues with the existing aeration system including leaking air header piping, obsolete and inefficient blowers, lack of properly sized redundant equipment, and electrical gear that has exceeded its useful design life. The secondary treatment process is one of the most critical processes in the plant and any prolonged disruption to the aeration system could severely impact the District's ability to meet its discharge requirements. For these reasons, the District has decided to undertake this project.

1.3 Document Organization and Review Process

This document is intended to provide a preliminary environmental investigation of the Proposed Project/Action to determine if it may have a significant adverse impact on the environment. This document is organized into the following chapters:

- Chapter 1, Introduction. Chapter 1 describes the background, goals and objectives of the Proposed Project/Action, and document contents.
- Chapter 2, Proposed Project Description and Alternatives. Chapter 2 describes the major components of the Proposed Project/Action and describes the No Project/Action Alternative.
- Chapter 3, Environmental Review and Consequences. Chapter 3 discusses the potential environmental impacts associated with the construction and operation of the Proposed Project/Action. Each resource section of a modified CEQA checklist is followed by a discussion of each potential impact listed in that section. It also presents corresponding mitigation measures proposed to avoid or reduce potentially significant impacts to a less-than-significant level. This checklist has been modified to include additional topics to meet CEQA-Plus requirements.
- Chapter 4, Determination. Chapter 4 provides the proposed action as a result of this IS/MND and EA/FONSI.
- Chapter 5, Bibliography. Chapter 5 provides a list of reference materials and persons consulted during the preparation of the environmental issues and constraints evaluation.

This document will be available for a 30-day public review period, during which written comments may be submitted to the following address:

Mr. Hamid Sarvi
Fairfield-Suisun Sewer District
1010 Chadbourne Road
Fairfield, CA 94534
Phone: 707-428-9107
hsarvi@fssd.com

Responses to written comments received by the end of the 30-day public review period will be prepared and included in the final document to be considered by the District and/or the State Board prior to taking any discretionary decision/action on the Proposed Project/Action.

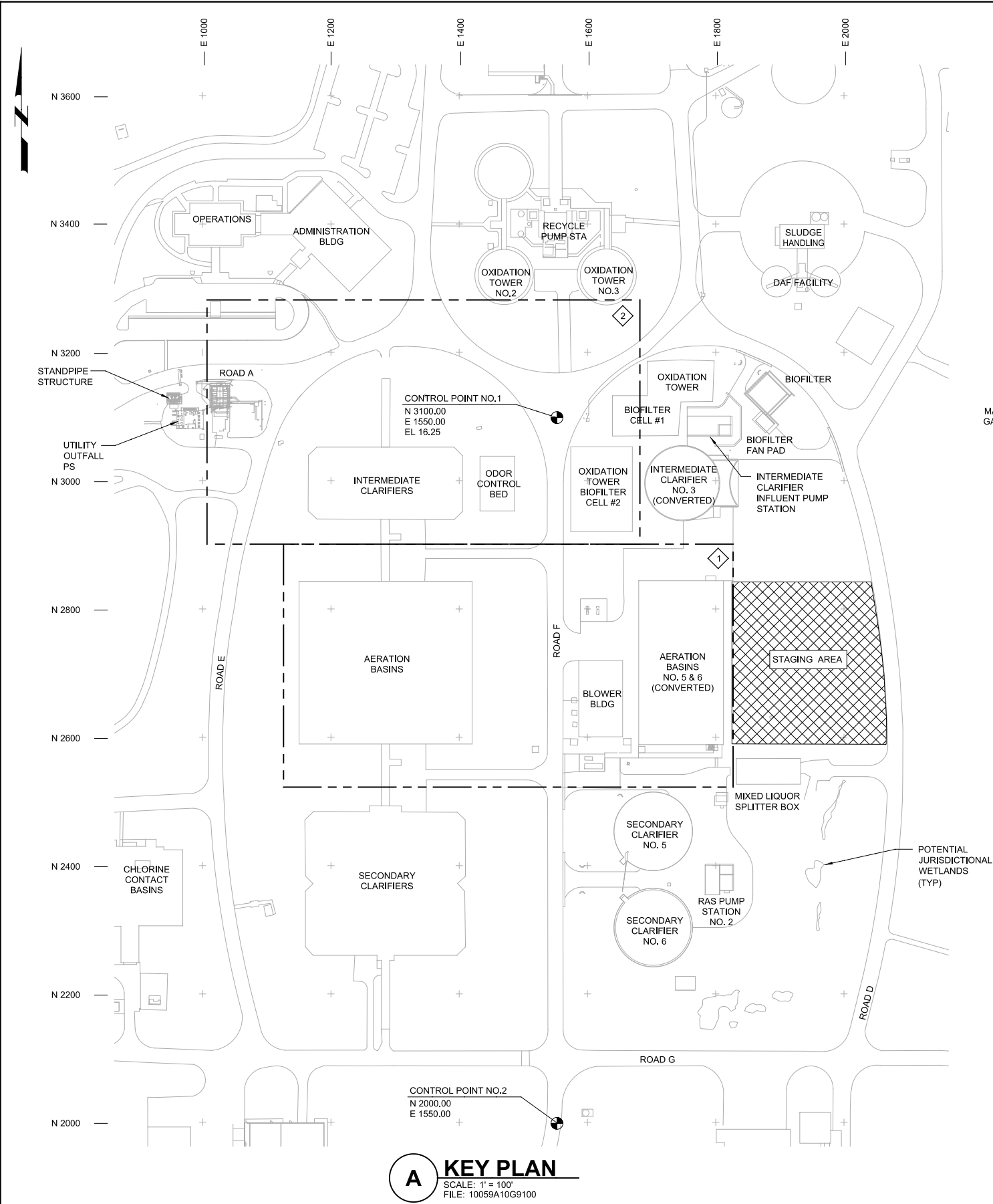
Chapter 2 Proposed Project Description and Alternatives

This chapter provides a detailed description of Proposed Project/Action including a discussion of the construction considerations and potential approvals and permits that may be necessary. In addition, this section also describes the No Project/Action Alternative.

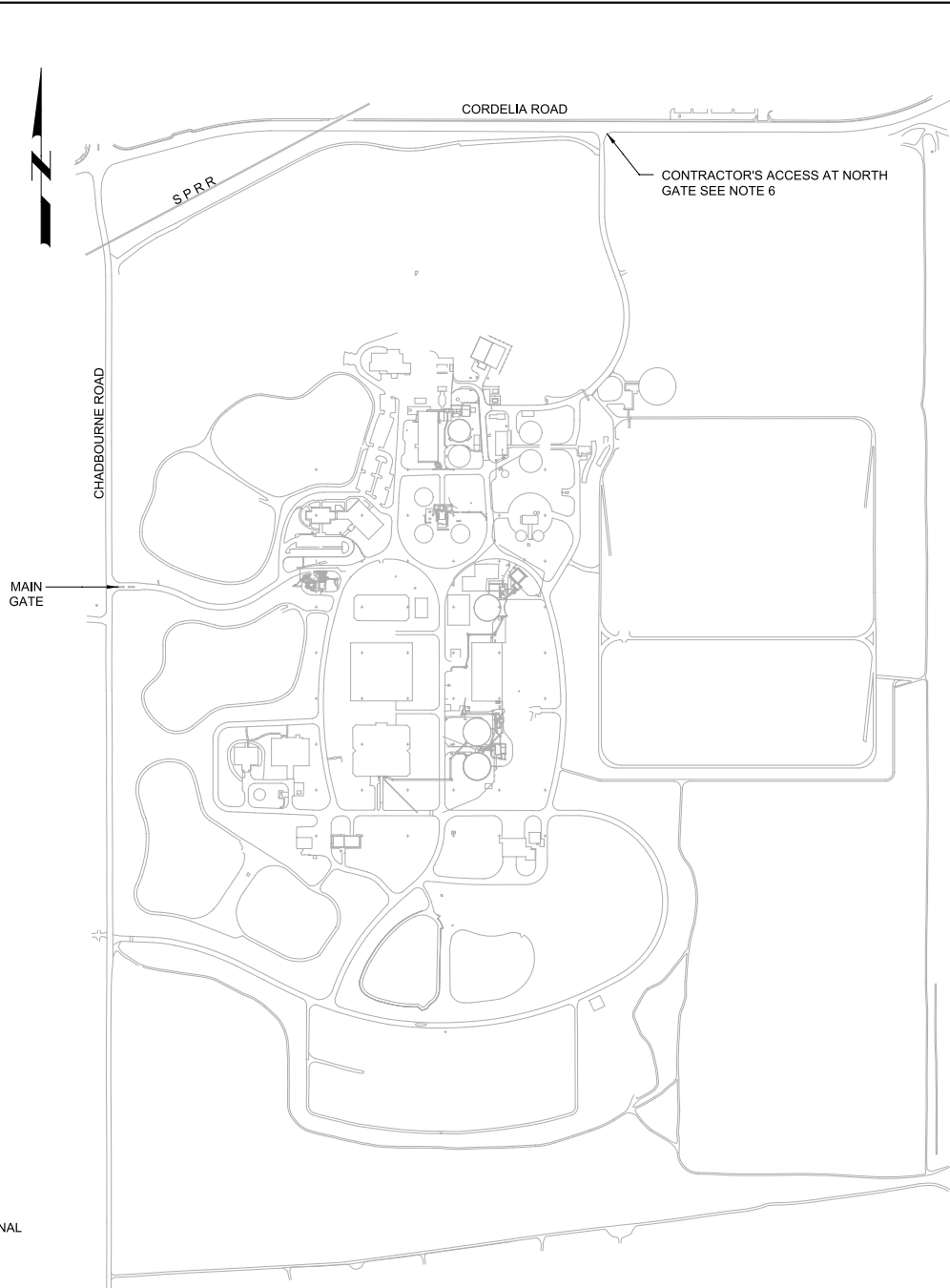
2.1 Proposed Project/Action Description

The primary purpose of the Proposed Project/Action is to enhance the reliability and efficiency of the secondary treatment process aeration system. There are several issues with the existing aeration system including leaking air header piping, obsolete and inefficient blowers, lack of properly sized redundant equipment, and electrical gear that has exceeded its useful design life. The secondary treatment process is one of the most critical processes in the plant and any prolonged disruption to the aeration system could severely impact the District's ability to meet its discharge requirements. For these reasons, the District has decided to undertake this project. As shown on Figures 2 and 3 - and more fully described in the District's *April 2016 Blower Replacement Project Preliminary Design Report*, the project will consist of the following elements:

- ***New Aeration Blower Equipment*** - Existing obsolete and oversized blower equipment within the existing Blower Building will be demolished and replaced with new high efficiency blowers. Blowers will be designed to meet current process demand conditions of 22,500 standard cubic feet per minute (scfm) as determined by the secondary treatment process evaluation conducted during preliminary design. Total blower duty horsepower will be approximately 1,200 horsepower (Hp) with one redundant unit provided.
- ***Electrical System and Controls*** - The existing obsolete electrical gear including the 480-volt motor control center 'MCC-R1', 480-volt switchgear 'EDR', 4160-volt transformers and switchgear, and the 480-volt standby generator 'ME-48', will be demolished and replaced. Replacement electrical and controls major equipment and components will consist of the following elements:
 - Two new outdoor 2,500kVA, 12kV-480V substations (for electrical supply to new blower equipment).
 - Approximately 500-linear feet of new 12-kV ductbank (approximately 30 inches wide by 24 inches high) between the existing 12-kV switchgear and Blower Building will be provided for routing of new dedicated 12-kV conductors to serve the blowers. The buried ductbank facility will be routed in parallel alignment to an existing ductbank within previously improved areas and will not cross any creeks or drainages. For construction, the trench is estimated to be approximately 2- to 4-feet wide, 6-feet deep, and 500-feet long. However, the District may decide to use horizontal directional drilling as an alternative method for installing the four 5-inch conduits. Once constructed, the alignment corridor will be returned to pre-construction conditions.
 - A new 480-volt "three-bus" power switchgear line-up for supplying power to the new blower equipment and connection to the new standby generator.
 - A new 2,500kVA, 480-volt diesel engine-driven standby generator for standby power supply to the new blower equipment and the new 480-volt switchgear equipment. The generator will be installed inside the existing Blower Building. The existing above grade fuel storage tanks serving the existing generator will be replaced with a new 660-gallon fuel tank to supply fuel to the new generator.
 - Replace existing 480-volt motor control center MCC-R1 with a new 480-volt MCC.



A KEY PLAN
SCALE: 1" = 100'
FILE: 10059A10G9100



B SITE PLAN
SCALE: 1" = 400'
FILE: 10059A10G9100

AREA - DRAWING SCHEDULE			
AREA PLAN	YARD PIPING AND UTILITY DRAWING NO.	PAVING AND GRADING DRAWING NO.	ELECTRICAL SITE PLAN DRAWING NO.
1	C-4	C-8	E-5
2	N/A	N/A	E-6

LEGEND:

 CONTRACTOR'S STAGING AREA

- GENERAL NOTES:**
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE STARTING WORK AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
 - UNLESS DETAILED, SPECIFIED, OR OTHERWISE INDICATED ON THE DRAWINGS, CONSTRUCTION SHALL BE AS INDICATED IN THE APPLICABLE TYPICAL DETAILS AND GENERAL NOTES. TYPICAL DETAILS SHALL APPLY EVEN THOUGH NOT REFERENCED AT SPECIFIC LOCATIONS ON DRAWINGS.
 - WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF WORK, DETAILS SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.
 - CONTRACTOR SHALL FIELD VERIFY THE VERTICAL AND HORIZONTAL LOCATIONS OF PIPES AND STRUCTURES PRIOR TO CONSTRUCTION.
 - CONTRACTOR SHALL FIELD VERIFY PIPE MATERIAL OF EXISTING CONNECTING PIPES PRIOR TO CONSTRUCTION.
 - CONTRACTOR ACCESS AND DELIVERIES SHALL BE THROUGH NORTH GATE. PLACE TRAFFIC ROUTING SIGNS AT CORNER OF CHADBOURNE AND CORDELIA ROADS AND ALSO AT NORTH ENTRY GATE.
 - ELECTRICAL POWER SOURCE FOR STAGING AREA TO BE SUPPLIED BY DISTRICT. INTERRUPTION OF POWER MAY OCCUR PERIODICALLY DUE TO MAINTENANCE WORK, CONSTRUCTION RELATED ACTIVITIES OR OTHER UNPLANNED REASONS.
 - HYDROSEED ALL DISTURBED AREAS PRIOR TO BEGINNING OF EACH WET WEATHER SEASON DURING THE COURSE OF THE PROJECT AND AFTER SUBSTANTIAL COMPLETION.
 - CONTRACTOR SHALL REPLACE IN KIND OR REPAIR EXISTING ITEMS DAMAGED BY THE CONTRACTOR'S ACTIVITIES INCLUDING BUT NOT LIMITED TO LANDSCAPE IRRIGATION SYSTEM PIPING AND RELATED ELECTRICAL CONDUITS. NOT ALL EXISTING ITEMS ARE SHOWN ON THE DRAWINGS. THE DRAWINGS OF EXISTING ITEMS ARE AVAILABLE FROM THE OWNER ON REQUEST.

- SURVEY NOTES:**
- SURVEY BASE DRAWING BY HAMMOND, JENSEN, WALLIN AND ASSOCIATES, INC. (DEC 12, 1993).
 - THE BASE DRAWING (EXISTING FEATURES) IS APPROXIMATE AND FOR INFORMATION ONLY. THE CONTRACTOR SHALL VERIFY ALL LAYOUTS PRIOR TO CONSTRUCTION.
 - THE SURVEY DATA IS BASED ON EXISTING PLANT DATUM. DRAWINGS INCLUDED HEREIN USE PLANT DATUM.
 - USE HORIZONTAL CONTROL POINTS AND BENCHMARK INDICATED ON PLANS BY . CONTRACTOR SHALL VERIFY CONTROL PRIOR TO BEGINNING WORK.

					DATE MARCH 2016					BLOWER REPLACEMENT PROJECT (2016) PROJECT NO. XXXX		Figure 2
					DESIGNED BY RGL					SITE AND KEY PLANS		
					DRAWN BY OB							
					CHECKED BY							
REV	DATE	BY	DESCRIPTION		JOB NUMBER 10059A10	DATE	 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		OF XX SHEETS	



Figure 3
Major Outdoor Improvements and Activities

- Upgrade the existing Blower Building PLC equipment hardware with new, Allen-Bradley ControlLogix hardware.
- **Air Header Replacement** - The existing 54-inch diameter buried aeration air headers for the secondary treatment process will be abandoned and replaced due to known air leaks in the piping system. This will involve installation of a new 36-inch diameter above grade coated carbon steel pipe. The new pipe will be installed approximately 15-feet above grade with cast-in drilled hole (CIDH) pier supports spaced at 30-foot max spacing and drilled to approximately 25-foot depth. The existing pipe will be filled with concrete slurry and abandoned in place.

The final pre-design report was completed in April 2016. The project is currently in the final design phase with design completion scheduled for December 2016 and construction in 2017-2018.

2.2 Construction Considerations

Construction of the Proposed Project/Action facilities is expected to begin in the spring/summer of 2017 and will likely continue for 18-months into the fall of 2018. Construction work will typically be done within normal working hours, weekdays between the hours of 7 a.m. and 4 p.m., and possibly on Saturdays between the hours of 7 a.m. and 4 p.m. The Proposed Project/Action would be constructed entirely within the District's existing wastewater treatment plant. During construction, approximately 10-15 people would be working on the Proposed Project/Action. Table 1 provides a list of the typical construction equipment that may be used for the construction of the Proposed Project/Action. As shown in Figure 2 above, a temporary staging area would be used to store materials, construction equipment, job trailer(s), and other materials needed for construction activities. The construction area would be approximately 0.5 acres in size and would be outside of a potential wetland area² to the west. The construction activities would take place within the areas designated in Figure 2 and entirely within the boundaries of the District's wastewater treatment plant site. The District will employ appropriate construction best management practices (BMPs). As a final step of construction activities, the construction site would be cleaned up and restored to previous conditions. Construction trash and debris would be collected and disposed of properly.

Table 1 Typical Construction Equipment for Project/Action Facilities	
Equipment	Use
Backhoe	Excavating trenches for ductbank
Excavator	Excavating trenches for ductbank
Cast-in-Drill Hole (CIDH) Drilling Equipment	Installing Air Header supports
Loader	Move and carry construction materials, equipment, and debris
Roller/Compactor	Soil Compaction
Cranes	Off loading equipment, materials and laying ductbank
Semi-trailer trucks	Delivering materials, equipment, and removal of debris

² This area has not been confirmed to be an actual wetland and is not on the U.S. Fish and Wildlife list of known wetlands. Regardless, the Proposed Project would not affect this area.

Table 1 Typical Construction Equipment for Project/Action Facilities	
Equipment	Use
Forklift	Lifting equipment and materials
Pick-up trucks	General use and hauling of minor equipment, tools, and materials
Scissor Lift	Elevated air header piping installation and coatings.
Concrete trucks and pumps	Air header sealment and pad construction
Water Truck	Compaction, erosion, and dust control

Once constructed, the District would resume existing day-to-day operations and maintenance procedures. No new permanent District employees are anticipated to be required for the Proposed Project/Action.

2.3 Responsible Agencies, Permits and Approvals

Table 2 below summarizes the potential permits and/or approvals that may be required prior to construction of the Proposed Project/Action. Additional local approvals and permits may also be required.

Table 2 Regulatory Requirements, Permits, and Authorizations for Project/Action Facilities	
Agency	Type of Approval
California Division of Occupational Safety and Health	Construction activities in compliance with CAL/OSHA safety requirements
San Francisco Bay Area Air Quality Management District (BAAQMD)	Authority to Construct
	Permit to Operate
San Francisco Bay Regional Water Quality Control Board	National Pollutant Discharge Elimination System
	General Permit for Stormwater Discharge Associated with Construction Activities

2.4 No Project/Action Alternative

Under the No Project/Action Alternative, the District's Proposed Project/Action would not be constructed and therefore impacts as a result of this specific Proposed Project/Action as described here within this document would not be encountered. For this analysis, it is assumed that the existing baseline condition and the future No Project/Action condition are the same. This No Project/Action Alternative assumes that none of the Proposed Project/Action facilities would be constructed. As a result, the impact description and summary compares the Proposed Project/Action to the No Project/Action.

Chapter 3 Environmental Review and Consequences

This chapter evaluates the potential for the Proposed Project/Action to have a significant effect on the environment. Using a modified CEQA Environmental Checklist Form as presented in Appendix G of the CEQA Guidelines as a framework, the checklist identifies the potential environmental impacts of the Proposed Project/Action pursuant to both CEQA and NEPA. This document compares the Proposed Project/Action against the No Project/Action Alternative as is required by CEQA and CEQA-Plus.

Environmental Impact Designations

For this checklist, the following designations are used to distinguish between levels of significance of potential impacts to each resource area:

Potentially Significant Impact. Adverse environmental consequences that have the potential to be significant according to the threshold criteria identified for the resource, even after mitigation strategies are applied and/or an adverse effect that could be significant and for which no mitigation has been identified. If any resultant potentially significant impacts are identified, an EIR/EIS may need to be prepared to meet CEQA, CEQA-Plus and/or NEPA requirements, respectively.

Less-than-Significant Impact with Mitigation. Adverse environmental consequences that have the potential to be significant, but can be reduced to less-than-significant levels through the application of identified mitigation strategies that have not already been incorporated into the Proposed Project/Action description.

Less-than-Significant Impact. Potential adverse environmental consequences have been identified. However, they are not so adverse as to meet the significance threshold criteria for that resource. Therefore, no mitigation measures are required.

No Impact. No adverse environmental consequences have been identified for the resource or the consequences are negligible or undetectable. Therefore, no mitigation measures are required.

Environmental Resources Evaluated

The following are the key environmental resources that were evaluated in this document.

- | | | |
|---|---|--|
| ☒ Aesthetics | ☒ Hazards/Hazardous Materials | ☒ Population and Housing |
| ☒ Agriculture Resources | ☒ Hydrology / Water Quality | ☒ Recreation |
| ☒ Air Quality | ☒ Land Use / Planning | ☒ Socioeconomics |
| ☒ Biological Resources | ☒ Mineral Resources | ☒ Transportation/Traffic |
| ☒ Cultural Resources | ☒ Noise | ☒ Utilities and Service Systems |
| ☒ Geology / Soils | ☒ Public Services | ☒ Mandatory Findings of Significance |

3.1 Aesthetics

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the Proposed Project/Action:				
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) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Discussion

- (a) **No Impact.** The Proposed Project/Action is not located in or near any designated scenic vistas and therefore would not have a substantial impact on a scenic vista. Specifically, the Proposed Project/Action would be located entirely within the District's existing wastewater treatment plant where there are no designated vistas nearby. The construction activities of the Proposed Project/Action would not substantially interfere with views of these resources from surrounding publicly accessible areas. No impacts are anticipated and no specific mitigation measures are required.
- (b) **No Impact.** The Proposed Project/Action is not located near or within a designated state scenic highway and therefore would not damage scenic resources, including but not limited to trees, outcroppings, and historic buildings within a state scenic highway. Specifically, the Proposed Project/Action would be located entirely within the District's existing wastewater treatment plant and is not located near or within a designated state scenic highway. The Proposed Project/Action's construction activities would not be located within any area that has been designated as a scenic vista or scenic resource. Therefore, no impacts are anticipated and no specific mitigation measures are required.
- (c) **Less-than-Significant Impact.** Construction of the Proposed Project/Action's air header and ductbank facilities would be visible and could involve temporary negative aesthetic effects, including open trenches as well as the presence of construction equipment and materials. However, construction impacts of the air header and ductbank facilities would be located entirely within the District's existing wastewater treatment plant and would not degrade the existing visual character or quality of the site and/or its surroundings and would not have any significant visual impacts. Operation of the Proposed Project/Action would not affect any visual resources. Therefore, no impacts are anticipated and no specific mitigation measures are required.

- (d) **No Impact.** The Proposed Project/Action would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. The Proposed Project/Action would not be constructed during nighttime hours and once constructed there would be no lights or other sources of light or glare. Therefore, no impacts would occur and no mitigation is required.

3.2 Agricultural Resources

Would the Proposed Project/Action:	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
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) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

Discussion

- (a) **No Impact.** The Proposed Project/Action would not 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. The Proposed Project/Action would be constructed and operated entirely within the District's existing wastewater treatment plant and would will not be located on any existing agricultural fields or farmlands. As a result, the Proposed Project/Action would not convert any farmland to non-agricultural usage. No mitigation is required or necessary.
- (b) **No Impact.** The Proposed Project/Action would not conflict with existing zoning for agricultural use or a Williamson Act contract. As stated above, the Proposed Project/Action would be constructed and operated entirely within the District's existing wastewater treatment plant and would will not be located on any existing agricultural fields or farmlands. As a result, the Proposed Project/Action would not conflict with agricultural practices and/or a Williamson Act Contract. No mitigation is required or necessary.
- (c) **No Impact.** As mentioned above, the Proposed Project/Action would be constructed and operated entirely within the District's existing wastewater treatment plant and would not involve changes in the existing environment, which, due to their location or nature, would result in the conversion of farmland or agricultural practices to non-agricultural use. No mitigation is required or necessary.

3.3 Air Quality

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the Proposed Project/Action:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐
c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐
f) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☒	☐	☐
g) Conflict with an application plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Discussion

- (a) **Less-than-Significant Impact.** The Proposed Project/Action is located within the jurisdiction of the San Francisco Bay Area Air Quality Management District (BAAQMD), the regional agency empowered to regulate air pollutant emissions from stationary sources in the Bay Area. BAAQMD regulates air quality through its permit authority over most types of stationary emission sources and through its planning and review process. The Project site is located in the San Francisco Bay Area Air Basin. This Basin is currently designated “non-attainment” for the state 1-hour ozone standard. To meet planning requirements related to this standard, the BAAQMD developed a regional air quality plan, the Bay Area 2000 Clean Air Program (CAP), the BAAQMD’s most recent triennial update of the 1991 Clean Air Plan. A significant impact would occur if a project conflicted with the plan by not mirroring assumptions of the plan regarding population growth and vehicle-miles-traveled. The Proposed Project/Action would not accommodate population growth. Once constructed, the Proposed Project/Action would not

generate any new significant operational vehicle trips. Any impacts are considered to be less-than-significant. No mitigation is required or necessary.

- (b) **Less-than-Significant Impact with Mitigation.** The entire San Francisco Bay Area is currently designated “non-attainment” for the state PM₁₀ and PM_{2.5} standards, and the state 1-hour ozone standard. The Bay Area is in “attainment” or “unclassified” with respect to the other ambient air quality standards. As part of the effort to reach attainment of these standards, the BAAQMD has established thresholds of significance for several criteria air pollutants associated with both the construction and operation of projects³. Specifically, a project is considered to have a significant regional air quality impact if it would result in an increase in emissions of 80 pounds per day or 15 tons per year of PM₁₀, and/or of reactive organic gases (ROG) or nitrogen oxides (NO_x). ROG and NO_x are both ozone precursors.

Construction activities at the project site would begin in the spring/summer of 2017 and continue into the fall of 2018 and would include excavation and grading activities. Overall construction work would require the use of various types of mostly diesel-powered equipment, including wheel loaders, excavators, and various kinds of trucks.

Construction activities typically result in emissions of particulate matter, usually in the form of fugitive dust from activities such as trenching and grading. Emissions of particulate matter vary day-to-day, depending on the level and type of activity, silt content of the soil, and the prevailing weather. Estimated construction emissions for the air header and ductbank facilities construction were generated using the Sacramento Metropolitan Air Quality Management District’s URBEMIS Construction Emissions Model (See Appendix A). Please note that this model was used because it has been recommended by BAAQMD. The URBEMIS Construction Emissions Model is a Microsoft Excel worksheet available to assess the emissions of construction projects. The estimated construction equipment fleet-mix and the acreage and soil volume were put into the URBEMIS model in order to determine potential emissions. Table 3 summarizes the Proposed Project/Action’s estimated construction related emissions output from the URBEMIS model in maximum pounds per day as well as in estimated tons for the entire construction duration and compares that data with BAAQMD’s daily and project/year thresholds. As shown in Table 3, the Proposed Project/Action’s construction emissions would only exceed BAAQMD’s daily and/or annual significance thresholds for NO_x.

BAAQMD’s approach to analyses of construction impacts as noted in their BAAQMD CEQA Guidelines is to emphasize implementation of effective and comprehensive basic construction control measures rather than detailed quantification of emissions. With implementation of the mitigation measures below, the Proposed Project/Action’s construction-related impacts would be further reduced to less-than-significant levels.

³ BAAQMD’s CEQA Guidelines were developed to assist local jurisdictions and lead agencies in complying with the requirements of CEQA regarding potentially adverse impacts to air quality. These CEQA Guidelines were updated in June 2010 to include reference to thresholds of significance (“Thresholds”) adopted by the Air District Board on June 2, 2010. The Guidelines were further updated in May 2011. On March 5, 2012 the Alameda County Superior Court issued a judgment finding that the Air District had failed to comply with CEQA when it adopted the Thresholds. The court did not determine whether the Thresholds were valid on the merits, but found that the adoption of the Thresholds was a project under CEQA. The court issued a writ of mandate ordering the District to set aside the Thresholds and cease dissemination of them until BAAQMD had complied with CEQA. In view of the court’s order, BAAQMD is no longer recommending that the Thresholds be used as a generally applicable measure of a project’s significant air quality impacts. Lead agencies will need to determine appropriate air quality thresholds of significance based on substantial evidence in the record. Although lead agencies may rely on BAAQMD’s CEQA Guidelines (updated May 2011) for assistance in calculating air pollution emissions, obtaining information regarding the health impacts of air pollutants, and identifying potential mitigation measures, BAAQMD has been ordered to set aside the Thresholds and is no longer recommending that these Thresholds be used as a general measure of a project’s significant air quality impacts. Lead agencies may continue to rely on the Air District’s 1999 Thresholds of Significance and they may continue to make determinations regarding the significance of an individual project’s air quality impacts based on the substantial evidence in the record for that project.

Table 3: Estimated Proposed Project/Action Construction Emissions					
Construction Phase	Construction Emissions (lbs/day)				
	ROG	CO	NOx	PM ₁₀	PM _{2.5} *
Grubbing/Land Clearing	1.5	9.2	15.1	1.2	0.7
Grading/Excavation	8.0	44.0	83.8	4.6	3.8
Drainage/Utilities/Subgrade	6.7	35.7	64.2	3.9	3.2
Paving	2.8	16.1	23.4	1.6	1.4
Maximum (lbs/day)**	8.0	44.0	83.8	4.1	3.8
Total Tons Project/ Year	0.8	4.4	8.1	0.4	0.4
BAAQMD's Thresholds of Significance***					
Pounds per Day	80	550	80	80	80
Tons per Project/Year	15	100	15	15	15
Potentially Significant Impact?	No	No	Yes	No	No
Notes					
* BAAQMD does not have a threshold for PM _{2.5} ; however, the same threshold for PM ₁₀ is used herein. **Maximum daily emissions refers to the maximum emissions that would occur in one day. Not all phases will be occurring concurrently; therefore, the maximum daily emissions are not a summation of the daily emission rates of all phases. *** BAAQMD's May 2011 Thresholds were invalidated by Alameda County Superior Court and BAAQMD recommends using its 1999 Thresholds.					

BAAQMD's approach to analyses of construction impacts as noted in their BAAQMD CEQA Guidelines is to emphasize implementation of effective and comprehensive basic construction control measures rather than detailed quantification of emissions. With implementation of the mitigation measures below, the Proposed Project/Action's construction-related impacts would be further reduced to less-than-significant levels.

Mitigation Measure AIR-1: Basic Construction Mitigation Measures Recommended for ALL Proposed Projects. During all phases of construction, the following procedures shall be implemented:

- 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.
- 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 visible emissions evaluator.
- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure AIR-2: Additional Construction Mitigation Measures for Projects with Emissions over the Thresholds. During all phases of construction, the following procedures shall be implemented as appropriate:

- All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.
- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
- Windbreaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Windbreaks should have at maximum 50 percent air porosity.
- Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
- All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
- Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.
- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Minimizing the idling time of diesel powered construction equipment to five (5) minutes.
- To the extent possible or as appropriate, the project shall develop a plan demonstrating that if any off-road equipment (more than 50 horsepower) is to be used in the construction of the project (i.e., owned, leased, and subcontractor vehicles), said equipment would achieve a project wide fleet-average 20 percent NOx reduction and 45 percent PM reduction compared to the most recent Air Resources Board (ARB) fleet average. Acceptable options for reducing emissions include the use of late model engines,

low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.

- To the extent possible or as appropriate, use low volatile organic compounds (VOC) (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).
- To the extent possible or as appropriate, require that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NOx and PM.
- To the extent possible or as appropriate, require that all contractors use equipment that meets the California Air Resources Board's (CARB) most recent certification standard for off-road heavy-duty diesel engines.

Once operational, emission sources resulting from project operations would be associated with primarily regular maintenance and inspection work. In fact, the new diesel standby generator will meet new BAAQMD standards. Operational impacts would be considered less-than-significant. With respect to project conformity with the federal Clean Air Act, the Proposed Project/Action's potential emissions are well below minimum thresholds and are below the area's inventory specified for each criteria pollutant designated non-attainment or maintenance for the Bay Area. As such, further general conformity analysis is not required.

- (c) **Less-than-Significant Impact with Mitigation.** As stated above, the entire San Francisco Bay Area is currently designated "non-attainment" for the state PM₁₀ and PM_{2.5} standards, and the state 1-hour ozone standard. The Bay Area is in "attainment" or "unclassified" with respect to the other ambient air quality standards. The BAAQMD is active in establishing and enforcing air pollution control rules and regulations in order to attain all state and federal ambient air quality standards and to minimize public exposure to airborne toxins and nuisance odors. Air emissions would be generated during construction of the Proposed Project/Action, which could increase criteria air pollutants, including PM₁₀. However, construction activities would be temporary and would incorporate the implementation of **Mitigation Measure AIR-1 and AIR-2** as identified above.

As mentioned above, upon completion of construction activities emission sources resulting from Project operations would be associated with regular maintenance and inspection work. Given the limited number of trips that would be required, only limited emissions would be generated; these emissions would be expected to be well below BAAQMD guidelines. See Table 4 above. As such, the Proposed Project/Action would not result in a cumulatively considerable net increase of any criteria air pollutants, and the impacts would be even less-than-significant with implementation of **Mitigation Measure AIR-1 and AIR-2** as identified above.

- (d) **Less-than-Significant Impact with Mitigation.** Diesel emissions would result both from diesel-powered construction vehicles and any diesel trucks associated with project operation. Diesel particulate matter (DPM) has been classified by the California Air Resources Board as a toxic air contaminant for the cancer risk associated with long-term (i.e., 70 years) exposure to DPM. Given that construction would occur for a limited amount of time and that only a limited number of diesel trucks would be associated with operation of the project, localized exposure to DPM would be minimal. As a result, the cancer risks from the project associated with diesel emissions over a 70-year lifetime are very small. Therefore, the impacts related to DPM would be less-than-significant. Likewise, as noted above, the project would not result in substantial emissions of any

criteria air pollutants either during construction or operation with the implementation of **Mitigation Measure AIR-1 and AIR-2**; therefore, the project would not expose sensitive receptors, including residents in the project vicinity, to substantial pollutant concentrations. With the implementation of **Mitigation Measure AIR-1 and AIR-2**, impacts to sensitive receptors would be less-than-significant. No additional mitigation measures are required.

- (e) **Less-than-Significant Impact.** During construction of the Proposed Project/Action, the various diesel-powered vehicles and equipment in use on-site could create minor odors. These odors are not likely to be noticeable beyond the immediate area and, in addition, would be temporary and short-lived in nature. Therefore, odor impacts would be less-than-significant. No specific mitigation measures are required.
- (f) **Less-than-Significant Impact with Mitigation.** During construction of the Proposed Project/Action, the various diesel-powered vehicles and equipment in use on-site could generate greenhouse gas emissions. Specifically, while BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions, the Proposed Project/Action would exceed the thresholds for NO_x that would generate greenhouse gas emissions that could be considered significant. However, with implementation of **Mitigation Measure AIR-1 and AIR-2** any potential to generate greenhouse gas emissions would be reduced to less-than-significant levels. No additional mitigation measures are required.
- (g) **No Impact.** The Proposed Project/Action would not conflict with an application plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. No mitigation is necessary or required.

3.4 Biological Resources

Would the Proposed Project/Action:	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
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 U.S. Fish and Wildlife Service (USFWS)?	☐	☒	☐	☐
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?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife 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 Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion

A record search of CDFW's California Natural Diversity Database (CNDDDB) and USFWS' Species List was conducted for the area within a five-mile radius of the Project area to identify previously reported occurrences of state and federal special-status plants and animals. Figure 4 shows the location of known state and federal listed species within the Project/Action Area. In addition, field visits for the Proposed Project/Action was conducted on April 29, 2016 and July 7, 2016 to determine the potential for special-status species to occur within the general vicinity of the Proposed Project/Action Study Area (i.e. Construction Area) as described in Chapter 2 – Project Description. This field visit was not intended to be

a protocol-level survey to determine the actual absence or presence of special-status species, but was conducted to determine the potential for special-status species to occur within the Proposed Project/Action Area. During the field visits several San Pablo Bay Song and Cliff Sparrow nests were observed in the Project/Action Area. No other special status species were observed. Appendix B provides a summary of the potential for state and federal special status species to occur within the Proposed Project/Action Study Area. Appendix C provides an analysis of the potential for the Proposed Project/Action to adversely effect federal special status species in order to satisfy the requirements CEQA-Plus, NEPA, and the federal resource agencies.

- (a) **Less-than-Significant Impact with Mitigation.** The Proposed Project/Action would be constructed entirely within the District's wastewater treatment plant. The Proposed Project/Action would occur in a highly disturbed area and would not 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 CDFW and USFWS.

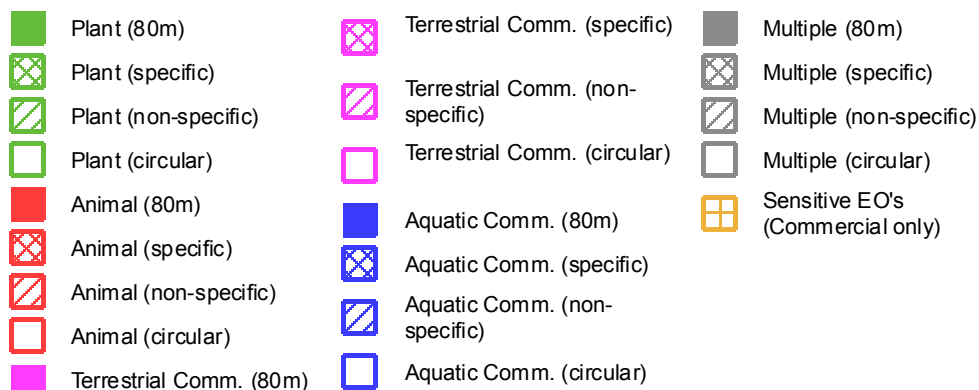
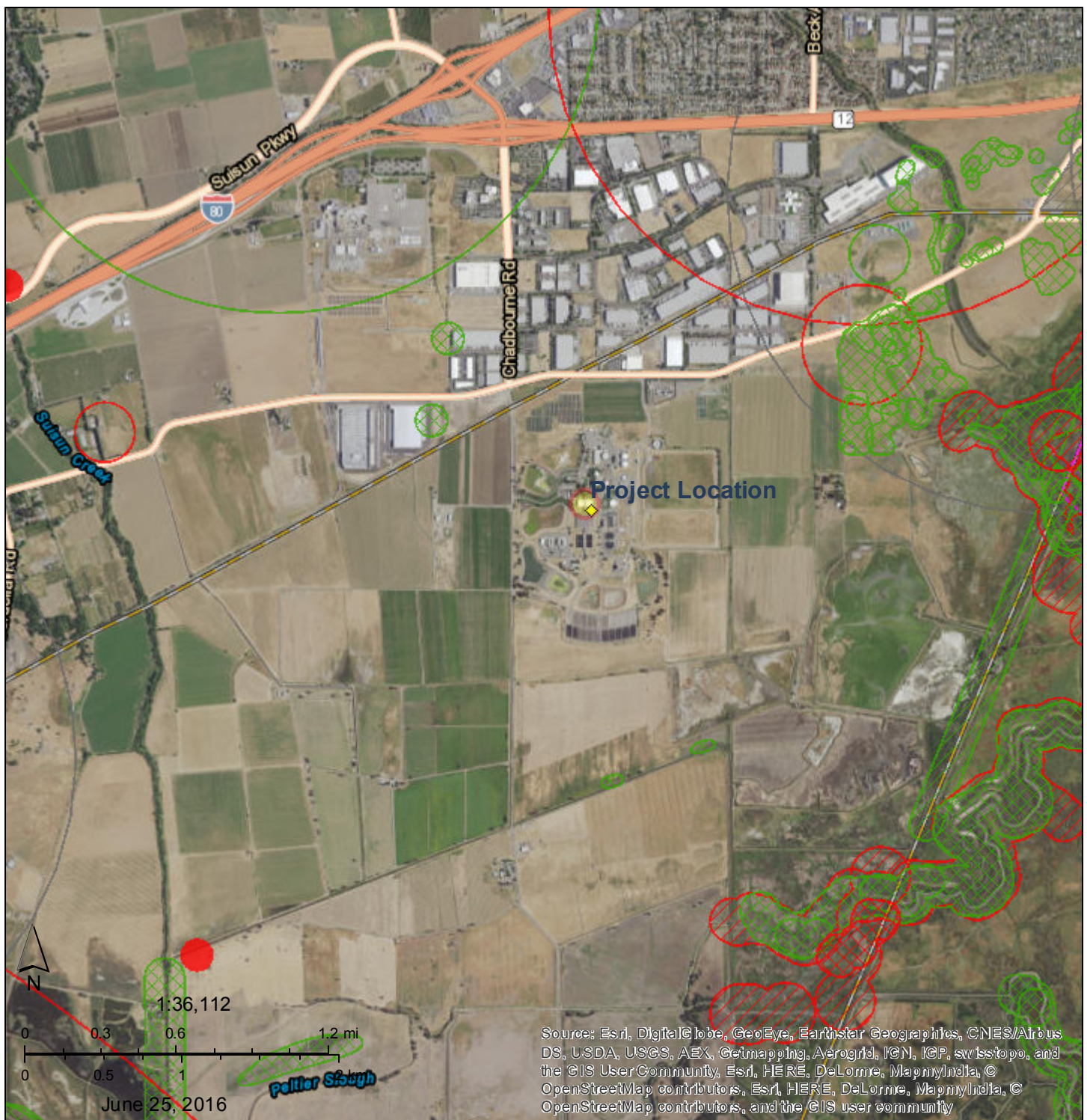
A review of the CDFW's CNDDDB and USFWS' Species List and indicates that there is not suitable habitat for special status plant species (See Appendix B and Figure 4). However, there are numerous mature trees within and adjacent to the proposed air header and ductbank construction activities. Mature trees can serve as perching or nesting sites for migratory birds, including raptors, and their removal can adversely affect breeding behavior. These species may occur within the area, which are protected under the U.S. Fish and Wildlife Service, the California Fish and Wildlife Code and/or the Federal Migratory Bird Treaty Act.

In addition, numerous San Pablo Song and/or Cliff Swallow nests were observed within the Proposed Project/Action Area. All swallows are included under the Migratory Bird Treaty Act of 1918 as migratory insectivorous birds and as such are protected by state and federal regulations. It is illegal for any person to take, possess, transport, sell, or purchase them or their parts, such as feathers, nests, or eggs, without a permit. As a result, certain activities affecting swallows are subject to legal restrictions. In California, old nests or nests under construction between September 1 and January 31 may be washed down with water or knocked down with a pole. Swallows are strongly attracted to old nests or to the remnants of deteriorated nests, so all traces of mud should be removed. During nest building, nest removal will require many days because cliff swallows persistently rebuild nests for most of the breeding season. They usually return the following year and the whole process must be repeated.

As a result, any potential impacts to special status birds would be minimized to less-than-significant levels with the incorporation of the following mitigation measures and procedures:

Mitigation Measure BIO-1: Conduct Breeding Surveys. For construction activities that occur between February 1 and August 31, preconstruction breeding bird surveys shall be conducted by a qualified biologist prior to and within 10 days of any initial ground-disturbance activities. Surveys shall be conducted within all suitable nesting habitat within 250 feet of the activity. All active, non-status passerine nests identified at that time shall be protected by a 50-foot radius minimum exclusion zone. Active raptor or special-status species nests shall be protected by a buffer with a minimum radius of 200 - feet. CDFW and USFWS recommend that a minimum 500-foot exclusion buffer be established around active special status species nests. The following considerations apply to this mitigation measure:

Figure 4 - Location of Federal and State Listed Species



- Survey results are valid for 14 days from the survey date. Should ground disturbance commence later than 14 days from the survey date, surveys should be repeated. If no breeding birds are encountered, then work may proceed as planned.
- Exclusion zone sizes may vary, depending on habitat characteristics and species, and are generally larger for raptors and colonial nesting birds. Each exclusion zone would remain in place until the nest is abandoned or all young have fledged.
- The non-breeding season is defined as September 1 to January 31. During this period, breeding is not occurring and surveys are not required. However, if nesting birds are encountered during work activities in the non-breeding season, disturbance activities within a minimum of 50-feet of the nest should be postponed until the nest is abandoned or young birds have fledged.

Mitigation Measure BIO-2: Conduct Nesting Surveys. For any construction activities initiated between February 1 and August 31, surveys for nesting special status species (including swallows and raptors) are required within 250-feet of areas of disturbance. If an active nest is found, a qualified biologist shall monitor the nest during construction activities within 250-feet of the nest to determine whether project construction may result in abandonment. The biologist shall continue monitoring the nest until construction within 250-feet of the nest is completed, or until all chicks have completely fledged. If the monitor determines that construction may result in abandonment of the nest, all construction activities within 250-feet shall be halted until the nest is abandoned or all young have fledged.

The implementation of the above mitigation measures would reduce impacts associated with the Proposed Project/Action to a level of less-than-significant. No additional mitigation measures are required.

- (b) **No Impact.** The Proposed Project/Action would not have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS. As a result, no impact is expected and no specific mitigation is required.
- (c) **No Impact.** The Proposed Project/Action would not have an adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. There is a potential wetland area near the Project site, but the Proposed Project/Action would not affect or involve this potential wetlands or any wetlands area. According to the USFWS and the CDFW species database searches, there are no known wetlands in the project area. The April 29, 2016 and the July 7, 2016 field surveys confirmed that as well. As a result, no impact is expected and no specific mitigation is required.

Less-than-Significant Impact with Mitigation. There are numerous mature trees within and adjacent to the proposed ductbank and air header construction activities. Mature trees can serve as perching or nesting sites for migratory birds, including raptors, and their removal can adversely affect breeding behavior. These species may occur within the area, which are protected under the U.S. Fish and Wildlife Service, the California Fish and Wildlife Code and/or the Federal Migratory Bird Treaty Act of 1918 as migratory insectivorous birds and as such are protected by state and federal regulations..

In addition, numerous San Pablo Song and/or Cliff Swallow nests were observed within the Proposed Project/Action Area. All swallows are included under the Migratory Bird Treaty Act.

As a result, the potential exists that construction activities could adversely affect nesting swallows and/or raptors if they happen to be nesting on buildings and/or in the mature trees within and adjacent to the Proposed Project/Action site. Many swallows and raptors are sensitive to loud construction noise such as that associated with grading and demolition. Such activities could cause nest abandonment or destruction of individual active nests. Because all swallows and raptors and their nests are protected under 3503.5 of the California Fish and Wildlife Code, construction of the Proposed Project/Action could result in a significant impact to these species if they happen to be nesting in one or some of these mature trees adjacent to the Project/Action area. However, and as a precautionary measure, with the implementation of **Mitigation Measures BIO-1 and BIO-2** these potential impacts would be reduced to less-than-significant levels.

- (d) **No Impact.** The Proposed Project/Action is not expected to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. As a result, no impact is expected and no specific mitigation is required.
- (e) **No Impact.** The Proposed Project/Action would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan. Therefore, there is no impact and no mitigation is required.

3.5 Cultural Resources

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the Proposed Project/Action:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Discussion

On May 11, 2016, a records search was conducted by staff at the Northwest Information Center, Sonoma State University, Rohnert Park, California. The record search included the Project Area of Potential Effect (APE) and a 0.50-mile radius outside the project boundaries. The record search included current inventories of National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), California State Historic Landmarks, and the California Points of Historical Interest. In addition, a field reconnaissance survey was conducted on April 29, 2016 and July 7, 2016 to determine the presences of any known cultural resources. In short, no cultural resources were identified in the records search and on the field survey that would be affected by the construction and/or operation of the Proposed Project/Action. A more complete analysis is provided in Appendix D.

- (a) **No Impact.** The Proposed Project/Action would not cause a substantial adverse change in the significance of a historical resource. No listed or historical properties exist within the Proposed Project/Action Area. As a result, there is no impact and no specific mitigation is required.
- (b) **Less-than-Significant Impact with Mitigation.** No known significant archaeological resources are known to exist within the Project area. Therefore, the Proposed Project/Action is not likely to cause a substantial adverse change in the significance of unique archaeological resources. Nevertheless, there is a slight chance that construction activities of the Proposed Project/Action could result in accidentally discovering unique archaeological resources -especially during the construction of the 500-foot long, 30-inch wide by 24-inch high ductbank. However, to further reduce this less-than-significant impact, the following mitigation measures are recommended:

Mitigation Measure CR-1: Halt work if cultural resources are discovered. In the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 100 feet of the resources shall be halted and after notification, the District shall consult with a qualified archaeologist to assess the significance of the find. If any find is determined to be significant (CEQA Guidelines 15064.5[a][3] or as unique archaeological resources per Section 21083.2 of the California Public Resources Code), representatives of the District and a qualified archaeologist shall meet to determine the appropriate course of action. In considering any suggested mitigation proposed by the consulting archaeologist in order to mitigate impacts to historical resources or unique archaeological resources, the lead agency shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation for historical resources or unique archaeological resources is carried out.

With the implementation of the above mitigation measure, the Proposed Project/Action would not result in impacts to archeological resources.

- (c) **Less-than-Significant Impact with Mitigation.** Paleontologic resources are the fossilized evidence of past life found in the geologic record. Despite the tremendous volume of sedimentary rock deposits preserved worldwide, and the enormous number of organisms that have lived through time, preservation of plant or animal remains as fossils is an extremely rare occurrence. Because of the infrequency of fossil preservation, fossils – particularly vertebrate fossils – are considered to be nonrenewable resources. Because of their rarity, and the scientific information they can provide, fossils are highly significant records of ancient life.

No known significant paleontological resources exist within the Project/Action area. Also, because the Proposed Project/Action would result in minimal excavation in bedrock conditions, significant paleontologic discovery would be unlikely. However, fossil discoveries can be made even in areas of supposed low sensitivity. In the event a paleontologic resource is encountered during project activities, implementation of the following mitigation measure would reduce potential impacts to less-than-significant.

Mitigation Measure CR-2: Stop work if paleontological remains are discovered. If paleontological resources, such as fossilized bone, teeth, shell, tracks, trails, casts, molds, or impressions are discovered during ground-disturbing activities, work will stop in that area and within 100 feet of the find until a qualified paleontologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the District.

With the implementation of the above mitigation measure, the Proposed Project/Action would not result in impacts to unique paleontological or geological resources.

- (d) **Less-than-Significant Impact with Mitigation.** There are no known burial sites within the project area. Nonetheless, the possibility exists that subsurface construction activities may encounter undiscovered human remains. Accordingly, this is a potentially significant impact. Mitigation is proposed to reduce this potentially significant impact to a level of less-than-significant.

Mitigation Measure CR-3: Halt work if human remains are found. If human remains are encountered during excavation activities conducted for the Proposed Project/Action, all

work in the adjacent area shall stop immediately and the Solano County Coroner's office shall be notified. If the Coroner determines that the remains are Native American in origin, the Native American Heritage Commission shall be notified and will identify the Most Likely Descendent, who will be consulted for recommendations for treatment of the discovered human remains and any associated burial goods.

3.6 Geology and Soils

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

Discussion

- a) **Less-than-Significant Impact.** The Proposed Project/Action would not expose people to substantial adverse risks of loss, injury, or death since the Proposed Project/Action does not include construction of habitable structures. There are four named faults (i.e. The Green Valley Fault, the Cordelia Fault, the Midland Fault, and the Vaca-Kirby Hills Fault) and two other unnamed faults in Solano County. The nearest of these faults is the Cordelia Fault, which is

approximately 2.5 miles from the Project site. Although all of these faults must be considered for potential seismic activity, the green Valley Fault and the Concord Fault are the only faults in Solano County or near the Proposed Project/Action Area that are known to be active. These faults are located approximately 4 miles and 7 miles from the site, respectively. Several earthquakes have occurred on these faults in the past. These earthquakes have ranged in magnitude from less than 1.0 to 6.4 on the Richter Scale. Future earthquakes would be expected to be similar in magnitude and the Proposed Project/Action would be constructed to withstand a seismic event on these faults. In addition, the proposed Project/Action is located in an area with moderate to high liquefaction potential. However most of the construction would be within existing buildings on concrete pads that have used generally accepted practices to reduce the impact of liquefaction hazards to less than significant levels. Similarly, the 500-foot long ductbank and the new Air header would be designed to withstand the effects of an earthquake and liquefaction hazards (see Item C below). Finally, landside potential is considered to be extremely low due to the flat terrain and existing buildings at the Project Site. The Proposed Project/Action would not expose people or structures to substantial adverse effects, including the risk of loss and injury due to a seismic event. Therefore, construction and operation of the Proposed Project/Action would have a less-than-significant impact. No mitigation is required or necessary.

- (b) **Less-than-Significant Impact.** The operation of the Proposed Project/Action would not result in any excavation and earthmoving that would cause erosion or loss of topsoil. Construction activities associated with the 500-foot long ductbank would involve excavation and earthmoving that could cause erosion or loss of topsoil. Similarly, the Air Header would involve the construction of approximately 16 concrete cast-in drilled pier footings. Construction activities would involve excavation, moving, filling, and the temporary stockpiling of soil. Earthwork associated with development construction could expose soils to erosion. However, the District would employ construction best management practices that would minimize soil erosion. Specifically, the ductbank would be covered, re-vegetated, and/or paved immediately after the ductbank has been constructed. As a result, any soil erosion or loss of topsoil would be considered less-than-significant.
- (c) **Less-than-Significant Impact with Mitigation.** The Proposed Project/Action is located in an area that has moderate to high liquefaction potential. As such, the soil in the area of the ductbank alignment and the air header footings may have a high susceptibility to liquefaction during seismic shaking. Other portions of the Proposed Project/Action may be less susceptible to liquefaction and related damage due to the fact that it would be located within existing buildings that have string concrete pads. Lateral spreading, often associated with liquefaction, is less likely because there are no steep banks or hard ground bordering the Proposed Project/Action area, but could still potentially be a hazard. As a result, the following mitigation is proposed as a precautionary measure:

Mitigation Measure GEO-1: Perform Geotechnical Investigation. The District shall require a design-level geotechnical study to be prepared prior to project implementation to determine proper design and construction methods, including design of any soil remediation measures as required to reduce hazards caused by landslides, liquefaction, and/or lateral spreading.

With the incorporation of this mitigation measure, any resulting impacts would be considered to be less-than-significant.

- (d) **Less-than-Significant Impact with Mitigation.** The Proposed Project/Action could be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994). However, with

the incorporation of **Mitigation Measures GEO-1** above, any impacts would be less-than-significant.

- (e) **No Impact.** The Proposed Project/Action would not include the use of septic tanks or alternative wastewater disposal systems. Therefore, no adverse effects to soil resources are expected. No mitigation is required.

3.7 Hazards and Hazardous Materials

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

Discussion

- (a) **Less-than-Significant Impact with Mitigation.** Operation of the Proposed Project/Action would not involve the routine transportation, use, storage, and/or disposal of hazardous materials. However, construction of the Proposed Project/Action could temporarily increase the transport of

materials generally regarded as hazardous materials that are used in construction activities. It is anticipated that limited quantities of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluids, paint, and other similarly related materials would be brought onto the project site, used, and stored during the construction period. The types and quantities of materials to be used could pose a significant risk to the public and/or the environment. In addition, construction of the Proposed Project/Action could result in the exposure of construction workers and residents to potentially contaminated soils. As a result the following mitigation measures are proposed:

Mitigation Measure HAZ-1: Store, Handle, Use Hazardous Materials in Accordance with Applicable Laws. The District shall ensure that all construction-related and operational hazardous materials and hazardous wastes shall be stored, handled, and used in a manner consistent with relevant and applicable federal, state, and local laws. In addition, construction-related and operational hazardous materials and hazardous wastes shall be staged and stored away from stream channels and steep banks to keep these materials a safe distance from near-by residents and prevent them from entering surface waters in the event of an accidental release.

Mitigation Measure HAZ-2: Properly Dispose of Contaminated Soil and/or Groundwater. If contaminated soil and/or groundwater is encountered or if suspected contamination is encountered during project construction, work shall be halted in the area, and the type and extent of the contamination shall be identified. A contingency plan to dispose of any contaminated soil or groundwater will be developed through consultation with appropriate regulatory agencies.

- (b) **Less-than-Significant Impact with Mitigation.** The operation of the Proposed Project/Action would not create an additional significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. However, as with all construction activities, the potential exists for accidents to occur, which could result in the release of hazardous materials into the environment. With the incorporation of **Mitigation Measures HAZ-1 and HAZ-2** identified above, potential impacts are considered to be less-than-significant.
- (c) **No Impact.** The Proposed Project/Action is not located within a quarter-mile of an existing or proposed school and therefore would not emit hazardous emissions or handle hazardous or acutely hazardous material, substances, or waste within a quarter-mile of an existing or proposed school. No Mitigation is required or necessary.
- (d) **No Impact.** The Proposed Project/Action is not located on a site that is known to be included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and therefore would not create a significant hazard to the public or the environment. As a result, no impact is expected and no specific mitigation is required.
- (e) **No Impact.** The Proposed Project/Action is not located within two miles of any public airports. The Proposed Project/Action is located approximately 6-miles away from Travis Air Force Base (AFB) to the east. However, the construction and/or operation of the Proposed Project/Action would not adversely affect an airport or airport operations, including, noise, take-offs, landings, flight patterns, safety, light, navigation, or communications between aircraft and the control tower within the Project area. No specific mitigation is required.

- (f) **No Impact.** The Proposed Project/Action is located within three miles of a private airstrip called the Garibaldi Brother's Airport. However, construction and/or operation of the Proposed Project/Action would not adversely affect an airport or airport operations, including, noise, take-offs, landings, flight patterns, safety, light, navigation, or communications between aircraft and the control tower within the Project area. No specific mitigation is required.
- (g) **No Impact.** The Proposed Project/Action would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. As a result, no impacts are anticipated and no mitigation is required.
- (h) **Less-than-Significant Impact with Mitigation.** Construction of the Proposed Project/Action would not be located within an urban setting and is not generally located in an area where there is the risk of wildland fire. Specifically, a records search of the California Department of Forestry and Fire Protection Fire Severity mapping system does not regard the Proposed Project/Action Area to be in an area of moderate or high risk to wildfires. As a result, there is little potential to expose people or structures to a significant risk of loss, injury or death involving wildland fires. However, the potential exists that construction activities could cause a fire, especially in a drought situation or in the dry season. With the incorporation of the following mitigation measure, any potential impacts are considered to be less than significant.

Mitigation Measure HAZ-3 Fire Prevention and Control: The District shall comply with all federal, state, county and local fire regulations pertaining to burning permits and the prevention of uncontrolled fires. The following measures shall be implemented to prevent fire hazards and control of fires:

- A list of relevant fire authorities and their designated representative to contact shall be maintained on site by construction personnel.
- Adequate firefighting equipment shall be available on site in accordance with the applicable regulatory requirements.
- The level of fire hazard shall be posted at the construction office (where visible for workers) and workers shall be made aware of the hazard level and related implications.
- The District or its contractor shall provide equipment to handle any possible fire emergency. This shall include, although not be limited to, water trucks; portable water pumps; chemical fire extinguishers; hand tools such as shovels, axes, and chain saws; and heavy equipment adequate for the construction of fire breaks when needed. Specifically, the District or its contractor shall supply and maintain in working order an adequate supply of fire extinguishers for each crew engaged in potentially combustible work such as welding, cutting, and grinding.
- All equipment shall be equipped with spark arrestors.
- In the event of a fire, the District or its contractor shall immediately use resources necessary to contain the fire. The District or contractor shall then notify local emergency response personnel.
- Any and all tree-clearing activities (if any) are to be carried out in accordance with local rules and regulations for the prevention of forest fires.

- Burning shall be prohibited.
- Flammable wastes shall be removed from the construction site on a regular basis.
- Flammable materials kept on the construction site must be stored in approved containers away from ignition sources.
- Smoking shall be prohibited on the construction site, except at designated safe areas with proper cigarette disposal containers.

3.8 Hydrology and Water Quality

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the Proposed Project/Action:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion of siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality? (erosion potential)	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation of seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion

- (a) **No Impact.** The Proposed Project/Action would not violate any water quality standards or waste discharge requirements. The construction activities would not be located in or near any drainages and/or natural water features and therefore would not affect water quality nor require a wastewater discharge permit. No impacts are expected and thus, no mitigation is necessary or required.
- (b) **No Impact.** Construction and/or operation of the Proposed Project/Action would not use groundwater supplies nor interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. Therefore, no adverse impacts are anticipated and no mitigation is required.
- (c) **No Impact.** Construction and/or operation of the Proposed Project/Action would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site. Therefore, no adverse impacts are anticipated and no mitigation is required.
- (d) **No Impact.** Construction and/or operation of the Proposed Project/Action would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in flooding on- or off-site. Therefore, no adverse impacts are anticipated and no mitigation is required.
- (e) **No Impact.** The Proposed Project/Action would not result in any new significant impervious surfaces and would not create new areas of low permeability. No additional runoff would be generated by the Proposed Project/Action. Therefore, the Proposed Project/Action would not result in exceeding the capacity of existing or planned storm water drainage systems. No impacts would occur and no mitigation is necessary.
- (f) **No Impact.** The Proposed Project/Action's construction and/or operation activities would not substantially affect water quality. The Proposed Project/Action's construction activities would not be located near any drainages or natural water features and therefore would not affect water quality nor require any wastewater discharges. Therefore, no adverse impacts are anticipated and no mitigation is required.
- (g) **No Impact.** The Proposed Project/Action would not redirect flood flows or otherwise place housing within a 100-year flood hazard area. No impact is expected and no mitigation is required or necessary.
- (h) **No Impact.** The Proposed Project/Action would generally not place exposed structures within a 100-year flood hazard area. No impact is expected and no mitigation is required or necessary.
- (i) **No Impact.** The Proposed Project/Action would not expose people or structures to a significant risk of loss, injury, or death involving flooding; including flooding as a result of a failure of a levee or dam. No impact is expected and no mitigation is required or necessary.
- (j) **No Impact.** The Proposed Project/Action would not expose people or structures to a significant risk of loss, injury, or death involving a seiche or tsunami. In addition, the Proposed Project/Action area is essentially level, with minimal to no potential hazards from mudflows. No impact is expected and no mitigation is required or necessary.

3.9 Land Use and Planning

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the Proposed Project/Action:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Discussion

- (a) **No Impact.** The Proposed Project/Action would not physically divide an established community. The Proposed Project/Action would be constructed within the District's wastewater treatment plant. The Proposed Project/Action would not result in a disruption, physical division, or isolation of existing residential or open space areas. As a result, no impact is expected and no mitigation is required or necessary.
- (b) **No Impact.** The Proposed Project/Action would be constructed within the District's wastewater treatment plant. The Proposed Project/Action would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project area. Therefore, no impacts are anticipated and no mitigation is required.
- (c) **No Impact.** The Proposed Project/Action would be constructed within the District's wastewater treatment plant. The Proposed Project/Action would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan. No impacts are expected and no mitigation is required or necessary.

3.10 Mineral Resources

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the Proposed Project/Action:				
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?	☐	☐	☐	☒

Discussion

- (a) **No Impact.** The Proposed Project/Action site is not located on a site that is identified as a significant source of mineral resources. Specifically, the Proposed Project/Action is not located in an area identified as containing mineral resources classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the state. The Proposed Project/Action is not located near this area and would not affect any sources of significant mineral resources. As a result, the Proposed Project/Action would not result in the loss of availability of known mineral resources; therefore, no impact is expected. No mitigation is required.
- (b) **No Impact.** The City of Fairfield or Solano County's General Plan does not identify any locally important mineral resources or recovery sites in the Proposed Project/Action's area. Further, as discussed in (a), the Proposed Project/Action would be unlikely to result in the loss of availability of a mineral resource deposit that has been identified as a mineral resource of value. Therefore, no adverse impacts are anticipated and no mitigation is required.

3.11 Noise

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the Proposed Project/Action result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?	☐	☐	☐	☒
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 expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☒

Discussion

- (a) **No Impact.** The Proposed Project/Action is located in the middle of the District's existing wastewater treatment plant. The nearest existing sensitive receptor to the Project/Action site is a single resident who resides over 3,000-feet to the east. Construction and the operation of the Proposed Project/Action would not be heard by that resident or any other sensitive receptor. In addition, construction and operation of the Proposed Project/Action would not exceed any noise thresholds and/or expose persons to or generate noise levels in excess of standards established in the City of Fairfield's General Plan or noise ordinance. No impacts are anticipated and no mitigation is required.

- (b) **No Impact.** Because of the substantial distance to the nearest sensitive receptor, construction and operation of the Proposed Project/Action would not exceed any noise thresholds and/or expose persons to or generate excessive groundbourne vibration or groundbourne noise levels. No impacts are anticipated and no mitigation is required.
- (c) **No Impact.** The operation of the Proposed Project/Action would not increase noise in and around the Project area. Once constructed, the operation of the Proposed Project/Action would not result in any increased noise. The Proposed Project/Action would not cause a permanent increase in ambient noise levels in the project vicinity above levels existing without the Project. Therefore, no impacts would occur and no mitigation is required.
- (d) **No Impact.** The Proposed Project/Action would not result in any temporary increase in ambient noise levels in the project vicinity above levels existing without the project. Therefore, no impacts would occur and no mitigation is required.
- (e) **No Impact.** The Proposed Project/Action is not located within two miles of any public airports. The Proposed Project/Action is located approximately 6-miles away from Travis Air Force Base (AFB) to the east. However, the construction and/or operation of the Proposed Project/Action would not adversely affect an airport or airport operations, including, noise, take-offs, landings, flight patterns, safety, light, navigation, or communications between aircraft and the control tower within the Project area. No specific mitigation is required.
- (f) **No Impact.** The Proposed Project/Action is located within three miles of a private airstrip called the Garibaldi Brother's Airport. However, construction and/or operation of the Proposed Project/Action would not adversely affect an airport or airport operations, including, noise, take-offs, landings, flight patterns, safety, light, navigation, or communications between aircraft and the control tower within the Project area. No specific mitigation is required.

3.12 Population and Housing

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

Discussion

- (a) **No Impact.** The Proposed Project/Action would not affect additional population growth either directly or indirectly. In addition, construction, operation, and maintenance would not result in any substantial increase in numbers of permanent workers/employees. Therefore, no impacts are anticipated and no mitigation is required.
- (b) **No Impact.** The Proposed Project/Action would not result in displacing substantial numbers of existing housing or necessitating the construction of replacement housing elsewhere. The Proposed Project/Action would be constructed entirely within the District's wastewater treatment plant. Construction of the Proposed Project/Action would avoid the need to demolish any existing houses and would not affect any other housing structures. As a result, the Proposed Project/Action would not displace existing housing, and therefore, no impacts are anticipated.
- (c) **No Impact.** The Proposed Project/Action would not displace substantial numbers of people necessitating the construction of replacement housing elsewhere. The Proposed Project/Action would be constructed entirely within the District's wastewater treatment plant. Construction of the Proposed Project/Action would not result in the demolition of existing housing and other housing structures. As a result, the Proposed Project/Action is not expected to displace people from their homes. Therefore, no impacts are anticipated and no mitigation is required.

3.13 Public Services

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

Discussion

- (a) **No Impact.** The Proposed Project/Action will not generate population growth and the operation and maintenance of the Proposed Project/Action would not be labor intensive, requiring significant numbers of temporary workers to relocate to the area. In addition, the Proposed Project/Action would not increase the demand for the kinds of public services that would support new residents, such as schools, parks, fire, police, or other public facilities. As a result, no impacts are anticipated and no mitigation is required.

3.14 Recreation

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

Discussion

- (a) **No Impact.** The Proposed Project/Action will not contribute to population growth. Therefore, the Proposed Project/Action will not 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. As a result, no impact is expected and no mitigation is required.
- (b) **No Impact.** The Proposed Project/Action does not include or require construction or expansion of recreational facilities. Furthermore, as discussed in (a), the Proposed Project/Action will not increase the demand for recreational facilities. As a result, no impact is expected and no mitigation is required.

3.15 Socioeconomics

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the Project/Action:				
a) Result in any adverse socioeconomic effects?	☐	☐	☐	☒
b) Conflict with Executive Order 12898 (Environmental Justice) policies?	☐	☐	☐	☒
c) Affect Indian Trust Assets?	☐	☐	☐	☒

Discussion

- (a) **No Impact.** The Proposed Project/Action would not have any adverse socioeconomic effects. The Proposed Project/Action would be constructed entirely within the District's wastewater treatment plant. The District is pursuing several funding mechanisms that would include applying for state and federal grants and loans to help reduce the cost of the project. In addition, the District would repay any loans by its existing rate structure for replacement projects. Any additional project costs would not adversely affect any minority or low-income populations and/or adversely alter the socioeconomic conditions of populations that reside within the District. As a result, the Proposed Project/Action would not have any adverse socioeconomic effects.
- (b) **No Impact.** Executive Order 12898 requires each federal agency to achieve environmental justice as part of its mission, by identifying and addressing disproportionately high and adverse human health or environmental effects, including social and economic effects of its programs, policies, and activities or minority populations and low-income populations of the United States. The Proposed Project/Action does not propose any features that would result in disproportionate adverse human health or environmental effects, have any physical effects on minority or low-income populations, and/or alter socioeconomic conditions of populations that reside or work within the District and vicinity.
- (c) **No Impact.** The Proposed Project/Action would not have any adverse effects on Indian Trust Assets (ITA). ITAs are legal interests in property or rights held by the United States for Indian Tribes or individuals. Trust status originates from rights imparted by treaties, statutes, or executive orders. Examples of ITAs are lands, including reservations and public domain allotments, minerals, water rights, hunting and fishing rights, or other natural resources, money or claims. Assets can be real property, physical assets, or intangible property rights. ITAs cannot be sold, leased, or otherwise alienated without federal approval. ITAs do not include things in which a tribe or individuals have no legal interest such as off-reservation sacred lands or archaeological sites in which a tribe has no legal property interest. No ITAs have been identified within the Proposed Project/Action site. As a result, the Proposed/Action would have no adverse effects on ITAs.

3.16 Traffic and Transportation

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the Proposed Project/Action:				
a) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location which results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

Discussion

- (a) **Less-than-Significant Impact.** The Proposed Project/Action would be constructed entirely within the District's wastewater treatment plant. Construction activities of the Proposed Project/Action would temporarily result in increased traffic to and from the wastewater treatment plant. However, this traffic increase would be minor, temporary and would not result in exceeding any traffic thresholds. Once the Proposed Project/Action is constructed, no additional or increased traffic would occur. Any minor traffic increases as a result of the construction and operation of the Proposed Project/Action are considered less than significant and no mitigation is required or necessary.
- (b) **Less-than-Significant Impact.** As discussed above in (a), construction activities of the Proposed Project/Action may result in increased vehicle trips. However, this increase would be temporary and would not exceed, either individually or cumulatively, existing level of service standards. In

addition, the Proposed Project/Action would not result in any long-term degradation in operating conditions or level of service on any project roadways. Any minor traffic increases as a result of the construction and operation of the Proposed Project/Action are considered less than significant and no mitigation is required or necessary.

- (c) **No Impact.** The Proposed Project/Action does not involve use of air transit, nor is it expected to cause any change in air traffic patterns. No impact is expected and no mitigation is required.
- (d) **No Impact.** The Proposed Project/Action does not propose to make changes to roadways that would create road hazards or alter design features developed to mitigate such hazards. No impacts are expected and no mitigation is required.
- (e) **No Impact.** The Proposed Project/Action would not have any temporary effects on traffic flow, due to added truck traffic during construction that could result in delays for emergency vehicle access in the vicinity of the project. No impacts are expected and no mitigation is required.
- (f) **No Impact.** Project-related construction activities would require additional parking for workers and equipment on a temporary basis. However, sufficient space exists within the wastewater treatment plant to accommodate parking needs for construction workers and equipment. As a result, no impacts are anticipated and no mitigation is required.
- (g) **No Impact.** The construction activities associated with the Proposed Project/Action would be short-term and would not conflict with adopted policies, plans, or programs supporting alternative transportation. Also once constructed, the Proposed Project/Action would not conflict with adopted policies, plans, or programs supporting alternative transportation. No impacts are expected and no mitigation is required.

3.17 Utilities and Service Systems

	<i>Potentially Significant Impact</i>	<i>Less Than Significant With Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the Proposed Project/Action:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) 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?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion

- (a) **No Impact.** The Proposed Project/Action would not exceed wastewater treatment requirements of the San Francisco Regional Water Quality Control Board. Therefore, no impacts are anticipated and no mitigation is required.
- (b) **No Impact.** The primary purpose of the Proposed Project/Action is to enhance the reliability and efficiency of the secondary treatment process aeration system. There are several issues with the existing aeration system including leaking air header piping, obsolete and inefficient blowers,

lack of properly sized redundant equipment, and electrical gear that has exceeded its useful design life. The secondary treatment process is one of the most critical processes in the plant and any prolonged disruption to the aeration system could severely impact the District's ability to meet its discharge requirements. For these reasons, the District has decided to undertake this project. However, the Proposed Project/Action would not result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. Therefore, no impacts are anticipated and no mitigation is required.

- (c) **No Impact.** The Proposed Project/Action would not require or result in the construction of additional off-site storm water drainage facilities. Therefore, no impacts are expected and no mitigation is required.
- (d) **No Impact.** No new or expanded water supplies or entitlements are needed or required under or as a result of the Proposed Project/Action. Therefore no impacts are expected and no mitigation is required.
- (e) **No Impact.** The Proposed Project/Action would not increase the demand for wastewater treatment. No impacts are expected and no mitigation is required.
- (f) **No Impact.** Construction and operation of the Proposed Project/Action would not generate a significant amount of solid wastes. No impacts are expected to existing landfills and no mitigation is required.
- (g) **No Impact.** The Proposed Project/Action will comply with all relevant federal, state, and local statutes and regulations related to solid waste. Therefore, there are no anticipated impacts and no mitigation is required.

3.18 Mandatory Findings of Significance

	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
Would the Proposed Project/Action:				
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, 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) Have impacts that would be 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) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion

- (a) **Less-than-Significant Impact with Mitigation.** With the incorporation of the previously identified mitigation measures, the Proposed Project/Action will 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, 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. Any impacts from the Proposed Project/Action in these areas are considered here to be less-than-significant with the implementation and incorporation of the above mentioned mitigation measures.
- (b) **Less-than-Significant Impact with Mitigation.** No direct project-specific significant effects were identified that could not be mitigated to a less-than-significant level. Mitigation Measures incorporated herein mitigate any potential contribution to cumulative (as well as direct) impacts associated with these environmental issues. Therefore, the Proposed Project/Action does not have impacts that are individually limited, but cumulatively considerable.

- (c) **Less-than-Significant Impact with Mitigation.** As a result of mitigation included in this environmental document, the Proposed Project/Action would not result in substantial adverse effects to humans, either directly or indirectly.

Chapter 4 Determination

On the basis of this initial evaluation for the Fairfield-Suisun Sewer District's Blower Replacement Project:

- ☐ I find that the Proposed Project/Action COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the Proposed Project/Action 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 District. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the Proposed Project/Action MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the Proposed Project/Action MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the Proposed Project/Action 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/Action, nothing further is required.


Signature

Hamid Sarvi
Printed Name

8/31/16
Date

Senior Environmental Engineer
Title

Chapter 5 Bibliography

Detailed below are the primary sources consulted and reviewed during the preparation of this environmental document.

- Bay Area Air Quality Management District. *CEQA Guidelines*. December 1999.
- California Department of Forestry and Fire Protection. *Fire Severity Mapping*. August 2016.
- California Natural Diversity Database. 2016. <http://www.dfg.ca.gov/biogeodata/cnddb>
- California Department of Toxic Substances. *Envirostor database and GIS System*. August 2016
- City of Fairfield. *General Plan EIR*. June 2002.
- Fairfield-Suisun Sewer District. *Blower Replacement Project Preliminary Design Report*. April 2016.
- Federal Emergency Management Agency. *100-Year Flood Zone Maps*. 2016.
- Solano County. *General Plan*. 2008.
- U. S. Fish and Wildlife Service species list database and Wetland Tracker. 2016. <http://www.fws.gov/>

Appendix A

Air Quality Emissions Calculations

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> FSSD - Blower Replacement Project				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	1.5	9.2	15.1	1.2	0.7	0.5	0.7	0.6	0.1	1,849.5
Grading/Excavation	8.0	44.0	83.8	4.6	4.1	0.5	3.8	3.7	0.1	9,266.8
Drainage/Utilities/Sub-Grade	6.7	35.7	64.2	3.9	3.4	0.5	3.2	3.1	0.1	7,200.9
Paving	2.8	16.1	23.4	1.6	1.6	-	1.4	1.4	-	2,970.4
Maximum (pounds/day)	8.0	44.0	83.8	4.6	4.1	0.5	3.8	3.7	0.1	9,266.8
Total (tons/construction project)	0.8	4.4	8.1	0.5	0.4	0.1	0.4	0.4	0.0	905.2
Notes: Project Start Year -> 2017										
Project Length (months) -> 12										
Total Project Area (acres) -> 0										
Maximum Area Disturbed/Day (acres) -> 0										
Total Soil Imported/Exported (yd³/day)-> 0										
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.										
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.										
Emission Estimates for -> FSSD - Blower Replacement Project				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	0.7	4.2	6.9	0.5	0.3	0.2	0.3	0.3	0.0	840.7
Grading/Excavation	3.6	20.0	38.1	2.1	1.8	0.2	1.7	1.7	0.0	4,212.2
Drainage/Utilities/Sub-Grade	3.0	16.2	29.2	1.8	1.6	0.2	1.5	1.4	0.0	3,273.1
Paving	1.3	7.3	10.6	0.7	0.7	-	0.6	0.6	-	1,350.2
Maximum (kilograms/day)	3.6	20.0	38.1	2.1	1.8	0.2	1.7	1.7	0.0	4,212.2
Total (megagrams/construction project)	0.7	4.0	7.3	0.4	0.4	0.1	0.4	0.3	0.0	821.0
Notes: Project Start Year -> 2017										
Project Length (months) -> 12										
Total Project Area (hectares) -> 0										
Maximum Area Disturbed/Day (hectares) -> 0										
Total Soil Imported/Exported (meters³/day)-> 0										
PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.										
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.										

Appendix B

Potential for Special Status Species to Occur
in Project/Action Area

Appendix B Potential for Special-Status Species to Occur in the Proposed Project/Action Study Area				
Species	Status	Habitat	Potential for Occurrence	Recommendations
Plants				
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	RP, List 1B	Low ground, alkali flats, and flooded lands in annual grassland or in playas or vernal pools. 1-170 m. Blooms March-June.	Unlikely. Suitable habitat for this species does not occur in the Study Area.	No further actions are recommended for this species.
<i>Atriplex persistens</i> Vernal pool small scale	List 1B.2	Seasonal alkali wetlands or alkali sink scrub, meadows and seeps, valley and foothill grassland. 1-250 m. Blooms April-October.	Unlikely. Suitable habitat for this species does not occur in the Study Area.	No further actions are recommended for this species.
<i>Centromadia parryi</i> ssp. <i>parryi</i> pappose tarplant	List 1B	Coastal prairie, meadows and seeps, coastal salt marshes and swamps, valley and foothill grassland. Vernal mesic, often alkaline sites. 2-420 m. Blooms May-November.	Unlikely. Suitable habitat is not present in the Study Area.	No further actions are recommended for this species
<i>Cicuta maculata</i> L. var. <i>bolanderi</i> Bolander's water-hemlock	List 2B.1	Located in marshes and swamps, Coastal, fresh or brackish water	Unlikely. Suitable habitat not present in Study Area.	No further actions are recommended for this species.
<i>Cirsium hydrophilum</i> <i>Suisun thistle</i>	FE	a coastal ecosystem in the upper coastal intertidal zone between land and open salt water or brackish water that is regularly flooded by the tides.	Unlikely. Suitable habitat not present in Study Area.	No further actions are recommended for this species.
<i>Cordylanthus mollis</i> ssp. <i>mollis</i> soft bird's-beak	FE, SR, List 1B	Coastal salt marshes and swamps. 0-3 m. Blooms July- November.	Unlikely. Suitable habitat not present in Study Area.	No further actions are recommended for this species.
<i>Coastal Brackish Marsh</i> Coastal Brackish Marsh	None	Coastal salt marshes and swamps.	Unlikely. Suitable habitat is not present in the Study Area.	No further actions are recommended for this species
<i>Eriogonum truncatum</i> Mt. Diablo buckwheat	List 1B.1	Chaparral, coastal prairie, valley and foothill grassland.	Unlikely. Suitable habitat for this species does not occur in the Study Area.	No further actions are recommended for this species.
<i>Extriplex joaquinana</i> <i>San Joaquin spearscale</i>	List 1B.1	Habitat includes alkaline soil, Chenopod scrub Meadows and seeps, Playas, and Valley and foothill grassland	Unlikely. Suitable habitat for this species does not occur in the Study Area.	No further actions are recommended for this species.
<i>Holocarpha macradenia</i> Santa Cruz tarplant	FT, SE, List 1B	Light sandy soil or sandy clay in coastal prairie, valley and foothill grassland. 10-260 M. Blooms June- October.	Unlikely. Suitable habitat for this species does not occur in the Study Area.	No further actions are recommended for this species.

Appendix B Potential for Special-Status Species to Occur in the Proposed Project/Action Study Area				
Species	Status	Habitat	Potential for Occurrence	Recommendations
<i>Lasthenia conjugens</i> Contra Costa goldfields	FE, RP, List 1B	Mesic sites in cismontane woodland, alkaline playas, valley and foothill grassland. Vernal pools, swales, or low depressions. 1-445 m. Blooms March-June.	Unlikely. Suitable habitat for this species does not occur in the Study Area.	No further actions are recommended for this species.
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i> Delta tule pea	List 1B	Brackish to freshwater marshes and swamps. 0-4 m. Blooms May-July (can extend through September).	Unlikely. Suitable habitat for this species does not occur in the Study Area.	No further actions are recommended for this species.
<i>Lilaeopsis masonii</i> Mason's lilaeopsis	SR, List 1B	Brackish to freshwater marshes and swamps, or riparian scrub. Occurs in tidal zones, in muddy or silty soils formed through river deposition or river bank erosion. 0-10 m. Blooms April- November.	Unlikely. Suitable habitat for this species does not occur in the Study Area.	No further actions are recommended for this species.
<i>Puccinellia simplex</i> California alkali grass	List 1B	Grows in wet environments, often in saline or alkaline conditions. They are native to temperate to Arctic regions of the Northern and Southern Hemispheres.	Unlikely. Suitable habitat is not present in the Study Area.	No further actions are recommended for this species.
<i>Symphyotrichum lentum</i> Suisun Marsh aster	List 1B.2	Brackish to freshwater marshes and swamps, often along sloughs with common reed, bulrush, cattail, and blackberry. 0-3 m. Blooms May-November.	Unlikely. No suitable habitat for this species in the Study Area.	No further actions are recommended for this species.
<i>Trifolium depauperatum</i> var. <i>hydrophilum</i> saline clover	List 1B	Mesic, alkaline sites in valley and foothill grassland, vernal pools, marshes and swamps. 0-300 m. Blooms April-June.	Unlikely. Suitable habitat for this species does not occur in the Study Area.	No further actions are recommended for this species.
Mammals				
<i>Sorex ornatus sinuosus</i> Suisun Ornate Shrew	SSC	Requires dense low-lying cover and driftwood and other litter above the mean high tide line for nesting and foraging.	Unlikely. Species is restricted to areas more directly influenced by tidal waters.	No further actions are recommended for this species
<i>Lasiurus cinereus</i> Hoary bat	None	Occurs throughout most of North America and much of South America, with	Unlikely. Suitable habitat is not present in the Study Area.	No further actions are recommended for this species.

Appendix B Potential for Special-Status Species to Occur in the Proposed Project/Action Study Area				
Species	Status	Habitat	Potential for Occurrence	Recommendations
		disjunct populations in the Galápagos Islands and Hawaii.		
<i>Reithrodontomys raviventris</i> Salt-marsh Harvest Mouse	FE, SE	Primary habitat in pickleweed dominated saline emergent marshes of San Francisco Bay. Require adjacent upland areas for escape from high tides.	Unlikely. Suitable habitat for this species does not occur in the Study Area.	No further actions are recommended for this species.
Birds				
<i>Aquila chrysaetos</i> Golden Eagle	BCC, CFP	Found in rolling foothill and mountain areas, sage-juniper flats, desert. Cliff-walled canyons provide nesting habitat in most parts of range.	Unlikely. Suitable habitat is not present in the Study Area.	As a precautionary measure, pre-construction breeding bird surveys should be conducted for any activities occurring between February 1 st and August 31. st
<i>Asio flammeus</i> Short-eared Owl	SSC	Found in open, treeless areas with elevated sites for perches and dense vegetation for roosting and nesting. Often associated with wetlands and marginal vegetation.	Unlikely. No burrows were observed during the site visit.	As a precautionary measure, pre-construction breeding bird surveys should be conducted for any activities occurring between February 1 st and August 31. st
<i>Athene cunicularia hypugea</i> Western Burrowing Owl	SSC	Frequents open grasslands and shrublands with perches and burrows. Preys upon insects, small mammals, reptiles, birds, and carrion. Nests and roosts in old burrows of small mammals.	Unlikely. No burrows were observed during the site visit.	As a precautionary measure, pre-construction breeding bird surveys should be conducted for any activities occurring between February 1 st and August 31. st
<i>Buteo swainsoni</i> Swainson's Hawk	ST, BCC	Breeds in stands with few trees in juniper-sage flats, riparian areas and oak savannah. Requires adjacent suitable foraging areas such as grasslands or grain fields supporting rodent populations.	Unlikely. Suitable habitat is not present in the Study Area.	As a precautionary measure, pre-construction breeding bird surveys should be conducted for any activities occurring between February 1 st and August 31. st
<i>Circus cyaneus</i> Northern Harrier	SSC	Frequents meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands. Uses tall grasses and forbs in	Unlikely. Suitable habitat is not present in the Study Area.	As a precautionary measure, pre-construction breeding bird surveys should be conducted for any

Appendix B Potential for Special-Status Species to Occur in the Proposed Project/Action Study Area				
Species	Status	Habitat	Potential for Occurrence	Recommendations
		wetland, or at wetland/field border, for cover; roosts on round.		activities occurring between February 1 st and August 31. st
<i>Elanus leucurus</i> White-tailed Kite	CFP	Year-long resident of coastal and valley lowlands. Preys on small diurnal mammals and occasional birds, insects, reptiles, and amphibians.	Unlikely. Suitable habitat is not present in the Study Area.	As a precautionary measure, pre-construction breeding bird surveys should be conducted for any activities occurring between February 1 st and August 31. st
<i>Geothlypis trichas sinuosa</i> Yellowthroat	BCC, SSC	Frequents low, dense vegetation near water including fresh to saline emergent wetlands. Brushy habitats used in migration. Forages among wetland herbs and shrubs for insects primarily. Prefers willows for nesting.	Unlikely. Suitable habitat is not present in the Study Area.	As a precautionary measure, pre-construction breeding bird surveys should be conducted for any activities occurring between February 1 st and August 31. st
<i>Laterallus jamaicensis coturniculus</i> California black rail	ST, FPT	Rarely seen resident of saline, brackish, and fresh emergent wetlands in the San Francisco Bay area. Nest in dense stands of Pickleweed.	Unlikely. Suitable habitat is not present in the Study Area.	As a precautionary measure, pre-construction breeding bird surveys should be conducted for any activities occurring between February 1 st and August 31. st
<i>Melospiza melodia samuelis</i> San Pablo Song/Cliff Swallow	BCC, SSC	Resident of salt marshes along the north side of San Francisco and San Pablo Bays. Inhabits tidal sloughs in <i>Salicornia</i> marshes; nests in <i>Grindelia</i> bordering slough channels.	Present. 10 to 20 Cliff and/or San Pablo Song Swallow nests were found on the underneath side of the bridge structure which the Ductbank pipeline and on buildings near the proposed Air Header as well.	Remove non-active nests during September 1 and January 31 and/or conduct pre-construction breeding/nesting bird surveys for any construction activities occurring between February 1 st and August 31. st
<i>Sterna antillarum browni</i> California Least tern	FE	The breeding colonies are not dense and may appear along either marine or estuarine shores, or on sandbar islands in large rivers, in areas free from humans or predators.	Unlikely. Suitable habitat is not present in the Study Area.	As a precautionary measure, pre-construction breeding bird surveys should be conducted for any activities occurring between February 1 st and August 31. st
Reptiles				

Appendix B Potential for Special-Status Species to Occur in the Proposed Project/Action Study Area				
Species	Status	Habitat	Potential for Occurrence	Recommendations
<i>Thamnophis gigas</i> Giant garter snake	FT	Generally inhabits marshes, sloughs, ponds, slow moving streams, ditches, and rice fields which have water from early spring through mid-fall, emergent vegetation, open areas and high ground for hibernation and escape cover.	Unlikely. Suitable habitat not present in the Study Area.	No further actions are recommended for this species.
Amphibians				
<i>Ambystoma californiense</i> California Tiger Salamander	FT, SSC	Inhabits annual grass habitat and mammal burrows. Seasonal ponds and vernal pools crucial to breeding.	Unlikely. Annual grassland habitat is not in the Study Area.	No further actions are recommended for this species.
<i>Emys marmorata</i> Western Pond Turtle	SSC	Occurs in perennial ponds, lakes, rivers and streams with suitable basking habitat (mud banks, mats of floating vegetation, partially submerged logs) and submerged shelter.	Unlikely. Suitable perennial freshwater habitat and upland nesting habitat is not present in the Study Area.	No further actions are recommended for this species
<i>Rana aurora draytonii</i> California Red-legged Frog	FT, SSC	Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Documented to disperse through upland habitats after rains.	Unlikely. Suitable habitat is not present in the Study Area.	No further actions are recommended for this species
Fish				
<i>Hypomesus transpacificus</i> Delta smelt	FT	Found in large, main channels and open areas of the Bay. Occur from tidal freshwater reaches of the Delta west to eastern San Pablo Bay.	Unlikely. Suitable habitat is not present in the Study Area.	No further actions are recommended for this species
<i>Oncorhynchus mykiss</i> Steelhead, Central California Coast and Central Valley	FT/CSC	Drainages of San Francisco and San Pablo bays, central Calif. Coastal rivers.	Unlikely. Suitable habitat is not present in the Study Area.	No further actions are recommended for this species
<i>Pogonichthys macrolepidotus</i> Sacramento Splittail	SSC	Found in the lower delta; spawns in Sacramento and San Joaquin Rivers. Documented to occur in the Napa River by the Napa RCD. Flooded vegetation is used for spawning and foraging for juveniles.	Unlikely. No suitable stream habitat is present in the Study Area.	No further actions are recommended for this species.

Appendix B Potential for Special-Status Species to Occur in the Proposed Project/Action Study Area				
Species	Status	Habitat	Potential for Occurrence	Recommendations
<i>Spirinchus thaleichthys</i> Longfin Smelt	ST, FC	Found in several estuaries and lakes along the northern Pacific coast of North America.	Unlikely. No suitable stream habitat is present in the Study Area.	No further actions are recommended for this species.
Invertebrates				
<i>Bombus occidentalis</i> Western Bumble bee	None	Once was one of the most common bee species in the North West America. ^[4] They have been found from the Mediterranean California all the way up to the Tundra regions of Alaska, making them one of the bees with the widest range geographic range. ^[4] However, recently there has been a noticeable decline in population	Unlikely. Suitable habitat is not present in the Study Area.	No further actions are recommended for this species
<i>Branchinecta conservatio</i> Conservancy fairy shrimp	FE	Inhabit highly turbid water in vernal pools. Known from six populations in the northern central valley.	Unlikely. Suitable vernal pool habitat is not present in the Study Area.	No further actions are recommended for this species.
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	FT	Inhabit small, clear-water sandstone depression pools, grassy swales, slumps, or basalt-flow depression pools.	Unlikely. Suitable habitat is not present in the Study Area.	No further actions are recommended for this species
<i>Callophrys mossii bayensis</i> San Bruno Elfin butterfly	FE	Historically inhabited grasslands ranging over much of the northern San Francisco Bay region, but eventually was known to occur on the east and western sides of San Francisco Bay.	Unlikely. Suitable habitat is not present in the Study Area.	No further actions are recommended for this species
<i>Danaus plexippus</i> Monarch	None	Found in Mexico, California, along the Gulf coast, year-round in Florida, and in Arizona where the habitat has the specific conditions necessary for their survival	Unlikely. Suitable vernal pool habitat is not present in the Study Area.	No further actions are recommended for this species.
<i>Desmocerus californicus dimorphus</i> Valley elderberry longhorn beetle	FT	Occurs in the Central Valley region in association with blue elderberry shrubs. Prefers to lay eggs in elderberry stems greater than 1" in diameter.	Unlikely. No elderberry shrubs were identified in the Study Area and suitable habitat is not present.	No further actions are recommended for this species.
<i>Elaphrus viridis</i> Delta Green Ground beetle	FT	Restricted to a small region within Solano County, California.	Unlikely. Suitable vernal pool habitat is not present in the Study	No further actions are recommended for this species.

Appendix B Potential for Special-Status Species to Occur in the Proposed Project/Action Study Area				
Species	Status	Habitat	Potential for Occurrence	Recommendations
		Occupies vernal pool habitats, around which its life cycle is based.	Area.	
<i>Linderiella occidentalis</i> California Linderiella	None	A species of fairy shrimp native to California.	Unlikely. Suitable vernal pool habitat is not present in the Study Area.	No further actions are recommended for this species.
<i>Speyeria callippe callippe</i> Callippe silverspot butterfly	FE	Historically inhabited grasslands ranging over much of the northern San Francisco Bay region, but eventually was known to occur on the east and western sides of San Francisco Bay.	Unlikely. The only known colony now is on San Bruno Mountain on the San Francisco peninsula.	No further actions are recommended for this species.
<i>Syncaris pacifica</i> California freshwater shrimp	FE, SE	Endemic to Marin, Napa, and Sonoma Counties. Found in shallow pools away from streamflow in low gradient streams where riparian cover is moderate to heavy.	Unlikely. Suitable habitat is not present in the Study Area.	No further actions are recommended for this species

Key to status codes:

FE Federal Endangered

FT Federal Threatened

FC Federal Candidate

FD Federal De-listed

FPD Federal Proposed for De-listing

FPT Federal Proposed Threatened

NMFS Species under the Jurisdiction of the National Marine Fisheries Service

BCC USFWS Birds of Conservation Concern

RP Sensitive species included in a USFWS Recovery Plan or Draft Recovery Plan

SE State Endangered

ST State Threatened

SR State Rare

CSC CDFG Species of Special Concern

Draft CSC 4 April 2000 Draft CDFG Species of Special Concern

CFP CDFG Fully Protected Animal

WBWG Western Bat Working Group High Priority species

SLC Species of Local Concern

List 1A CNPS List 1A: Plants presumed extinct in California

List 1B CNPS List 1B: Plants rare, threatened or endangered in California and elsewhere

List 2 CNPS List 2: Plants rare, threatened, or endangered in California, but more common elsewhere

List 3 CNPS List 3: Plants about which CNPS needs more information (a review list)

Appendix C

Federally-Listed Biological Resources Report



Fairfield-Suisun
Sewer District

BLOWER REPLACEMENT

Project (2016)

Federally-Listed Biological Resources Report



September 2016



Federally-Listed Biological Resources Assessment Report

Fairfield-Suisun Sewer District
Blower Replacement Project (2016)

Prepared by:

SMB Environmental, Inc.

September 2016

Table of Contents

Section 1 - Introduction.....	4
1.1 Purpose of this Assessment	4
1.2 Species of Concern.....	4
Plants.....	4
Mammals.....	4
Birds.....	4
Reptiles.....	4
Amphibians.....	4
Fish	5
Crustaceans.....	5
Insects	5
 Section 2 - Description of Proposed Action	 6
2.1 Project Location and Background.....	6
2.2 Purpose and Need.....	7
2.3 Proposed Action Description.....	7
2.2 Construction Considerations	11
2.3 Area of Potential Effect	12
 Section 3 – Environmental and Regulatory Setting.....	 13
3.1 Regulatory Environment.....	13
3.1.1 Federal Regulations.....	13
3.1.1.2 Federal Migratory Bird Treaty Act.....	14
3.1.1.3 Federal Bald and Golden Eagle Protection Act.....	14
3.1.1.4 River and Harbor Act and Clean Water Act	15
3.2 Regional and Local Setting.....	15
3.2.2 Wetlands and Other Waters of the U.S.	16
3.3 Potentially Affected Federal Species and Habitats.....	16
 Section 4 – Effects on Species and Habitat	 23
4.1 General Effects	23
4.2 Effects to Federally Listed Species and Habitat.....	23
<i>Plants</i>	24
<i>Mammals</i>	24
<i>Birds</i>	24
<i>Reptiles</i>	26
<i>Amphibians</i>	27
<i>Fish</i>	27
<i>Crustaceans</i>	28
<i>Insects</i>	28
4.3 Waters of the United States, Including Wetlands.....	29

Seasonal Wetland/Vernal pools	29
Other Waters of the U.S.	29
Section 5 Determination of Effects	31
5.1 No Effect	31
Plant Species	31
Mammals.....	31
Birds.....	31
Reptiles.....	31
Amphibians.....	31
Fish	31
Crustaceans.....	31
Insects	31
Section 6 Bibliography	32
Figures	
Figure 1 - Fairfield-Suisun Sewer District Service Area.....	6
Figure 2 - Site and Key Plans.....	9
Figure 3 – Major Outdoor Improvements and Activities.....	10
Figure 4 – Location of Federally-listed Species in the Action Area.....	17
Tables	
Table 1 – Typical Construction Equipment for Proposed Project/Action Facilities.....	11
Table 2 - Potential for Federally-Listed Species to Occur in the Proposed Action Study Area.....	18
Attachments	
Attachment A – Species List for FSSD Blower Replacement Project.....	A-1

Section 1 - Introduction

This document describes the potential effects of the Fairfield-Suisun Sewer District's (District) proposed Blower Replacement Project (Proposed Action) on those federally listed and proposed species that may occur in the Proposed Action Area. This section describes the purpose of this assessment and identifies potential federally-listed species and species of concern that could be affected by the implementation of the District's Proposed Action.

1.1 Purpose of this Assessment

The purpose of this document is to describe potential effects of the District's Proposed Action on those federally-listed and proposed species that may occur in the Proposed Action Area. This document conforms to and with the legal requirements set forth under Section 7 of the Endangered Species Act (16 U.S.C 1536(c) and 50 CFR 402). The District is seeking funds from the State Revolving Fund (SRF) Loan Program that is administered by the State Water Resources Control Board (State Board) on behalf of the U.S. Environmental Protection Agency. This document evaluates the potential direct, indirect, and cumulative effects the Proposed Action may have on federally-listed and proposed species, and outlines those potential effects as well as recommended mitigation to reduce potential adverse effects to a less than significant level.

1.2 Species of Concern

Pursuant to Section 7(c) (1) of the Endangered Species Act, SMB obtained a list of federally-listed species potentially found within the Proposed Action Area from the U.S. Fish and Wildlife Service (USFWS) – See Attachment A. This list was also updated using a list provided from the California Natural Diversity Database (April 2016) – See Attachment B. This document analyzes the potential effects of the Proposed Action upon the following federally-listed and proposed species.

Plants

- | | |
|---|-------------------------|
| • <i>Cirsium hydrophilum</i> (E) | <i>Suisun thistle</i> |
| • <i>Cordylanthus mollis</i> ssp. <i>Mollis</i> (E) | Soft bird's-beak |
| • <i>Holocarpha macradenia</i> (T) | Santa Cruz tarplant |
| • <i>Lasthenia conjugens</i> (E) | Contra Costa goldfields |

Mammals

- | | |
|--|--------------------------|
| • <i>Reithrodontomys raviventris</i> (E) | Salt-marsh Harvest Mouse |
|--|--------------------------|

Birds

- | | |
|--|-------------------------|
| • <i>Rallus longirostris obsoletus</i> (E) | California Clapper Rail |
| • <i>Sternula antillarum</i> (E) | California least tern |

Reptiles

- | | |
|-------------------------------|--------------------|
| • <i>Thamnophis gigas</i> (E) | Giant garter snake |
|-------------------------------|--------------------|

Amphibians

- | | |
|---|-----------------------------|
| • <i>Ambystma californiense</i> (T) (X) | California tiger salamander |
|---|-----------------------------|

- *Rana aurora draytonii* (T) (X) California Red-legged frog

Fish

- *Hypomesus transpacificus* (T) (X) Delta smelt
- *Oncorhynchus mykiss* (T) (X) Steelhead, Central CA Coast /Valley

Crustaceans

- *Branchinecta conservation* (E) Conservancy fairy shrimp
- *Branchinecta lynchi* (T)(X) Vernal pool fairy shrimp
- *Syncaris pacifica* California freshwater shrimp

Insects

- *Callophrys mossii bayensis* (E) San Bruno Elfin butterfly
- *Desmocerus californicus dimorphus* (T) Valley elderberry longhorn beetle
- *Elaphrus viridis* (T) Delta Green Ground beetle
- *Speyeria callippe callippe* (E) Callippe silverspot butterfly

E= Endangered
T=Threatened
P=Proposed
C=Candidate
X=Critical Habitat
PX-Proposed Critical Habitat

Section 2 - Description of Proposed Action

This section provides a description of the Proposed Action including the location and background, purpose and need, construction considerations, and operational considerations.

2.1 Project Location and Background

The District is a special district, a legally constituted governmental entity established to fulfill a specific function – in the District’s case, wastewater and stormwater management in a multi-jurisdictional environment. An act of the California Legislature in 1951 created the District to perform wastewater collection and treatment, and water recycling services for all property within the boundaries of Fairfield, Suisun City, and Travis Air Force Base. The District also operates a drainage maintenance utility that performs specified stormwater management services in conjunction with the cities in its service area. Establishment of the District has enabled well-coordinated management of local wastewater and stormwater.

The District serves more than 135,000 residential, commercial and industrial customers in central Solano County, about 40 miles northeast of San Francisco. Households, retail businesses, major food and beverage producers, light industries, manufactures, and vital military operations depend upon the District’s service. Today, they serve a population more than 20 times that size. They have been able to accommodate the growth and evolving needs of the region by remaining flexible, dedicated to customer service and mindful of the trust placed in them to protect public health and the natural environment.

The District’s current treatment facilities, which replaced two older plants in 1977, underwent major renovations and expansions in 1982, 1987, 1989,



Figure 1

Fairfield-Suisun Sewer District

2007, and 2010 to keep pace with population growth, economic expansion of our region and technological advancements.

The District's treatment plant occupies about 150 acres¹ and is located in the southern portion of the City of Fairfield. It draws from a collection system that consists of 12 pump stations and a 70-mile network of sewers. The sewer conduits range from 12 inches to 48 inches in diameter. The replacement cost for the system is estimated at \$635 million—tangible evidence of the District's significant investment in infrastructure.

The Fairfield and Suisun City stormwater drainage systems serve an area of 41 square miles. The drainage system encompasses seven pump stations to maintain flow of stormwater to the natural creek system and the marsh.

The District safeguards public health and helps protect environmentally sensitive Suisun Marsh, which is the nation's largest brackish water marsh as well as the largest wetland on the Pacific Coast. This 116,000-acre region not only supports abundant plant life but also serves as a stopover for up to 1.5 million migratory birds traversing the Pacific Flyway each year. The District is proud to play a part in the preservation of these marshlands.

2.2 Purpose and Need

The primary purpose of the Proposed Project/Action is to enhance the reliability and efficiency of the secondary treatment process aeration system. There are several issues with the existing aeration system including leaking air header piping, obsolete and inefficient blowers, lack of properly sized redundant equipment, and electrical gear that has exceeded its useful design life. The secondary treatment process is one of the most critical processes in the plant and any prolonged disruption to the aeration system could severely impact the District's ability to meet its discharge requirements. For these reasons, the District has decided to undertake this project.

2.3 Proposed Action Description

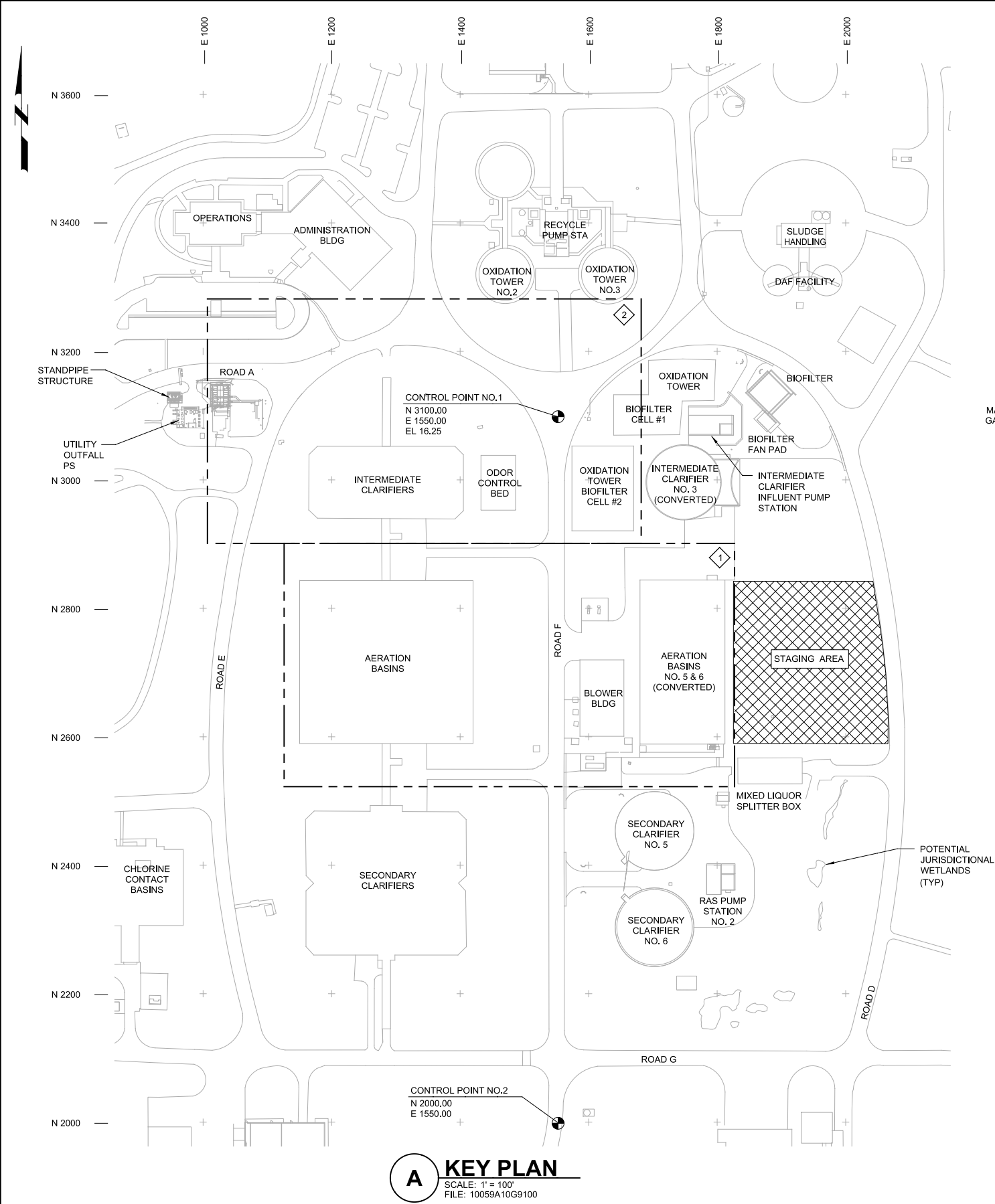
The primary purpose of the Proposed Project/Action is to enhance the reliability and efficiency of the secondary treatment process aeration system. There are several issues with the existing aeration system including leaking air header piping, obsolete and inefficient blowers, lack of properly sized redundant equipment, and electrical gear that has exceeded its useful design life. The secondary treatment process is one of the most critical processes in the plant and any prolonged disruption to the aeration system could severely impact the District's ability to meet its discharge requirements. For these reasons, the District has decided to undertake this project. As shown on Figures 2 and 3 - and more fully described in the District's *April 2016 Blower Replacement Project Preliminary Design Report*, the project will consist of the following elements:

- **New Aeration Blower Equipment** - Existing obsolete and oversized blower equipment within the existing Blower Building will be demolished and replaced with new high efficiency blowers. Blowers will be designed to meet current process demand conditions of 22,500 standard cubic

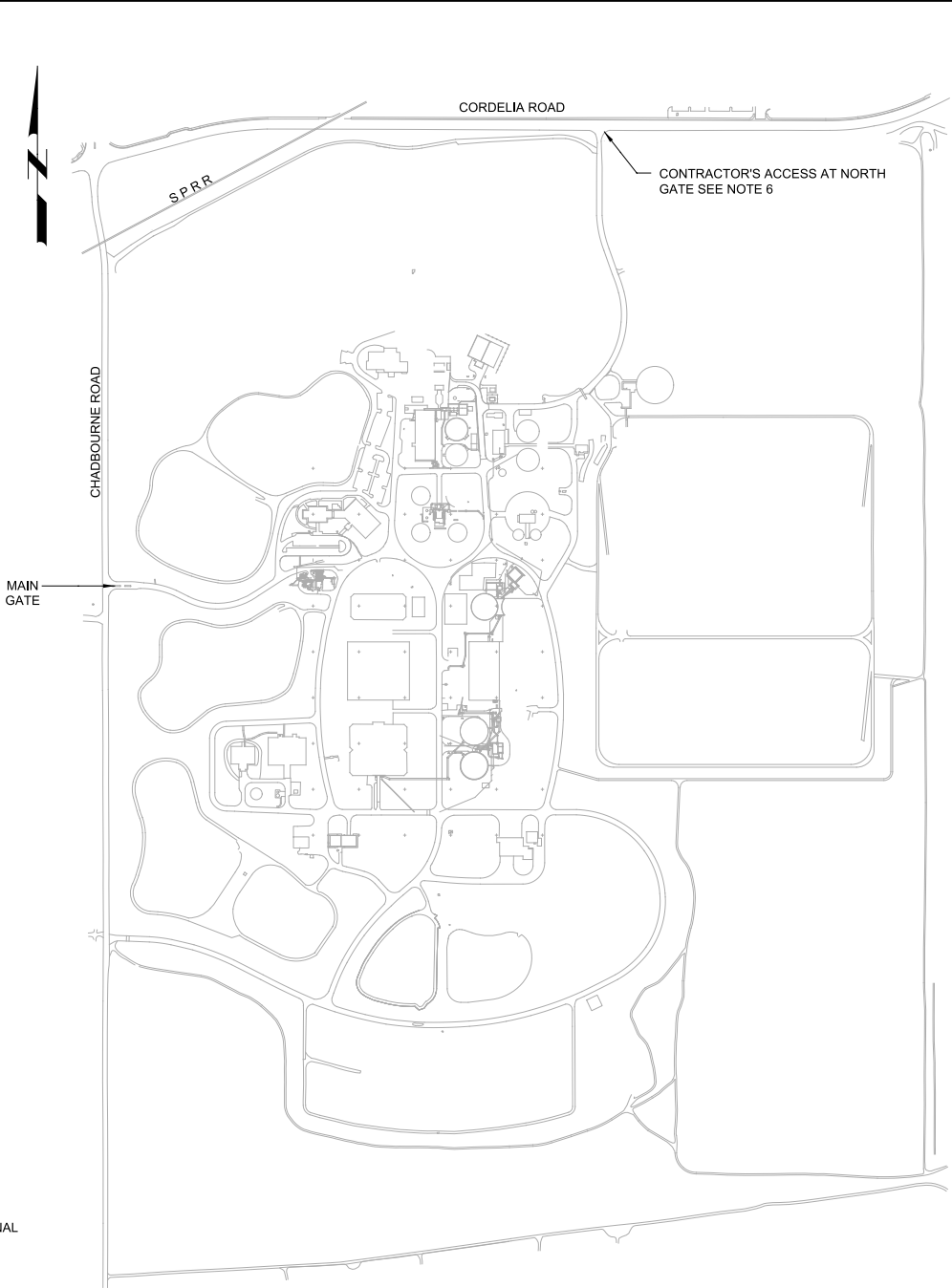
¹ The District also owns an additional 380 acres mostly to the east and the north of the fenced wastewater treatment plant boundaries.

feet per minute (scfm) as determined by the secondary treatment process evaluation conducted during preliminary design. Total blower duty horsepower will be approximately 1,200 horsepower (Hp) with one redundant unit provided.

- ***Electrical System and Controls*** - The existing obsolete electrical gear including the 480-volt motor control center 'MCC-R1', 480-volt switchgear 'EDR', 4160-volt transformers and switchgear, and the 480-volt standby generator 'ME-48', will be demolished and replaced. Replacement electrical and controls major equipment and components will consist of the following elements:
 - Two new outdoor 2,500kVA, 12kV-480V substations (for electrical supply to new blower equipment).
 - Approximately 500-linear feet of new 12-kV ductbank (approximately 30 inches wide by 24 inches high) between the existing 12-kV switchgear and Blower Building will be provided for routing of new dedicated 12-kV conductors to serve the blowers. The buried ductbank facility will be routed in parallel alignment to an existing ductbank within previously improved areas and will not cross any creeks or drainages. For construction, the trench is estimated to be approximately 2- to 4-feet wide, 6-feet deep, and 500-feet long. However, the District may decide to use horizontal directional drilling as an alternative method for installing the four 5-inch conduits. Once constructed, the alignment corridor will be returned to pre-construction conditions.
 - A new 480-volt "three-bus" power switchgear line-up for supplying power to the new blower equipment and connection to the new standby generator.
 - A new 2,500kVA, 480-volt diesel engine-driven standby generator for standby power supply to the new blower equipment and the new 480-volt switchgear equipment. The generator will either be installed inside the existing Blower Building or adjacent to it on a separate slab on grade concrete foundation with an outdoor prefabricated sound enclosure. The existing above grade fuel storage tanks serving the existing generator will be replaced with a new 660-gallon fuel tank to supply fuel to the new generator.
 - Replace existing 480-volt motor control center MCC-R1 with a new 480-volt MCC.
 - Upgrade the existing Blower Building PLC equipment hardware with new, Allen-Bradley ControlLogix hardware.



A KEY PLAN
SCALE: 1" = 100'
FILE: 10059A10G9100



B SITE PLAN
SCALE: 1" = 400'
FILE: 10059A10G9100

AREA - DRAWING SCHEDULE			
AREA PLAN	YARD PIPING AND UTILITY DRAWING NO.	PAVING AND GRADING DRAWING NO.	ELECTRICAL SITE PLAN DRAWING NO.
1	C-4	C-8	E-5
2	N/A	N/A	E-6

LEGEND:

	CONTRACTOR'S STAGING AREA
--	---------------------------

- GENERAL NOTES:**
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE STARTING WORK AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
 - UNLESS DETAILED, SPECIFIED, OR OTHERWISE INDICATED ON THE DRAWINGS, CONSTRUCTION SHALL BE AS INDICATED IN THE APPLICABLE TYPICAL DETAILS AND GENERAL NOTES. TYPICAL DETAILS SHALL APPLY EVEN THOUGH NOT REFERENCED AT SPECIFIC LOCATIONS ON DRAWINGS.
 - WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF WORK, DETAILS SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.
 - CONTRACTOR SHALL FIELD VERIFY THE VERTICAL AND HORIZONTAL LOCATIONS OF PIPES AND STRUCTURES PRIOR TO CONSTRUCTION.
 - CONTRACTOR SHALL FIELD VERIFY PIPE MATERIAL OF EXISTING CONNECTING PIPES PRIOR TO CONSTRUCTION.
 - CONTRACTOR ACCESS AND DELIVERIES SHALL BE THROUGH NORTH GATE. PLACE TRAFFIC ROUTING SIGNS AT CORNER OF CHADBOURNE AND CORDELIA ROADS AND ALSO AT NORTH ENTRY GATE.
 - ELECTRICAL POWER SOURCE FOR STAGING AREA TO BE SUPPLIED BY DISTRICT. INTERRUPTION OF POWER MAY OCCUR PERIODICALLY DUE TO MAINTENANCE WORK, CONSTRUCTION RELATED ACTIVITIES OR OTHER UNPLANNED REASONS.
 - HYDROSEED ALL DISTURBED AREAS PRIOR TO BEGINNING OF EACH WET WEATHER SEASON DURING THE COURSE OF THE PROJECT AND AFTER SUBSTANTIAL COMPLETION.
 - CONTRACTOR SHALL REPLACE IN KIND OR REPAIR EXISTING ITEMS DAMAGED BY THE CONTRACTOR'S ACTIVITIES INCLUDING BUT NOT LIMITED TO LANDSCAPE IRRIGATION SYSTEM PIPING AND RELATED ELECTRICAL CONDUITS. NOT ALL EXISTING ITEMS ARE SHOWN ON THE DRAWINGS. THE DRAWINGS OF EXISTING ITEMS ARE AVAILABLE FROM THE OWNER ON REQUEST.

- SURVEY NOTES:**
- SURVEY BASE DRAWING BY HAMMOND, JENSEN, WALLEN AND ASSOCIATES, INC. (DEC 12, 1993).
 - THE BASE DRAWING (EXISTING FEATURES) IS APPROXIMATE AND FOR INFORMATION ONLY. THE CONTRACTOR SHALL VERIFY ALL LAYOUTS PRIOR TO CONSTRUCTION.
 - THE SURVEY DATA IS BASED ON EXISTING PLANT DATUM. DRAWINGS INCLUDED HEREIN USE PLANT DATUM.
 - USE HORIZONTAL CONTROL POINTS AND BENCHMARK INDICATED ON PLANS BY . CONTRACTOR SHALL VERIFY CONTROL PRIOR TO BEGINNING WORK.

					DATE MARCH 2016				 FAIRFIELD-SUISUN SEWER DISTRICT 1010 Chadbourne Road Fairfield, CA 94534-9700 (707) 429-8930 phone (707) 429-1280 fax	BLOWER REPLACEMENT PROJECT (2016) PROJECT NO. XXXX		Figure 2	
					DESIGNED BY RGL					SITE AND KEY PLANS			
					DRAWN BY OB								
					CHECKED BY								
					JOB NUMBER 10059A10	DATE		WARNING  1" IF BAR DOES NOT MEASURE 1 INCH DRAWING IS NOT TO SCALE		SHEET OF XX SHEETS			
REV	DATE	BY	DESCRIPTION										



Figure 3
Major Outdoor Improvements and Activities

- **Air Header Replacement** - The existing 54-inch diameter buried aeration air headers for the secondary treatment process will be abandoned and replaced due to known air leaks in the piping system. This will involve installation of a new 36-inch diameter above grade coated carbon steel pipe. The new pipe will be installed approximately 15-feet above grade with cast-in drilled hole (CIDH) pier supports spaced at 30-foot max spacing and drilled to approximately 25-foot depth. The existing pipe will be filled with concrete slurry and abandoned in place.

The final pre-design report was completed in April 2016. The project is currently in the final design phase with design completion scheduled for December 2016 and construction in 2017-2018.

2.2 Construction Considerations

Construction of the Proposed Project/Action facilities is expected to begin in the spring/summer of 2017 and will likely continue for 18-months into the fall of 2018. Construction work will typically be done within normal working hours, weekdays between the hours of 7 a.m. and 4 p.m., and possibly on Saturdays between the hours of 7 a.m. and 4 p.m. The Proposed Project/Action would be constructed entirely within the District's existing wastewater treatment plant. During construction, approximately 10-15 people would be working on the Proposed Project/Action. Table 1 provides a list of the typical construction equipment that may be used for the construction of the Proposed Project/Action. As shown in Figure 2 above, a temporary staging area would be used to store materials, construction equipment, job trailer(s), and other materials needed for construction activities. The construction area would be approximately 0.5 acres in size and would be outside of a potential wetland area² to the west. The construction activities would take place within the areas designated in Figure 2 and entirely within the boundaries of the District's wastewater treatment plant site. The District will employ appropriate construction best management practices (BMPs). As a final step of construction activities, the construction site would be cleaned up and restored to previous conditions. Construction trash and debris would be collected and disposed of properly.

Table 1 Typical Construction Equipment for Project/Action Facilities	
Equipment	Use
Backhoe	Excavating trenches for ductbank
Excavator	Excavating trenches for ductbank
Cast-in-Drill Hole (CIDH) Drilling Equipment	Installing Air Header supports
Loader	Move and carry construction materials, equipment, and debris
Roller/Compactor	Soil Compaction

² This area has not been confirmed to be an actual wetland and is not on the U.S. Fish and Wildlife list of known wetlands. Regardless, the Proposed Project would not affect this area.

Table 1 Typical Construction Equipment for Project/Action Facilities	
Equipment	Use
Cranes	Off loading equipment, materials and laying ductbank
Semi-trailer trucks	Delivering materials, equipment, and removal of debris
Forklift	Lifting equipment and materials
Pick-up trucks	General use and hauling of minor equipment, tools, and materials
Scissor Lift	Elevated air header piping installation and coatings.
Concrete trucks and pumps	Air header sealment and pad construction
Water Truck	Compaction, erosion, and dust control

Once constructed, the District would resume existing day-to-day operations and maintenance procedures. No new permanent District employees are anticipated to be required for the Proposed Project/Action.

2.3 Area of Potential Effect

The Area of Potential Effect (APE) for the Proposed Project/Action is defined as “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of cultural resources as defined above and as shown on Figures 2 and 3. Trenching for installing the ductbank would typically require a width of two to four feet and a vertical depth of approximately six feet; therefore the vertical APE would be typically six feet.

Section 3 – Environmental and Regulatory Setting

This section describes the existing environment within and around the Proposed Project/Action Study Area as it pertains to state and federally-listed species.

3.1 Regulatory Environment

The following discussion identifies federal, state, and local regulations that serve to protect sensitive biological resources relevant to the environmental review process.

3.1.1 Federal Regulations

The following discussion identifies federal regulations that serve to protect sensitive biological resources relevant to the environmental review process.

3.1.1.1 Federal Endangered Species Act

The Secretary of the Interior (represented by the USFWS) and the Secretary of Commerce (represented by the National Marine Fisheries Service, NMFS) have joint authority to list a species as threatened or endangered under the Federal Endangered Species Act (FESA) (United States Code [USC], Title 16, Section 1533[c]). FESA prohibits the “take” of endangered or threatened fish, wildlife, or plants species in areas under federal jurisdiction or in violation of state law, in addition to adverse modifications to their critical habitat. Under FESA, the definition of “take” is to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” The USFWS and NMFS also interpret the definition of “harm” to include significant habitat modification that could result in the take of a species.

If an activity would result in the take of a federally listed species, one of the following is required: an incidental take permit under Section 10(a) of FESA, or an incidental take statement issued pursuant to federal interagency consultation under Section 7 of FESA. Such authorization typically requires various measures to avoid and minimize species take, and to protect the species and avoid jeopardy to the species’ continued existence.

Pursuant to the requirements of Section 7 of FESA, a federal agency reviewing a proposed project which it may authorize, fund, or carry out must determine whether any federally listed threatened or endangered species, or species proposed for federal listing, may be present in the project area and determine whether implementation of the proposed project is likely to affect the species. In addition, the federal agency is required to determine whether a proposed project is likely to jeopardize the continued existence of a listed species or any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed or designated for such species (16 USC 1536[3], [4]).

Generally, the USFWS implements FESA for terrestrial and freshwater fish species and the NMFS implements FESA for marine and anadromous fish species. USFWS and/or NMFS must authorize projects where a federally listed species is present and likely to be affected by an existing or proposed project. Authorization may involve a letter of concurrence that the project will not result in the potential take of a listed species, or may result in the issuance of a Biological Opinion that describes measures that must be undertaken to minimize the likelihood of an incidental take of a listed species. A project that is determined by USFWS or NMFS to jeopardize the continued existence of a listed species cannot be approved under a Biological Opinion.

Where a federal agency is not authorizing, funding, or carrying out a project, take that is incidental to the lawful operation of a project may be permitted pursuant to Section 10(a) of FESA through approval of a habitat conservation plan (HCP).

FESA requires the federal government to designate “critical habitat” for any species it lists under the Endangered Species Act. “Critical habitat” is defined as: (1) specific areas within the geographical area occupied by the species at the time of listing, if they contain physical or biological features essential to the species conservation, and those features that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species if the regulatory agency determines that the area itself is essential for conservation.

3.1.1.2 Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) (16 USC, Section 703, Supp. I, 1989), as amended by the Migratory Bird Treaty Reform Act, prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. The act addresses whole birds, parts of birds, and bird nests and eggs. For projects that would not cause direct mortality of birds, the MBTA is generally interpreted in CEQA analyses as protecting active nests of all species of birds that are included in the “List of Migratory Birds” published in the Federal Register in 1995 and as amended in 2005. Though the MBTA allows permits to be issued for import and export, banding, scientific collecting, taxidermy, and rehabilitation, among other reasons, there is no provision in the MBTA that allows for species take related to creation or other development (Code of Federal Regulations, Title 50: Wildlife and fisheries Part 21; Migratory Bird Permits).

3.1.1.3 Federal Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC 668-668c), enacted in 1940, and amended several times since then, prohibits anyone, without a permit issued by the Secretary of the Interior, from “taking” bald eagles, including their parts, nests, or eggs. The act provides criminal penalties for persons who “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle...[or any golden eagle], alive or dead, or any part, nest, or egg thereof.” The act defines “take” as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.”

3.1.1.4 River and Harbor Act and Clean Water Act

The Secretary of the Army (represented by the Corps of Engineers [USACE]) has permitting authority over activities affecting waters of the United States under Section 10 of the River and Harbors Act (33 USC 403) and Section 404 of the Clean Water (33 USC 1344). Waters of the United States are defined in Title 33 CFR Part 328.3(a) and include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds. Section 10 of the River and Harbor Act requires a federal license or permit prior to accomplishing any work in, over, or under navigable waters of the United States, or which affects the course, location, condition or capacity of such waters. Section 404 of the Clean Water Act requires a federal license or permit prior to discharging dredged or fill material into waters of the United States, unless the activity is exempt (33 CFR 324.4) from Section 404 permit requirements (e.g., certain farming and forestry activities). To obtain a federal license or permit, project proponents must demonstrate that they have attempted to avoid the resource or minimize impacts on the resource; however, if it is not possible to avoid impacts or minimize impacts further, the project proponent is required to mitigate remaining project impacts on all federally-regulated waters of the United States.

Section 401 of the Act (33 USC 1341) requires any project proponents for a federal license or permit to conduct any activity including, but not limited to, the creation or operation of facilities, which may result in any discharge into navigable waters of the United States to obtain a certification from the state in which the discharge originates or would originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the navigable waters at the point where the discharge originates or would originate, that the discharge will comply with the applicable effluent limitations and water quality standards. A certification obtained for the creation of any facility must also pertain to the subsequent operation of the facility. The responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and its 9 Regional Water Quality Control Boards (RWQCBs).

3.2 Regional and Local Setting

The Proposed Project/Action area lies between 10 and 20 feet in elevation at the southern edge of a flat plain, about ¼ mile north and ½ mile west of the marshlands around Suisun Slough, and five miles north of Suisun Marsh. The Suisun Marsh is the largest contiguous brackish marsh remaining on the west coast of North America. It is a critical part of the San Francisco Bay-Delta estuary ecosystem. Encompassing 116,000 acres, the Suisun Marsh includes 52,000 acres of managed wetlands, 30,000 acres of bays and sloughs, 27,700 acres of uplands, and 6,300 acres of tidal wetlands. It is home to public waterfowl hunting areas and 158 private duck hunting clubs. The Suisun Marsh serves as the resting and feeding ground for tens of thousands of wintering and migrating waterfowl and provides habitat for more than 221 species of birds. The Suisun Marsh supports more than 40 species of fish and 80% of the state's commercial salmon fishery by providing important tidal rearing areas for juvenile fish allowing them to grow twice as fast as those reared in the upper watershed (improving their survival). The Marsh is also home to the endemic Tule Elk, and Federally Endangered Salt Marsh

Harvest Mouse. The Marsh's large open space and proximity to vast urban areas makes it ideally suited for wildlife viewing, hiking, canoeing, and other recreation opportunities.

The Proposed Project/Action would be located within the District's wastewater treatment plant and would not affect the Suisun Marsh or any other habitat of critical importance. The site is a disturbed site from a biological resources perspective. There are several mature trees and buildings in the area that could and does support nesting for migrating birds and raptors. However, the ground within the Project/Action area is mostly concrete or asphalt-paved or within existing buildings and does not contain any critical habitat or special plant species.

3.2.2 Wetlands and Other Waters of the U.S.

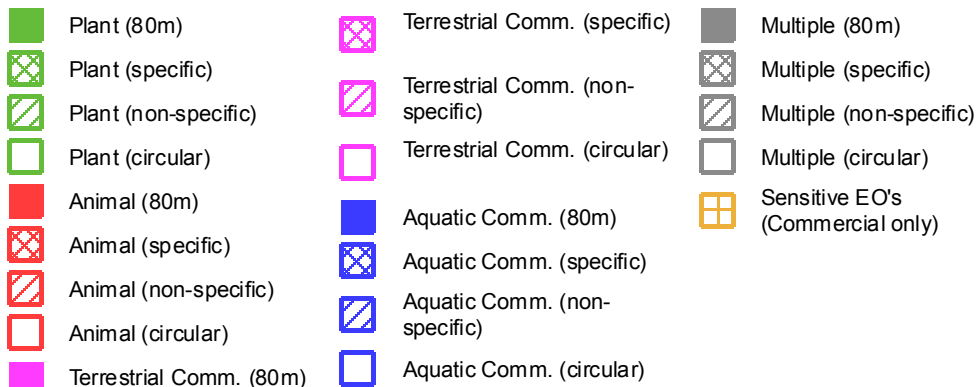
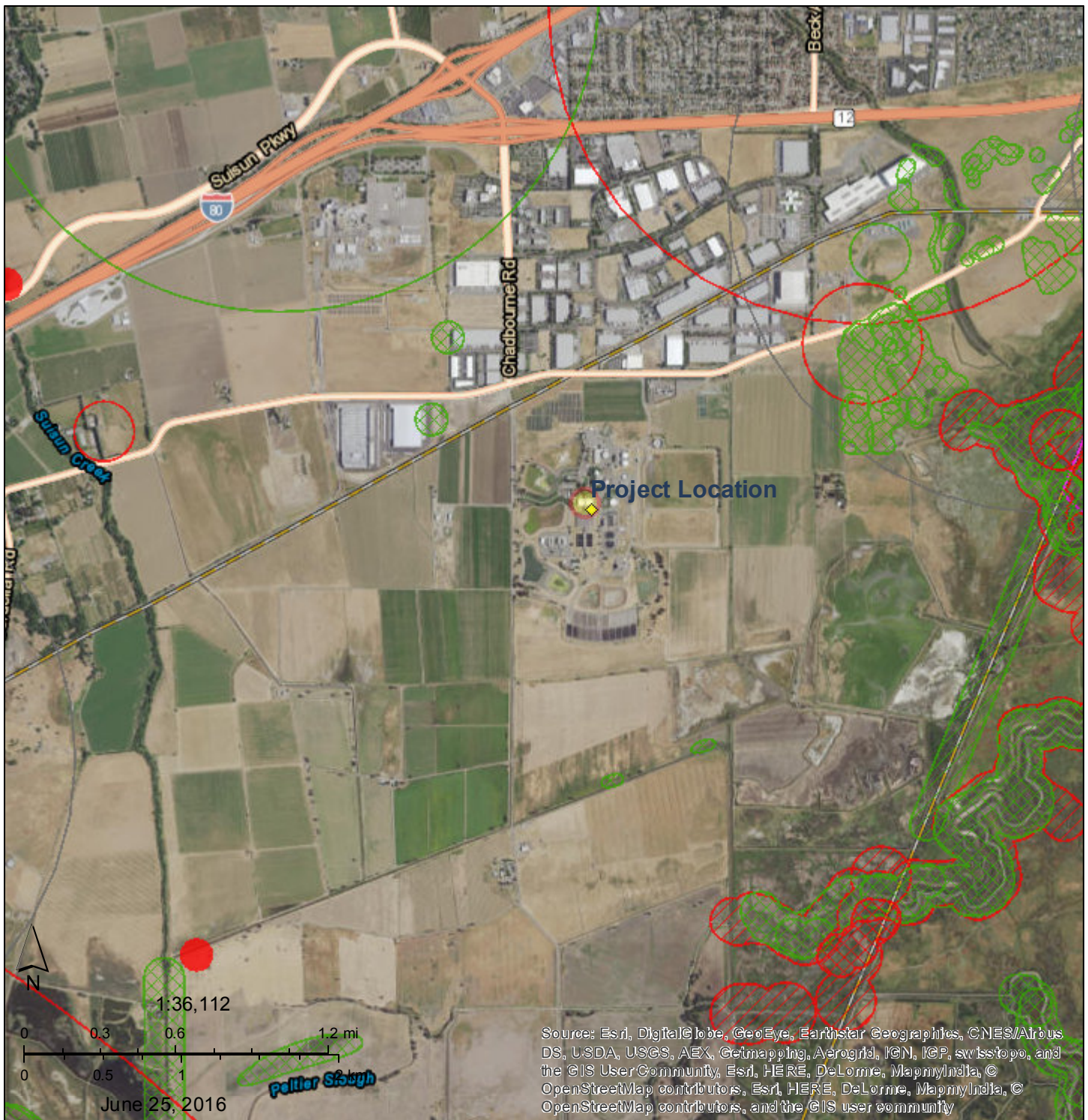
Based upon a literature search and a reconnaissance field study on April 29, and July 7, 2016, there are no known wetlands or vernal pools that would be affected by the Proposed Project/Action. The Proposed Project/Action would not cross any local creeks/drainages that could be considered Other Waters of the U.S.

3.3 Potentially Affected Federal Species and Habitats

A record search of USFWS' Species List and the CDFW's California Natural Diversity Database (CNDDB) was conducted for the area within a five-mile radius of the Project area to identify previously reported occurrences of state and federal special-status plants and animals. In addition, a field visit of the Proposed Action was conducted on April 29, 2016 and July 7, 2016 to determine the potential for special-status species to occur within the general vicinity of the Proposed Project/Action Study Area (i.e. Construction Area) as described in Chapter 2 – Description of Proposed Action. These field visits were not intended to be protocol-level surveys to determine the actual absence or presence of special-status species, but were conducted to determine the potential for special-status species to occur within the Proposed Project/Action Area. Figure 4 – shows the location of known state and federal listed species within the Project/Action Area. The potential for each special status species to occur in the Study Area was then evaluated according to the following criteria:

- **No Potential.** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- **Unlikely.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- **Moderate Potential.** Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- **High Potential.** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

Figure 4 - Location of Federal and State Listed Species



- **Present.** Species is observed on the site or has been recorded on the site recently.

Table 2 below lists the federally-listed species that have the potential to exist within the Proposed Project/Action Area, along with their preferred habitats, the potential to occur within the Action Study Area, and recommendations to avoid and minimize potential effects to these species.

Table 2 Potential for Federally-Listed Species to Occur in the Proposed Project/Action Study Area				
Species	Status	Habitat	Potential for Occurrence	Recommendations
Plants				
<i>Cirsium hydrophilum</i> Suisun thistle	FE	a coastal ecosystem in the upper coastal intertidal zone between land and open salt water or brackish water that is regularly flooded by the tides.	Unlikely. Suitable habitat not present in Study Area.	No further actions are recommended for this species.
<i>Cordylanthus mollis</i> ssp. <i>mollis</i> soft bird's-beak	FE, SR, List 1B	Coastal salt marshes and swamps. 0-3 m. Blooms July- November.	Unlikely. Suitable habitat not present in Study Area.	No further actions are recommended for this species.
<i>Holocarpha macradenia</i> Santa Cruz tarplant	FT, SE, List 1B	Light sandy soil or sandy clay in coastal prairie, valley and foothill grassland. 10-260 M. Blooms June- October.	Unlikely. Suitable habitat for this species does not occur in the Study Area.	No further actions are recommended for this species.
<i>Lasthenia conjugens</i> Contra Costa goldfields	FE, RP, List 1B	Mesic sites in cismontane woodland, alkaline playas, valley and foothill grassland. Vernal pools, swales, or low depressions. 1-445 m. Blooms March-June.	Unlikely. Suitable habitat for this species does not occur in the Study Area.	No further actions are recommended for this species.
Mammals				
<i>Reithrodontomys raviventris</i> Salt-marsh Harvest Mouse	FE, SE	Primary habitat in pickleweed dominated saline emergent marshes of San Francisco Bay. Require adjacent upland areas for escape from high tides.	Unlikely. Suitable habitat for this species does not occur in the Study Area.	No further actions are recommended for this species.
Birds				
<i>Aquila chrysaetos</i> Golden Eagle	BCC, CFP	Found in rolling foothill and mountain areas, sage-juniper flats, dessert. Cliff-walled canyons provide nesting habitat in most parts of range.	Unlikely. Suitable habitat is not present in the Study Area.	As a precautionary measure, pre-construction breeding bird surveys should be conducted for any activities occurring between February 1 st and August 31. st
<i>Asio flammeus</i> Short-eared Owl	SSC	Found in open, treeless areas with elevated sites	Unlikely. No burrows were observed during	As a precautionary measure, pre-

Table 2 Potential for Federally-Listed Species to Occur in the Proposed Project/Action Study Area				
Species	Status	Habitat	Potential for Occurrence	Recommendations
		for perches and dense vegetation for roosting and nesting. Often associated with wetlands and marginal vegetation.	the site visits.	construction breeding bird surveys should be conducted for any activities occurring between February 1 st and August 31. st
<i>Athene cunicularia hypugea</i> Western Burrowing Owl	SSC	Frequents open grasslands and shrublands with perches and burrows. Preys upon insects, small mammals, reptiles, birds, and carrion. Nests and roosts in old burrows of small mammals.	Unlikely. No burrows were observed during the site visit.	As a precautionary measure, pre-construction breeding bird surveys should be conducted for any activities occurring between February 1 st and August 31. st
<i>Buteo swainsoni</i> Swainson's Hawk	ST, BCC	Breeds in stands with few trees in juniper-sage flats, riparian areas and oak savannah. Requires adjacent suitable foraging areas such as grasslands or grain fields supporting rodent populations.	Unlikely. Suitable habitat is not present in the Study Area.	As a precautionary measure, pre-construction breeding bird surveys should be conducted for any activities occurring between February 1 st and August 31. st
<i>Circus cyaneus</i> Northern Harrier	SSC	Frequents meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands. Uses tall grasses and forbs in wetland, or at wetland/field border, for cover; roosts on ground.	Unlikely. Suitable habitat is not present in the Study Area.	As a precautionary measure, pre-construction breeding bird surveys should be conducted for any activities occurring between February 1 st and August 31. st
<i>Elanus leucurus</i> White-tailed Kite	CFP	Year-long resident of coastal and valley lowlands. Preys on small diurnal mammals and occasional birds, insects, reptiles, and amphibians.	Unlikely. Suitable habitat is not present in the Study Area.	As a precautionary measure, pre-construction breeding bird surveys should be conducted for any activities occurring between February 1 st and August 31. st
<i>Geothlypis trichas sinuosa</i> Yellowthroat	BCC, SSC	Frequents low, dense vegetation near water including fresh to saline emergent wetlands. Brushy habitats used in migration. Forages among wetland herbs and shrubs for insects primarily. Prefers willows for nesting.	Unlikely. Suitable habitat is not present in the Study Area.	As a precautionary measure, pre-construction breeding bird surveys should be conducted for any activities occurring between February 1 st and August 31. st

Table 2 Potential for Federally-Listed Species to Occur in the Proposed Project/Action Study Area				
Species	Status	Habitat	Potential for Occurrence	Recommendations
<i>Laterallus jamaicensis coturniculus</i> California black rail	ST, FPT	Rarely seen resident of saline, brackish, and fresh emergent wetlands in the San Francisco Bay area. Nest in dense stands of Pickleweed.	Unlikely. Suitable habitat is not present in the Study Area.	As a precautionary measure, pre-construction breeding bird surveys should be conducted for any activities occurring between February 1 st and August 31. st
<i>Melospiza melodia samuelis</i> San Pablo Song Swallow	BCC, SSC	Resident of salt marshes along the north side of San Francisco and San Pablo Bays. Inhabits tidal sloughs in <i>Salicornia</i> marshes; nests in <i>Grindelia</i> bordering slough channels.	Present. 10 to 20 Cliff and/or San Pablo Song Swallow nests were found on the underneath side of the bridge structure that crosses the proposed Ductbank and on buildings near the proposed Air Header as well.	Remove non-active nests during September 1 and January 31 and/or conduct pre-construction breeding/nesting bird surveys for any construction activities occurring between February 1 st and August 31. st
<i>Sterna antillarum browni</i> California Least tern	FE	The breeding colonies are not dense and may appear along either marine or estuarine shores, or on sandbar islands in large rivers, in areas free from humans or predators.	Unlikely. Suitable habitat is not present in the Study Area.	As a precautionary measure, pre-construction breeding bird surveys should be conducted for any activities occurring between February 1 st and August 31. st
Reptiles				
<i>Thamnophis gigas</i> Giant garter snake	FT	Generally inhabits marshes, sloughs, ponds, slow moving streams, ditches, and rice fields which have water from early spring through mid-fall, emergent vegetation, open areas and high ground for hibernation and escape cover.	Unlikely. Suitable habitat not present in the Study Area.	No further actions are recommended for this species.
Amphibians				
<i>Ambystoma californiense</i> California Tiger Salamander	FT, SSC	Inhabits annual grass habitat and mammal burrows. Seasonal ponds and vernal pools crucial to breeding.	Unlikely. Annual grassland habitat is not in the Study Area.	No further actions are recommended for this species.
<i>Rana aurora draytonii</i> California Red-legged Frog	FT, SSC	Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Documented	Unlikely. Suitable habitat is not present in the Study Area.	No further actions are recommended for this species

Table 2 Potential for Federally-Listed Species to Occur in the Proposed Project/Action Study Area				
Species	Status	Habitat	Potential for Occurrence	Recommendations
		to disperse through upland habitats after rains.		
Fish				
<i>Hypomesus transpacificus</i> Delta smelt	FT	Found in large, main channels and open areas of the Bay. Occur from tidal freshwater reaches of the Delta west to eastern San Pablo Bay.	Unlikely. Suitable habitat is not present in the Study Area.	No further actions are recommended for this species
<i>Oncorhynchus mykiss</i> Steelhead, Central California Coast and Central Valley	FT/CSC	Drainages of San Francisco and San Pablo bays, central Calif. Coastal rivers.	Unlikely. Suitable habitat is not present in the Study Area.	No further actions are recommended for this species
<i>Spirinchus thaleichthys</i> Longfin Smelt	ST, FC	Found in several estuaries and lakes along the northern Pacific coast of North America.	Unlikely. No suitable stream habitat is present in the Study Area.	No further actions are recommended for this species.
Invertebrates				
<i>Branchinecta conservatio</i> Conservancy fairy shrimp	FE	Inhabit highly turbid water in vernal pools. Known from six populations in the northern central valley.	Unlikely. Suitable vernal pool habitat is not present in the Study Area.	No further actions are recommended for this species.
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	FT	Inhabit small, clear-water sandstone depression pools, grassy swales, slumps, or basalt-flow depression pools.	Unlikely. Suitable habitat is not present in the Study Area.	No further actions are recommended for this species
<i>Callophrys mossii bayensis</i> San Bruno Elfin butterfly	FE	Historically inhabited grasslands ranging over much of the northern San Francisco Bay region, but eventually was known to occur on the east and western sides of San Francisco Bay.	Unlikely. Suitable habitat is not present in the Study Area.	No further actions are recommended for this species
<i>Desmocerus californicus dimorphus</i> Valley elderberry longhorn beetle	FT	Occurs in the Central Valley region in association with blue elderberry shrubs. Prefers to lay eggs in elderberry stems greater than 1" in diameter.	Unlikely. No elderberry shrubs were identified in the Study Area and suitable habitat is not present.	No further actions are recommended for this species.
<i>Elaphrus viridis</i> Delta Green Ground beetle	FT	Restricted to a small region within Solano County, California. Occupies vernal pool habitats, around which its life cycle is based.	Unlikely. Suitable vernal pool habitat is not present in the Study Area.	No further actions are recommended for this species.
<i>Speyeria callippe callippe</i> Callippe silverspot	FE	Historically inhabited grasslands ranging over	Unlikely. The only known colony now is on	No further actions are recommended

Table 2 Potential for Federally-Listed Species to Occur in the Proposed Project/Action Study Area				
Species	Status	Habitat	Potential for Occurrence	Recommendations
butterfly		much of the northern San Francisco Bay region, but eventually was known to occur on the east and western sides of San Francisco Bay.	San Bruno Mountain on the San Francisco peninsula.	for this species.
<i>Syncaris pacifica</i> California freshwater shrimp	FE, SE	Endemic to Marin, Napa, and Sonoma Counties. Found in shallow pools away from streamflow in low gradient streams where riparian cover is moderate to heavy.	Unlikely. Suitable habitat is not present in the Study Area.	No further actions are recommended for this species

Section 4 – Effects on Species and Habitat

This section describes the potential effects on federally-listed species and habitat as a result of implementing the Proposed Action.

4.1 General Effects

Implementation of the Proposed Action has the potential to cause the following general effects on federally listed species and habitat in the Action Area.

- **Increase in Human Activity.** The Proposed Action will require construction crews to be working in the Action Area for several months. In addition, construction activities will cause an increase in noise and vibration in the Action Area, thereby potentially disturbing non-status species of wildlife causing them to avoid the area. This may indirectly cause reduced viability, as foraging opportunities may temporarily become more limited and/or chances for predation increase.

4.2 Effects to Federally Listed Species and Habitat

This section describes the potential direct, indirect, cumulative, interrelated, and/or interdependent effects the Proposed Project/Action may have to those species identified in Section 3.0 as having a medium or higher potential to occur within the Proposed Project/Action Area. Possible interrelated and interdependent actions to the Proposed Project/Action are also discussed. Potential effects are defined as follows.

- **Direct Effect.** Those effects generated directly from the Proposed Project/Action, such as an incidental take during construction and elimination of suitable habitat due to construction (50CFR 402.02)
- **Indirect Effect.** Those effects that are caused by the Proposed Project/Action and are later in time, such as the discharge of sediment or chemicals that may adversely affect water quality downstream of the Action Area (50 CFR 402.02).
- **Cumulative Effect.** Effects of future state or private activities that are reasonably certain to occur within the Proposed Action Area (50 CFR 402.02).
- **Interrelated Actions.** Those actions that are part of, and dependent upon, a larger action (50 CFR 402.02).
- **Interdependent Actions.** Actions that have no independent utility apart from the Proposed Action (50 CFR 402.02).

The Proposed Project/Action would not have any direct, indirect, cumulative, interrelated actions, and/or interdependent actions that would result in a “take”³ of federally-listed species during construction and/or operation activities. Summarized below are the potential effects on each identified federally-listed categories of species of concern as identified by USFWS and CDFW.

³ From Section 3(18) of the Federal Endangered Species Act: "The term '**take**' means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

Plants

This section describes the potential direct, indirect, cumulative, interrelated and/or interdependent effects the Proposed Action may have on federally-listed plant species.

Direct and Indirect Effects

The Proposed Action would not have any direct or indirect effects that would result in a “take” of federally-listed plant species during construction and/or operation activities.

Cumulative Effects

The Proposed Project/Action will not have significant cumulative effects on federally-listed plant species. No other known development is currently planned in the Proposed Project/Action Area that would remove or further degrade habitat in the vicinity of Proposed Project/Action Area. In addition, the operations of the Proposed Project/Action would not have any long-term effects to plant species after construction is completed.

Interdependent and Interrelated Effects

The Proposed Project/Action is considered to be an action that has independent utility apart from other Projects in the City of Fairfield and Solano County and would not have any additional adverse interrelated effects on plant species.

Mammals

This section describes the potential direct, indirect, cumulative, interrelated and/or interdependent effects the Proposed Project/Action may have on federally-listed mammal species.

Direct and Indirect Effects

The Proposed Project/Action would not have any direct or indirect effects that would result in a “take” of federally-listed mammal species during construction and/or operation activities.

Cumulative Effects

The Proposed Project/Action would not have significant cumulative effects on federally-listed mammal species. No other known development is currently planned in the Proposed Project/Action Area that would remove or further degrade habitat in the vicinity of Proposed Project/Action Area. In addition, the operations of the Proposed Project/Action would not have any long-term effects to federally-listed mammal species after construction is completed.

Interdependent and Interrelated Effects

The Proposed Project/Action is considered to be an action that has independent utility apart from other Projects in the City of Fairfield and Solano County and would not have any additional adverse interrelated effects on federally-listed mammal species or its supporting habitat.

Birds

This section describes the potential direct, indirect, cumulative, interrelated and/or interdependent effects the Proposed Action may have on federally-listed bird species.

Direct and Indirect Effects

The Proposed Project/Action would be constructed entirely within the District's existing wastewater treatment plant. The Proposed Project/Action would occur in a highly disturbed area and would not 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 CDFW and USFWS.

A review of the CDFW's CNDDDB and USFWS' Species List and indicates that there is not suitable habitat for special status plant species. However, there are numerous mature trees within and adjacent to the proposed air header and ductbank construction activities. Mature trees can serve as perching or nesting sites for migratory birds, including raptors, and their removal can adversely affect breeding behavior. These species may occur within the area, which are protected under the U.S. Fish and Wildlife Service, the California Fish and Wildlife Code and/or the Federal Migratory Bird Treaty Act.

In addition, numerous San Pablo Song and/or Cliff Swallow nests were observed within the Proposed Project/Action Area. All swallows are included under the Migratory Bird Treaty Act of 1918 as migratory insectivorous birds and as such are protected by state and federal regulations. It is illegal for any person to take, possess, transport, sell, or purchase them or their parts, such as feathers, nests, or eggs, without a permit. As a result, certain activities affecting swallows are subject to legal restrictions. In California, old nests or nests under construction between September 1 and January 31 may be washed down with water or knocked down with a pole. Swallows are strongly attracted to old nests or to the remnants of deteriorated nests, so all traces of mud should be removed. During nest building, nest removal will require many days because cliff swallows persistently rebuild nests for most of the breeding season. They usually return the following year and the whole process must be repeated.

As a result, any potential impacts to special status birds would be minimized to less-than-significant levels with the incorporation of the following mitigation measures and procedures:

- **Conduct Breeding Surveys.** For construction activities that occur between February 1 and August 31, preconstruction breeding bird surveys shall be conducted by a qualified biologist prior to and within 10 days of any initial ground-disturbance activities. Surveys shall be conducted within all suitable nesting habitat within 250-feet of the activity. All active, non-status passerine nests identified at that time should be protected by a 50-foot radius minimum exclusion zone. Active raptor, swallow, or special-status species nests should be protected by a buffer with a minimum radius of 200-feet. CDFW and USFWS recommend that a minimum 500-foot exclusion buffer be established around active nests. The following considerations apply to this mitigation measure:
 - Survey results are valid for 14 days from the survey date. Should ground disturbance commence later than 14 days from the survey date, surveys should be repeated. If no breeding birds are encountered, then work may proceed as planned.
 - The non-breeding season is defined as September 1 to January 31. During this period, breeding is not occurring and surveys are not required. However, if nesting birds are encountered during work activities in the non-breeding season, disturbance activities within a minimum of 50-feet of the nest should be postponed until the nest is abandoned or young birds have fledged.

- **Conduct Nesting Surveys.** For any construction activities initiated between March 15 and September 1, surveys for nesting swallow and/or raptors are required within 250-feet of areas of disturbance. If an active nest is found, a qualified biologist shall monitor the nest during construction activities within 250-feet of the nest to determine whether project construction may result in abandonment. The monitor shall continue monitoring the nest until construction within 250-feet of the nest is completed, or until all chicks have completely fledged. If the monitor determines that construction may result in abandonment of the nest, all construction activities within 250-feet should be halted until the nest is abandoned or all young have fledged.

The implementation of the above precautionary measures would further reduce any potential impacts to any special-status bird species associated with the Proposed Action to a further level of less-than-significant.

Cumulative Effects

The Proposed Project/Action would not have significant cumulative effects on federally-listed bird species or its supporting habitat. No other known development is currently planned in the Proposed Project/Action Area that would remove or further degrade habitat in the vicinity of Proposed Project/Action Area. In addition, the operations of the Proposed Project/Action would not have any long-term effects to habitat quality in the region after construction is completed.

Interdependent and Interrelated Effects

The Proposed Project/Action is considered to be an action that has independent utility apart from other Projects in the City of Fairfield and Solano County and would not have any additional adverse interrelated effects on this species or its supporting habitat.

Reptiles

This section describes the potential direct or indirect, indirect, cumulative, interrelated and/or interdependent effects the Proposed Project/Action may have on federally-listed reptile species.

Direct and Indirect Effects

The Proposed Project/Action would not have any direct or indirect actions that would result in a “take” of federally-listed reptile species during construction and/or operation activities.

Cumulative Effects

The Proposed Project/Action would not have significant cumulative effects on these federally-listed reptile species or supporting habitat. No other known development is currently planned in the Proposed Project/Action Area that would remove or further degrade habitat in the vicinity of Proposed Project/Action Area. In addition, the operations of the Proposed Project/Action would not have any long-term effects to federally-listed reptile species in the region after construction is completed.

Interdependent and Interrelated Effects

The Proposed Project/Action is considered to be an action that has independent utility apart from other Projects in the City of Fairfield and Solano County and would not have any additional adverse interrelated effects on these species or supporting habitat.

Amphibians

This section describes the potential direct or indirect, indirect, cumulative, interrelated and/or interdependent effects the Proposed Project/Action may have on federally-listed amphibian species.

Direct and Indirect Effects

The Proposed Project/Action would not have any direct or indirect actions that would result in a “take” of federally-listed amphibian species during construction and/or operation activities.

Cumulative Effects

The Proposed Action would not have significant cumulative effects on these federally-listed amphibian species or supporting habitat. No other known development is currently planned in the Proposed Project/Action Area that would remove or further degrade habitat in the vicinity of Proposed Project/Action Area. In addition, the operations of the Proposed Project/Action would not have any long-term effects to federally-listed amphibian species in the region after construction is completed.

Interdependent and Interrelated Effects

The Proposed Project/Action is considered to be an action that has independent utility apart from other Projects in the City of Fairfield and Solano County and would not have any additional adverse interrelated effects on these federally-listed amphibian species or supporting habitat.

Fish

This section describes the potential direct or indirect, indirect, cumulative, interrelated and/or interdependent effects the Proposed Project/Action may have on federally-listed fish species.

Direct and Indirect Effects

The Proposed Project/Action would not have any direct or indirect actions that would result in a “take” of federally-listed fish species during construction and/or operation activities.

Cumulative Effects

The Proposed Project/Action would not have significant cumulative effects on these federally-listed fish species or supporting habitat. No other known development is currently planned in the Proposed Project/Action Area that would remove or further degrade habitat in the vicinity of Proposed Project/Action Area. In addition, the operations of the Proposed Project/Action would not have any long-term effects to federally-listed fish species in the region after construction is completed.

Interdependent and Interrelated Effects

The Proposed Project/Action is considered to be an action that has independent utility apart from other Projects in the City of Fairfield and Solano County and would not have any additional adverse interrelated effects on these federally-listed fish species or supporting habitat.

Crustaceans

This section describes the potential direct or indirect, indirect, cumulative, interrelated and/or interdependent effects the Proposed Action may have on federally-listed crustacean species.

Direct and Indirect Effects

The Proposed Project/Action would not have any direct or indirect actions that would result in a “take” of federally-listed crustacean species during construction and/or operation activities.

Cumulative Effects

The Proposed Project/Action would not have significant cumulative effects on these species or supporting habitat. No other known development is currently planned in the Proposed Project/Action Area that would remove or further degrade habitat in the vicinity of Proposed Project/Action Area. In addition, the operations of the Proposed Project/Action would not have any long-term effects to federally-listed crustaceans in the region after construction is completed.

Interdependent and Interrelated Effects

The Proposed Project/Action is considered to be an action that has independent utility apart from other Projects in the City of Fairfield and Solano County and would not have any additional adverse interrelated effects on these federally-listed crustacean species or supporting habitat.

Insects

This section describes the potential direct or indirect, indirect, cumulative, interrelated and/or interdependent effects the Proposed Action may have on federally-listed insect species.

Direct and Indirect Effects

The Proposed Project/Action would not have any direct or indirect actions that would result in a “take” of federally-listed insect species during construction and/or operation activities.

Cumulative Effects

The Proposed Project/Action would not have significant cumulative effects on these federally-listed insect species or supporting habitat. No other known development is currently planned in the Proposed Project/Action Area that would remove or further degrade habitat in the vicinity of Proposed Project/Action Area. In addition, the operations of the Proposed Action would not have any long-term effects to federally-listed insects in the region after construction is completed.

Interdependent and Interrelated Effects

The Proposed Project/Action is considered to be an action that has independent utility apart from other Projects in the City of Fairfield and Solano County and would not have any additional adverse interrelated effects on these federally-listed insect species or supporting habitat.

4.3 Waters of the United States, Including Wetlands

The following is a summary of the potential to affect water of the United States, including wetlands.

Seasonal Wetland/Vernal pools

There are no known seasonal wetlands and/or vernal pools in the Proposed Project/Action Area. As a result, there are no seasonal wetlands and/or vernal pools that would be affected by the Proposed Project/Action.

Other Waters of the U.S.

There are no known “Other Waters of the U.S.” in the Proposed Project/Action Area. As a result, there are no “Other Waters of the U.S.” that would be affected by the Proposed Project/Action.

Direct and Indirect Effects

The Proposed Project/Action would not have an adverse effect on local creek/drainage crossings that may meet the USACE criteria for Waters of the U.S. and any fill or degradation to these channels could significantly impact water quality or habitat for protected species. Specifically, any activity, which results in the deposit of dredge or fill material within the Ordinary High Water mark of Waters of the U.S. typically requires a permit from the USACE. In addition, the bed and banks of the creeks and drainage channels could also fall under the regulatory authority of the CDFW.

Excavation, grading, and other general construction activities associated with the Proposed Project/Action could expose and disturb soils, resulting in potential increases in erosion and siltation in the Project area. Construction during the rainy season could result in increases in erosion, siltation, and water quality issues. Generally, excavation, grading, paving, and other construction activities could expose disturbed and loosened soils to erosion by wind and runoff. Construction activities could therefore result in increased erosion and siltation, including nutrient loading and increasing the total suspended solids concentration. Erosion and siltation from construction have the potential to impact the creeks and drainage crossings, therefore posing a potentially significant impact to wetlands and “Other Waters of the U.S.” However, the Proposed Project/Action will not cross any creeks or drainages and is not in an area where there are wetlands or “Other Water of the U.S.”. As a result, the Proposed Project/Action would not have any direct or indirect effects on wetlands or “Other Waters of the U.S.”

Cumulative Effects

The Proposed Project/Action will not have any cumulative effects on riparian habitat and/or jurisdictional wetlands. No other known development is currently planned in the Proposed Project/Action Area that would remove or further degrade riparian habitat and/or jurisdictional wetlands within the vicinity of Proposed Project/Action Area. In addition, the construction and/or

operation of the Proposed Project/Action would not have any effects to riparian habitat and/or jurisdictional wetlands in the region.

Interdependent and Interrelated Effects

The Proposed Project/Action is considered to be an action that has independent utility apart from other Projects in the City of Fairfield and in Solano County and would not have any adverse interdependent and/or interrelated effects on riparian habitat and/or jurisdictional wetlands.

Section 5 Determination of Effects

This section provides a summary and makes a determination as to the potential for the Proposed Project/Action to affect the federally listed species identified in Section 1.

5.1 No Effect

Through the course of this study and analysis, it is our determination that the Proposed Project/Action will not affect the following species:

Plant Species

- | | |
|---|-------------------------|
| • <i>Cirsium hydrophilum</i> (E) | <i>Suisun thistle</i> |
| • <i>Cordylanthus mollis</i> ssp. <i>Mollis</i> (E) | Soft bird's-beak |
| • <i>Holocarpha macradenia</i> (T) | Santa Cruz tarplant |
| • <i>Lasthenia conjugens</i> (E) | Contra Costa goldfields |

Mammals

- | | |
|--|--------------------------|
| • <i>Reithrodontomys raviventris</i> (E) | Salt-marsh Harvest Mouse |
|--|--------------------------|

Birds

- | | |
|--|-------------------------|
| • <i>Rallus longirostris obsoletus</i> (E) | California Clapper Rail |
| • <i>Sternula antillarum</i> (E) | California least tern |

Reptiles

- | | |
|-------------------------------|--------------------|
| • <i>Thamnophis gigas</i> (E) | Giant garter snake |
|-------------------------------|--------------------|

Amphibians

- | | |
|---|-----------------------------|
| • <i>Ambystma californiense</i> (T) (X) | California tiger salamander |
| • <i>Rana aurora draytonii</i> (T) (X) | California Red-legged frog |

Fish

- | | |
|---|-------------------------------------|
| • <i>Hypomesus transpacificus</i> (T) (X) | Delta smelt |
| • <i>Oncorhynchus mykiss</i> (T) (X) | Steelhead, Central CA Coast /Valley |

Crustaceans

- | | |
|--|------------------------------|
| • <i>Branchinecta conservation</i> (E) | Conservancy fairy shrimp |
| • <i>Branchinecta lynchi</i> (T)(X) | Vernal pool fairy shrimp |
| • <i>Syncaris pacifica</i> | California freshwater shrimp |

Insects

- | | |
|--|-----------------------------------|
| • <i>Callophrys mossii bayensis</i> (E) | San Bruno Elfin butterfly |
| • <i>Desmocerus californicus dimorphus</i> (T) | Valley elderberry longhorn beetle |
| • <i>Elaphrus viridis</i> (T) | Delta Green Ground beetle |
| • <i>Speyeria callippe callippe</i> (E) | Callippe silverspot butterfly |

Section 6 Bibliography

This section provides a listing of the references and resources used in this report.

- California Natural Diversity Database. 2016. <http://www.dfg.ca.gov/biogeodata/cnddb>.
- U. S. Fish and Wildlife Service species list database and Wetland Tracker. 2016. <http://www.fws.gov/>

Attachment A

Species List for Fairfield-Suisun Sewer District's Blower Replacement Project

Species List From USFWS



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office

FEDERAL BUILDING, 2800 COTTAGE WAY, ROOM W-2605

SACRAMENTO, CA 95825

PHONE: (916)414-6600 FAX: (916)414-6713



Consultation Code: 08ESMF00-2016-SLI-1629

June 08, 2016

Event Code: 08ESMF00-2016-E-03544

Project Name: Blower Replacement Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2)

of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment



United States Department of Interior
Fish and Wildlife Service

Project name: Blower Replacement Project

Official Species List

Provided by:

Sacramento Fish and Wildlife Office
FEDERAL BUILDING
2800 COTTAGE WAY, ROOM W-2605
SACRAMENTO, CA 95825
(916) 414-6600

Consultation Code: 08ESMF00-2016-SLI-1629

Event Code: 08ESMF00-2016-E-03544

Project Type: WASTEWATER FACILITY

Project Name: Blower Replacement Project

Project Description: 1010 Chadbourne Road
Fairfield, CA

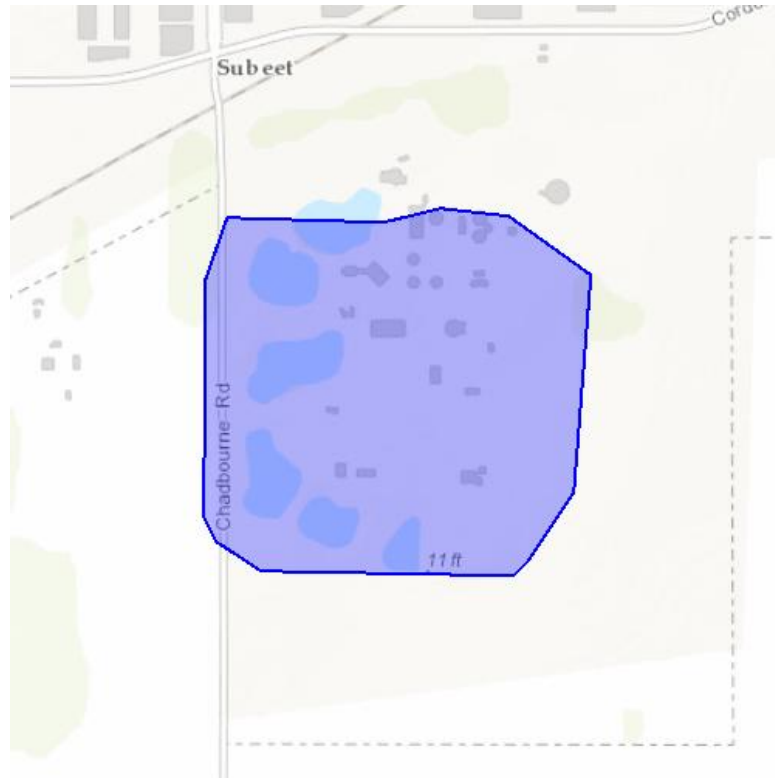
Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior
Fish and Wildlife Service

Project name: Blower Replacement Project

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-122.07651615142822 38.225235239076824, -122.07449913024902 38.22408896672959, -122.07492828369139 38.2198745748905, -122.07604408264159 38.21852591794214, -122.07638740539551 38.218256183552676, -122.08265304565428 38.21835733406591, -122.08376884460449 38.218930517651465, -122.08406925201415 38.21940254780214, -122.08402633666991 38.223987824184746, -122.08346843719481 38.22520152544208, -122.0796060562134 38.225100384444055, -122.0781898498535 38.22537009345963, -122.07651615142822 38.225235239076824)))

Project Counties: Solano, CA



United States Department of Interior
Fish and Wildlife Service

Project name: Blower Replacement Project

Endangered Species Act Species List

There are a total of 19 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Amphibians	Status	Has Critical Habitat	Condition(s)
California red-legged frog (<i>Rana draytonii</i>) Population: Entire	Threatened	Final designated	
California tiger Salamander (<i>Ambystoma californiense</i>) Population: U.S.A. (Central CA DPS)	Threatened	Final designated	
Birds			
California Clapper rail (<i>Rallus longirostris obsoletus</i>) Population: Entire	Endangered		
California Least tern (<i>Sterna antillarum browni</i>)	Endangered		
Crustaceans			
California Freshwater shrimp (<i>Syncaris pacifica</i>) Population: Entire	Endangered		
Conservancy fairy shrimp (<i>Branchinecta conservatio</i>)	Endangered	Final designated	



United States Department of Interior
Fish and Wildlife Service

Project name: Blower Replacement Project

Population: Entire			
Vernal Pool fairy shrimp (<i>Branchinecta lynchi</i>) Population: Entire	Threatened	Final designated	
Fishes			
Delta smelt (<i>Hypomesus transpacificus</i>) Population: Entire	Threatened	Final designated	
steelhead (<i>Oncorhynchus (=salmo) mykiss</i>) Population: Northern California DPS	Threatened	Final designated	
Flowering Plants			
Contra Costa goldfields (<i>Lasthenia conjugens</i>)	Endangered	Final designated	
Santa Cruz tarplant (<i>Holocarpha macradenia</i>)	Threatened	Final designated	
Soft bird's-beak (<i>Cordylanthus mollis ssp. mollis</i>)	Endangered	Final designated	
Suisun thistle (<i>Cirsium hydrophilum var. hydrophilum</i>)	Endangered	Final designated	
Insects			
Callippe Silverspot butterfly (<i>Speyeria callippe callippe</i>) Population: Entire	Endangered		
Delta Green Ground beetle (<i>Elaphrus viridis</i>) Population: Entire	Threatened	Final designated	



United States Department of Interior
Fish and Wildlife Service

Project name: Blower Replacement Project

San Bruno Elfin butterfly (<i>Callophrys mossii bayensis</i>) Population: Entire	Endangered		
Valley Elderberry Longhorn beetle (<i>Desmocerus californicus dimorphus</i>) Population: Entire	Threatened	Final designated	
Mammals			
Salt Marsh Harvest mouse (<i>Reithrodontomys raviventris</i>) Population: wherever found	Endangered		
Reptiles			
Giant Garter snake (<i>Thamnophis gigas</i>) Population: Entire	Threatened		



United States Department of Interior
Fish and Wildlife Service

Project name: Blower Replacement Project

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Species List From CDFW



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Query Criteria: Quad IS (Fairfield South (3812221))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Aquila chrysaetos</i> golden eagle	ABNKC22010	None	None	G5	S3	FP
<i>Asio flammeus</i> short-eared owl	ABNSB13040	None	None	G5	S3	SSC
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	PDFAB0F8R1	None	None	G2T2	S2	1B.2
<i>Athene cunicularia</i> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<i>Atriplex persistens</i> vernal pool smallscale	PDCHE042P0	None	None	G2	S2	1B.2
<i>Bombus occidentalis</i> western bumble bee	IIHYM24250	None	None	G2G3	S1	
<i>Buteo swainsoni</i> Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
<i>Centromadia parryi</i> ssp. <i>parryi</i> pappose tarplant	PDAST4R0P2	None	None	G3T2	S2	1B.2
<i>Chloropyron molle</i> ssp. <i>molle</i> soft salty bird's-beak	PDSCR0J0D2	Endangered	Rare	G2T1	S1	1B.2
<i>Cicuta maculata</i> var. <i>bolanderi</i> Bolander's water-hemlock	PDAP10M051	None	None	G5T4	S2	2B.1
<i>Circus cyaneus</i> northern harrier	ABNKC11010	None	None	G5	S3	SSC
<i>Cirsium hydrophilum</i> var. <i>hydrophilum</i> Suisun thistle	PDAST2E1G1	Endangered	None	G2T1	S1	1B.1
<i>Coastal Brackish Marsh</i> Coastal Brackish Marsh	CTT52200CA	None	None	G2	S2.1	
<i>Danaus plexippus</i> pop. 1 monarch - California overwintering population	IILEPP2012	None	None	G4T2T3	S2S3	
<i>Desmocerus californicus dimorphus</i> valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
<i>Elanus leucurus</i> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
<i>Emys marmorata</i> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<i>Eriogonum truncatum</i> Mt. Diablo buckwheat	PDPGN085Z0	None	None	G2	S2	1B.1
<i>Extriplex joaquinana</i> San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
<i>Geothlypis trichas sinuosa</i> saltmarsh common yellowthroat	ABPBX1201A	None	None	G5T3	S3	SSC



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Lasiurus cinereus</i> hoary bat	AMACC05030	None	None	G5	S4	
<i>Lasthenia conjugens</i> Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
<i>Laterallus jamaicensis coturniculus</i> California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i> Delta tule pea	PDFAB250D2	None	None	G5T2	S2	1B.2
<i>Legenere limosa</i> legenere	PDCAM0C010	None	None	G2	S2	1B.1
<i>Lilaeopsis masonii</i> Mason's lilaeopsis	PDAP19030	None	Rare	G2	S2	1B.1
<i>Linderiella occidentalis</i> California linderiella	ICBRA06010	None	None	G2G3	S2S3	
<i>Melospiza melodia maxillaris</i> Suisun song sparrow	ABPBXA301K	None	None	G5T3	S3	SSC
<i>Northern Claypan Vernal Pool</i> Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
<i>Pogonichthys macrolepidotus</i> Sacramento splittail	AFCJB34020	None	None	GNR	S3	SSC
<i>Puccinellia simplex</i> California alkali grass	PMPOA53110	None	None	G3	S2	1B.2
<i>Rallus longirostris obsoletus</i> California clapper rail	ABNME05016	Endangered	Endangered	G5T1	S1	FP
<i>Rana draytonii</i> California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
<i>Reithrodontomys raviventris</i> salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	FP
<i>Sorex ornatus sinuosus</i> Suisun shrew	AMABA01103	None	None	G5T1T2Q	S1S2	SSC
<i>Speyeria callippe callippe</i> callippe silverspot butterfly	IILEPJ6091	Endangered	None	G5T1	S1	
<i>Spirinchus thaleichthys</i> longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	SSC
<i>Symphyotrichum lentum</i> Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2
<i>Trifolium hydrophilum</i> saline clover	PDFAB400R5	None	None	G2	S2	1B.2

Record Count: 39

Appendix D

Section 106 Cultural Resources Investigation Report



Fairfield-Suisun
Sewer District

BLOWER REPLACEMENT

Project (2016)

Section 106 Cultural Resources Investigation Report



September 2016



Section 106 Cultural Resources Investigation Report

Fairfield-Suisun Sewer District
Blower Replacement Project

Prepared by:



SMB Environmental, Inc.

September 2016

Table of Contents

Section 1 - Introduction.....	4
1.1 Project Location and Background.....	4
1.2 Purpose and Need	6
Section 2 - Proposed Action Description.....	7
2.2 Construction Considerations	10
2.3 Area of Potential Effect	11
Section 3 – Environmental Setting.....	12
3.1 Prehistory	12
Windmill Pattern or Early Horizon (3000 to 1000 B.C.)	13
Berkeley Pattern or Middle Horizon (1000 B.C. to A.D. 500).....	13
Augustine Pattern or Late Horizon (A.D. 500 to Historic Period)	14
3.2 Native American Background	14
3.3 Historic Background	15
Spanish and Mexican California	15
California Gold Rush	16
Local History	16
3.4 Local Setting	17
Section 4 - Regulatory Framework	20
4.1 Federal.....	20
National Historic Preservation Act.....	20
National Environmental Policy Act	20
4.2 State	20
California Register of Historical Resources	21
California Environmental Quality Act	21
4.3 Local	21
City of Fairfield General Plan	21
Solano County General Plan	22
Section 5 - Investigation Methodology and Results.....	24
5.1 Northwest Information Center (NWIC) Record Search	24

5.2 Survey Methods 25

5.3 Native American Heritage Commission Record Search and Outreach..... 25

5.4 Conclusions and Recommendations 25

Section 6 - Bibliography 27

List of Figures

Figure 1: Fairfield-Suisun Sewer District Map 5

Figure 2: Proposed Site and Key Plans..... 8

Figure 3: Major Outdoor Improvements and Activities..... 9

Figure 4: McCreary's Residence Near the Proposed Project Area.....18

List of Tables

Table 1: Typical Construction Equipment for Proposed Project/Action Facilities 10

Attachment A Native American Correspondence

Section 1 - Introduction

This document is a cultural resources inventory study on the Fairfield-Suisun Sewer District's (District) proposed Blower Replacement Project (Proposed Action). This report presents the project location and background, Proposed Description/Action, area of potential effect, environmental setting, regulatory framework, and the investigation methods and results of the cultural resources investigation for the Proposed Project/Action.

The term "cultural resources" encompasses historic, archaeological, and paleontological resources, and burial sites. Below is a brief summary of each component:

- **Historic Resources:** Historic resources are associated with the recent past. In California, historic resources are typically associated with the Spanish, Mexican, and American periods in the State's history and are generally less than 200 years old.
- **Archaeological Resources:** Archaeology is the study of prehistoric human activities and cultures. Archaeological resources are generally associated with indigenous cultures.
- **Paleontological Resources:** Paleontology is the study of plant and animal fossils.
- **Burial Sites:** Burial sites are formal or informal locations where human remains, usually associated with indigenous cultures, are interred.

This study was conducted in order to identify cultural resources that include prehistoric and historic archeological resources, buildings, structures, and sites of religious or cultural significance for Native Americans within the proposed project area. Because the Proposed Project/Action may involve the use of State Revolving Loan Program and/or federal funds, this investigation was conducted in compliance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 Code of Federal Register [CFR] Part 800).

1.1 Project Location and Background

The District is a special district, a legally constituted governmental entity established to fulfill a specific function – in the District's case, wastewater and stormwater management in a multi-jurisdictional environment. An act of the California Legislature in 1951 created the District to perform wastewater collection and treatment, and water recycling services for all property within the boundaries of Fairfield, Suisun City, and Travis Air Force Base. The District also operates a drainage maintenance utility that performs specified stormwater management services in conjunction with the cities in its service area. Establishment of the District has enabled well-coordinated management of local wastewater and stormwater.

The District serves more than 135,000 residential, commercial and industrial customers in central Solano County, about 40 miles northeast of San Francisco. Households, retail businesses, major food and beverage producers, light industries, manufactures, and vital military operations depend upon the District's service. Today, they serve a population more than 20 times that size. They have been able to

accommodate the growth and evolving needs of the region by remaining flexible, dedicated to customer service and mindful of the trust placed in them to protect public health and the natural environment.

The District's current treatment facilities, which replaced two older plants in 1977, underwent major renovations and expansions in 1982, 1987, 1989, 2007, and 2010 to keep pace with population growth, economic expansion of our region and technological advancements.

The District's treatment plant occupies about 150 acres¹ and is located in the southern portion of the City of Fairfield. It draws from a collection system that consists of 12 pump stations and a 70-mile network of sewers. The sewer conduits range from 12 inches to 48 inches in diameter. The replacement cost for the system is estimated at \$635 million—tangible evidence of the District's significant investment in infrastructure.

The Fairfield and Suisun City stormwater drainage systems serve an area of 41 square miles. The drainage system encompasses seven pump stations to maintain flow of stormwater to the natural creek system and the marsh.

The District safeguards public health and helps protect environmentally sensitive Suisun

Marsh, which is the nation's largest brackish water marsh as well as the largest wetland on the Pacific Coast. This 116,000-acre region not only supports abundant plant life but also serves as a stopover for up to 1.5 million migratory birds traversing the Pacific Flyway each year. The District is proud to play a part in the preservation of these marshlands.



Figure 1

Fairfield-Suisun Sewer District

¹ The District also owns an additional 380 acres mostly to the east and the north of the fenced wastewater treatment plant boundaries.

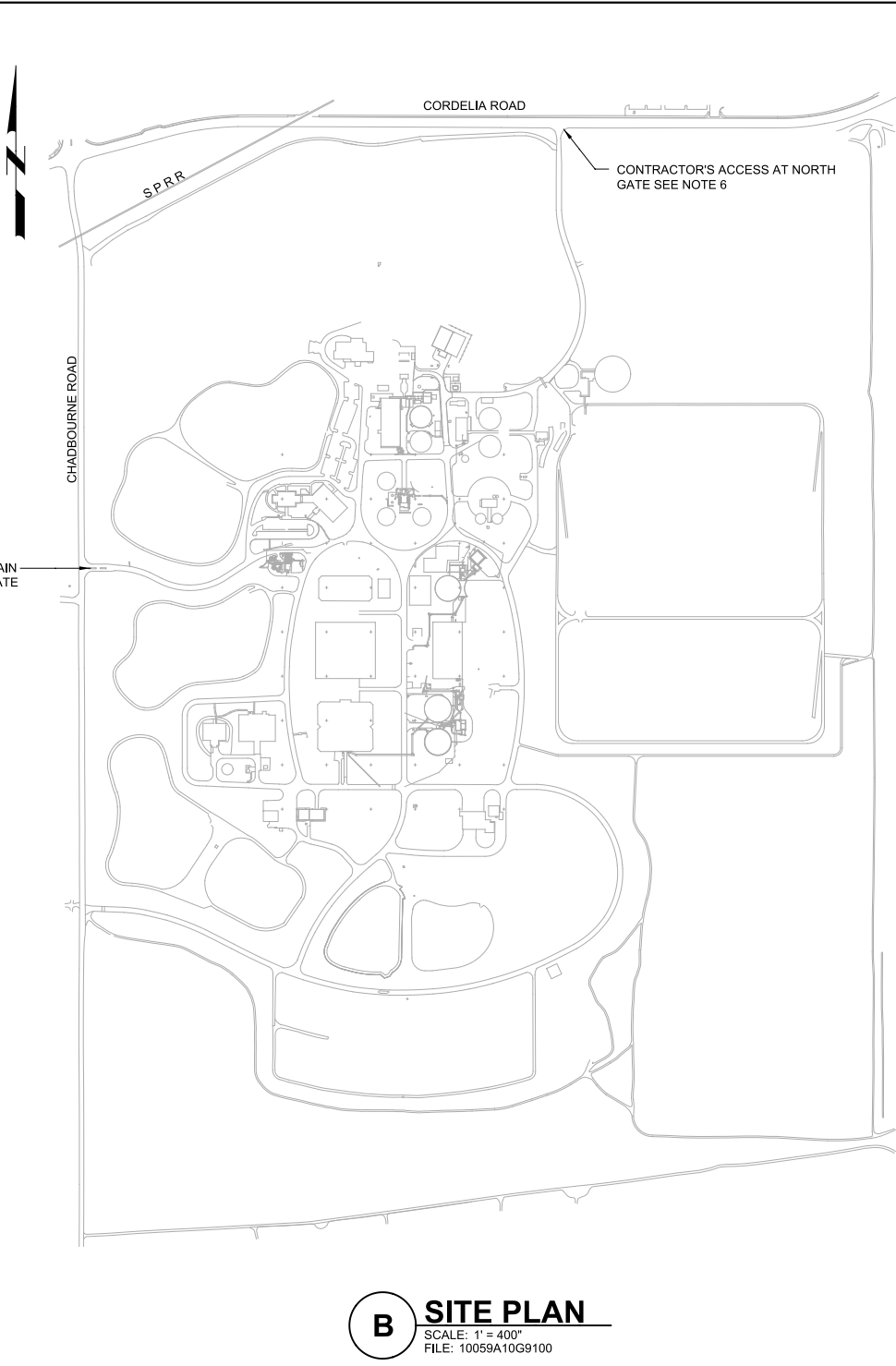
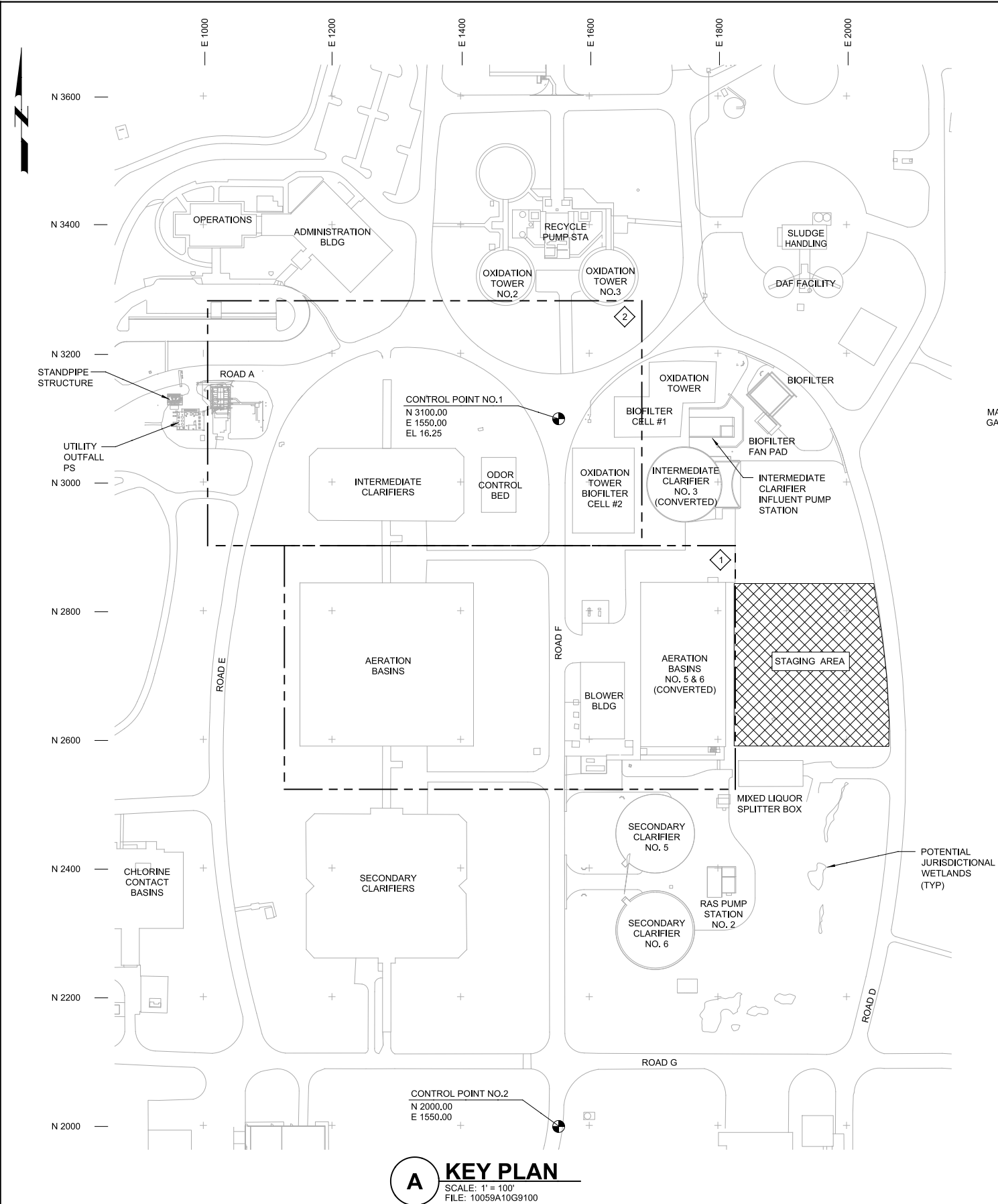
1.2 Purpose and Need

The primary purpose of the Proposed Project/Action is to enhance the reliability and efficiency of the secondary treatment process aeration system. There are several issues with the existing aeration system including leaking air header piping, obsolete and inefficient blowers, lack of properly sized redundant equipment, and electrical gear that has exceeded its useful design life. The secondary treatment process is one of the most critical processes in the plant and any prolonged disruption to the aeration system could severely impact the District's ability to meet its discharge requirements. For these reasons, the District has decided to undertake this Proposed Project/Action.

Section 2 - Proposed Action Description

The primary purpose of the Proposed Project/Action is to enhance the reliability and efficiency of the secondary treatment process aeration system. There are several issues with the existing aeration system including leaking air header piping, obsolete and inefficient blowers, lack of properly sized redundant equipment, and electrical gear that has exceeded its useful design life. The secondary treatment process is one of the most critical processes in the plant and any prolonged disruption to the aeration system could severely impact the District's ability to meet its discharge requirements. For these reasons, the District has decided to undertake this project. As shown on Figures 2 and 3 - and more fully described in the District's *April 2016 Blower Replacement Project Preliminary Design Report*, the project will consist of the following elements:

- **New Aeration Blower Equipment** - Existing obsolete and oversized blower equipment within the existing Blower Building will be demolished and replaced with new high efficiency blowers. Blowers will be designed to meet current process demand conditions of 22,500 standard cubic feet per minute (scfm) as determined by the secondary treatment process evaluation conducted during preliminary design. Total blower duty horsepower will be approximately 1,200 horsepower (Hp) with one redundant unit provided.
- **Electrical System and Controls** - The existing obsolete electrical gear including the 480-volt motor control center 'MCC-R1', 480-volt switchgear 'EDR', 4160-volt transformers and switchgear, and the 480-volt standby generator 'ME-48', will be demolished and replaced. Replacement electrical and controls major equipment and components will consist of the following elements:
 - Two new outdoor 2,500kVA, 12kV-480V substations (for electrical supply to new blower equipment).
 - Approximately 500-linear feet of new 12-kV ductbank (approximately 30 inches wide by 24 inches high) between the existing 12-kV switchgear and Blower Building will be provided for routing of new dedicated 12-kV conductors to serve the blowers. The buried ductbank facility will be routed in parallel alignment to an existing ductbank within previously improved areas and will not cross any creeks or drainages. For construction, the trench is estimated to be approximately 2- to 4-feet wide, 6-feet deep, and 500-feet long. However, the District may decide to use horizontal directional drilling as an alternative method for installing the four 5-inch conduits. Once constructed, the alignment corridor will be returned to pre-construction conditions.
 - A new 480-volt "three-bus" power switchgear line-up for supplying power to the new blower equipment and connection to the new standby generator.
 - A new 2,500kVA, 480-volt diesel engine-driven standby generator for standby power supply to the new blower equipment and the new 480-volt switchgear equipment. The generator will either be installed inside the existing Blower Building or adjacent to it on a separate slab on grade concrete foundation with an outdoor prefabricated sound enclosure. The



AREA - DRAWING SCHEDULE			
AREA PLAN	YARD PIPING AND UTILITY DRAWING NO.	PAVING AND GRADING DRAWING NO.	ELECTRICAL SITE PLAN DRAWING NO.
1	C-4	C-8	E-5
2	N/A	N/A	E-6

LEGEND:

 CONTRACTOR'S STAGING AREA

- GENERAL NOTES:
1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE STARTING WORK AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
 2. UNLESS DETAILED, SPECIFIED, OR OTHERWISE INDICATED ON THE DRAWINGS, CONSTRUCTION SHALL BE AS INDICATED IN THE APPLICABLE TYPICAL DETAILS AND GENERAL NOTES. TYPICAL DETAILS SHALL APPLY EVEN THOUGH NOT REFERENCED AT SPECIFIC LOCATIONS ON DRAWINGS.
 3. WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF WORK, DETAILS SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.
 4. CONTRACTOR SHALL FIELD VERIFY THE VERTICAL AND HORIZONTAL LOCATIONS OF PIPES AND STRUCTURES PRIOR TO CONSTRUCTION.
 5. CONTRACTOR SHALL FIELD VERIFY PIPE MATERIAL OF EXISTING CONNECTING PIPES PRIOR TO CONSTRUCTION.
 6. CONTRACTOR ACCESS AND DELIVERIES SHALL BE THROUGH NORTH GATE. PLACE TRAFFIC ROUTING SIGNS AT CORNER OF CHADBOURNE AND CORDELIA ROADS AND ALSO AT NORTH ENTRY GATE.
 7. ELECTRICAL POWER SOURCE FOR STAGING AREA TO BE SUPPLIED BY DISTRICT. INTERRUPTION OF POWER MAY OCCUR PERIODICALLY DUE TO MAINTENANCE WORK, CONSTRUCTION RELATED ACTIVITIES OR OTHER UNPLANNED REASONS.
 8. HYDROSEED ALL DISTURBED AREAS PRIOR TO BEGINNING OF EACH WET WEATHER SEASON DURING THE COURSE OF THE PROJECT AND AFTER SUBSTANTIAL COMPLETION.
 9. CONTRACTOR SHALL REPLACE IN KIND OR REPAIR EXISTING ITEMS DAMAGED BY THE CONTRACTOR'S ACTIVITIES INCLUDING BUT NOT LIMITED TO LANDSCAPE IRRIGATION SYSTEM PIPING AND RELATED ELECTRICAL CONDUITS. NOT ALL EXISTING ITEMS ARE SHOWN ON THE DRAWINGS. THE DRAWINGS OF EXISTING ITEMS ARE AVAILABLE FROM THE OWNER ON REQUEST.

- SURVEY NOTES:
1. SURVEY BASE DRAWING BY HAMMOND, JENSEN, WALLEN AND ASSOCIATES, INC. (DEC 12, 1993).
 2. THE BASE DRAWING (EXISTING FEATURES) IS APPROXIMATE AND FOR INFORMATION ONLY. THE CONTRACTOR SHALL VERIFY ALL LAYOUTS PRIOR TO CONSTRUCTION.
 3. THE SURVEY DATA IS BASED ON EXISTING PLANT DATUM. DRAWINGS INCLUDED HEREIN USE PLANT DATUM.
 4. USE HORIZONTAL CONTROL POINTS AND BENCHMARK INDICATED ON PLANS BY . CONTRACTOR SHALL VERIFY CONTROL PRIOR TO BEGINNING WORK.

					DATE MARCH 2016					BLOWER REPLACEMENT PROJECT (2016) PROJECT NO. XXXX		Figure 2	
					DESIGNED BY RGL					SITE AND KEY PLANS			
					DRAWN BY OB								
					CHECKED BY								
					JOB NUMBER 10059A10	DATE		WARNING  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		SHEET	
REV	DATE	BY	DESCRIPTION										
													OF XX SHEETS



Figure 3
Major Outdoor Improvements and Activities

- existing above grade fuel storage tanks serving the existing generator will be replaced with a new 660-gallon fuel tank to supply fuel to the new generator.
 - Replace existing 480-volt motor control center MCC-R1 with a new 480-volt MCC.
 - Upgrade the existing Blower Building PLC equipment hardware with new, Allen-Bradley ControlLogix hardware.
- **Air Header Replacement** - The existing 54-inch diameter buried aeration air headers for the secondary treatment process will be abandoned and replaced due to known air leaks in the piping system. This will involve installation of a new 36-inch diameter above grade coated carbon steel pipe. The new pipe will be installed approximately 15-feet above grade with cast-in drilled hole (CIDH) pier supports spaced at 30-foot max spacing and drilled to approximately 25-foot depth. The existing pipe will be filled with concrete slurry and abandoned in place.

The final pre-design report was completed in April 2016. The project is currently in the final design phase with design completion scheduled for December 2016 and construction in 2017-2018.

2.2 Construction Considerations

Construction of the Proposed Project/Action facilities is expected to begin in the spring/summer of 2017 and will likely continue for 18-months into the fall of 2018. Construction work will typically be done within normal working hours, weekdays between the hours of 7 a.m. and 4 p.m., and possibly on Saturdays between the hours of 7 a.m. and 4 p.m. The Proposed Project/Action would be constructed entirely within the District's existing wastewater treatment plant. During construction, approximately 10-15 people would be working on the Proposed Project/Action. Table 1 provides a list of the typical construction equipment that may be used for the construction of the Proposed Project/Action. As shown in Figure 2 above, a temporary staging area would be used to store materials, construction equipment, job trailer(s), and other materials needed for construction activities. The construction area would be approximately 0.5 acres in size and would be outside of a potential wetland area² to the west. The construction activities would take place within the areas designated in Figure 2 and entirely within the boundaries of the District's wastewater treatment plant site. The District will employ appropriate construction best management practices (BMPs). As a final step of construction activities, the construction site would be cleaned up and restored to previous conditions. Construction trash and debris would be collected and disposed of properly.

Table 1 Typical Construction Equipment for Project/Action Facilities	
Equipment	Use
Backhoe	Excavating trenches for ductbank
Excavator	Excavating trenches for ductbank

² This area has not been confirmed to be an actual wetland and is not on the U.S. Fish and Wildlife list of known wetlands. Regardless, the Proposed Project would not affect this area.

Table 1
Typical Construction Equipment for Project/Action Facilities

Equipment	Use
Cast-in-Drill Hole (CIDH) Drilling Equipment	Installing Air Header supports
Loader	Move and carry construction materials, equipment, and debris
Roller/Compactor	Soil Compaction
Cranes	Off loading equipment, materials and laying ductbank
Semi-trailer trucks	Delivering materials, equipment, and removal of debris
Forklift	Lifting equipment and materials
Pick-up trucks	General use and hauling of minor equipment, tools, and materials
Scissor Lift	Elevated air header piping installation and coatings.
Concrete trucks and pumps	Air header sealment and pad construction
Water Truck	Compaction, erosion, and dust control

Once constructed, the District would resume existing day-to-day operations and maintenance procedures. No new permanent District employees are anticipated to be required for the Proposed Project/Action.

2.3 Area of Potential Effect

The Area of Potential Effect (APE) for the Proposed Project/Action is defined as “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of cultural resources,” as defined above and as shown on Figures 2 and 3. Trenching for installing the ductbank would typically require a width of three feet and a vertical depth of approximately six feet; therefore the vertical APE would be typically six feet.

Section 3 – Environmental Setting

This section presents the environmental setting and impact assessment for cultural resources. Cultural resources are defined as prehistoric and historic sites, structures, and districts, or any other physical evidence associated with human activity considered important to a culture, a subculture, or a community or scientific, traditional, religious, or any other reason. For analysis purposes, cultural resources may be categorized into three groups: archaeological resources, historic resources, and contemporary Native American resources.

Archaeological resources are places where human activity has measurably altered the earth or left deposits of physical remains. Archaeological resources may be either prehistoric (before the introduction of writing in a particular area) or historic (after the introduction of writing). The majority of such places in this region are associated with either Native American or Euro American occupation of the area. The most frequently encountered prehistoric and early historic Native American archaeological sites are village settlements with residential areas and sometimes cemeteries; temporary camps where food and raw materials were collected; smaller, briefly occupied sites where tools were manufactured or repaired; and special-use areas like caves, rock shelters, and sites of rock art. Historic archaeological sites may include foundations or features such as privies, corrals, and trash dumps.

Historic resources are standing structures of historic or aesthetic significance that are generally 50 years of age or older (i.e., anything built in the year 1955 or before). In California, historic resources considered for protection tend to focus on architectural sites dating from the Spanish Period (1529-1822) through the early years of the Depression (1929-1930). Historic resources are often associated with archaeological deposits of the same age.

Contemporary Native American resources, also called ethnographic resources, can include archaeological resources, rock art, and the prominent topographical areas, features, habitats, plants, animals, and minerals that contemporary Native Americans value and consider essential for the preservation of their traditional values.

The following cultural, historical, and ethnographic baseline information is extracted from an overview document prepared by the Northwest Information Center at Sonoma State University, as well as information provided by the City of Fairfield.

3.1 Prehistory

Early archaeological investigations in central California were conducted at sites located in the Sacramento-San Joaquin Delta region in the 1920s and 1930s. The initial archaeological reports typically contained descriptive narratives, with more systematic approaches sponsored by Sacramento Junior College in the 1930s. At the same time, University of California at Berkeley excavated several sites in the lower Sacramento Valley and Delta region that resulted in recognizing archaeological site patterns based on variations of inter-site assemblages. Research during the 1930s identified temporal periods in central California prehistory and provided an initial chronological sequence. In 1939, it was noted that each cultural period led directly to the next and that influences spread from the Delta region to other regions in central California. In the late 1940s and early 1950s, similarities were documented in artifacts between sites in the San Francisco Bay region and the Delta and refined his findings into a cultural model that ultimately became known as the Central California Taxonomic System (CCTS). This system proposed

a uniform, linear sequence of cultural succession. The CCTS system was challenged by work conducted with radiocarbon dating that showed that Early and Middle Horizon sites were not subsequent developments but were at least partially, contemporaneous.

To address some of the flaws in the CCTS system, a revision was introduced that incorporated a system of spatial and cultural integrative units. Cultural, temporal, and spatial units were separated from each other and assigned to six chronological periods: Paleo-Indian (10000 to 6000 B.C.); Lower, Middle and Upper Archaic (6000 B.C. to A.D. 500); and Emergent (Upper and Lower, A.D. 500 to 1800). The suggested temporal ranges are similar to earlier horizons, which are broad cultural units that can be arranged in a temporal sequence. In addition, several patterns, which are a general way of life shared within a specific geographical region, were refined. These patterns include:

- Windmill Pattern or Early Horizon (3000 to 1000 B.C.)
- Berkeley Pattern or Middle Horizon (1000 B.C. to A.D. 500)
- Augustine Pattern or Late Horizon (A.D. 500 to historic period)

Brief descriptions of these temporal ranges and their unique characteristics follow.

Windmill Pattern or Early Horizon (3000 to 1000 B.C.)

Characterized by the Windmill Pattern, the Early Horizon was centered in the Cosumnes district of the Delta and emphasized hunting rather than gathering, as evidenced by the abundance of projectile points in relation to plant processing tools. Additionally, atlatl, dart, and spear technologies typically included stemmed projectile points. The large variety of projectile point types and faunal remains suggests exploitation of numerous types of terrestrial and aquatic species. Burials occurred in cemeteries and intra-village graves. These burials typically were ventrally extended, although some dorsal extensions are known with a westerly orientation and a high number of grave goods. Trade networks focused on acquisition of ornamental and ceremonial objects in finished form rather than on raw material. The presence of artifacts made of exotic materials such as quartz, obsidian, and shell indicates an extensive trade network that may represent the arrival of Utian populations into central California. Also indicative of this period are rectangular *Haliotis* and *Olivella* shell beads, and charmstones that usually were perforated.

Berkeley Pattern or Middle Horizon (1000 B.C. to A.D. 500)

The Middle Horizon is characterized by the Berkeley Pattern, which displays considerable changes from the Early Horizon. This period exhibited a strong milling technology represented by minimally shaped cobble mortars and pestles, although metates and manos were still used. Dart and atlatl technologies during this period were characterized by non-stemmed projectile points made primarily of obsidian. It is suggested that the Berkeley Pattern marked the eastward expansion of Miwok groups from the San Francisco Bay Area. Compared with the Early Horizon, there is a higher proportion of grinding implements, implying an emphasis on plant resources rather than on hunting. Typical burials occurred within the village with flexed positions, variable cardinal orientation, and

some cremations. The practice of spreading ground ochre over the burial was common at this time. Grave goods during this period are generally sparse and typically include only utilitarian items and a few ornamental objects. However, objects such as charmstones, quartz crystals, and bone whistles occasionally were present, which suggest the religious or ceremonial significance of the individual. During this period, larger populations are suggested by the number and depth of sites when compared with the Windmill Pattern. The Berkeley Pattern reflects gradual expansion or assimilation of different populations rather than sudden population replacement and a gradual shift in economic emphasis.

Augustine Pattern or Late Horizon (A.D. 500 to Historic Period)

The Late Horizon is characterized by the Augustine Pattern, which represents a shift in the general subsistence pattern. Changes include the introduction of bow and arrow technology; and most importantly, acorns become the predominant food resource. Trade systems expanded to include raw resources as well as finished products. There are more baked clay artifacts and extensive use of *Haliotis* ornaments of many elaborate shapes and forms. Burial patterns retained the use of flexed burials with variable orientation, but there was a reduction in the use of ochre and widespread evidence of cremation. Judging from the number and types of grave goods associated with the two types of burials, cremation seems to have been reserved for individuals of higher status, whereas other individuals were buried in flexed positions. One researcher suggests that the Augustine Pattern represents expansion of the Wintuan population from the north, which resulted in combining new traits with those established during the Berkeley Pattern.

Central California research has expanded from an emphasis on defining chronological and cultural units to a more comprehensive look at settlement and subsistence systems. This shift is illustrated by the early use of burials to identify mortuary assemblages and more recent research using osteological data to determine the health of prehistoric populations. Although debate continues over a single model or sequence for central California, the general framework consisting of three temporal/cultural units is generally accepted, although the identification of regional and local variation is a major goal of current archaeological research.

3.2 Native American Background

At the time of European contact, the Proposed Project/Action vicinity was occupied by the Hill Patwin tribe of the Patwin Native Americans. The Patwin occupied the southwestern Sacramento Valley from the town of Princeton, north of Colusa, south to San Pablo and Suisun bays, and from the lower hills of the eastern North Coast Ranges to the Sacramento River. Patwin territory extended approximately 40 miles east to west and 90 miles north to south. Based primarily on linguistic variation, the Patwin are the most southern division of the Wintuan population, who are members of the Penutian linguistic stock. Distinction is made between the Hill and River Patwin. Hill Patwin had villages located in valleys along the hills of the Vaca Mountains and Coast Ranges with populations concentrated in the Indian, Bear, Capay, Cortina, Long, and Napa valleys. In general, the River Patwin occupied the west banks of the lower Sacramento River below the Feather River as well as the lower reaches of Cache and Putah creeks

in the Sacramento Valley. The Patwin political organization was centered on the tribelet, which consisted of a primary village with smaller satellite villages governed by a chief.

Tribelets were autonomous and differed from each other with minor cultural variations. The economic and ceremonial activities of each village were administered by a chief whose position was typically passed on patrilineally, although some chiefs were chosen by village elders. The chief administered subsistence ventures, such as hunting and gathering expeditions, and served as the primary resource distributor.

The Hill Patwin subsistence base varied seasonally and included gathering seeds and plant resources on the plains, netting migratory waterfowl in the tule marshes, and netting salmon and other fish in the rivers and streams. Acorns were a staple in the Patwin diet and were obtained from communally owned hill and valley oak groves. The Patwin typically stored the acorns in granaries as insurance against famine in poor harvest years. Ethnographic reports indicate the Patwin obtained large game such as deer, tule elk, and antelope, by using nets or shooting with bows and arrows.

The Hill Patwin trade system included various resources that were exchanged with Wappo, Nomlake, and Southeastern Pomo, and the River Patwin. The River Patwin obtained obsidian from sources to the west and east. Initially, finished shell beads were obtained from coastal tribes, but later, the River Patwin traded for whole shells from the Pacific Coast and produced the beads themselves. Relationships with nearby tribes as well as other Patwin tribelets were not always friendly. Relations were strained especially with Napa Valley groups and that the provocations primarily consisted of poaching, with the subsequent retaliations consisting of organized battles on individuals or groups or surprise attacks on villages.

Patwin mortuary practices included burials in cemeteries located at one end of the village, possessions of the deceased being buried along with them, and at some locations, property was burned near the grave. Typically, only people who died or were killed away from the village were cremated. Johnson notes that according to a Hill Patwin informant “the River people [Patwin] set a corpse upright, then pushed the head down, broke the back, wrapped the body in a skin, and put it in the grave.” In addition, long burial ropes constructed of hemp were wrapped around the deceased and temporary containers made of tule reeds were utilized for transport.

3.3 Historic Background

The history of the Central Valley and western Sierra Nevada foothills can be divided into several periods of influence; pertinent historic periods are briefly summarized below.

Spanish and Mexican California

Spanish exploration into the Central Valley region of California dates back to the late 1700s and Spanish mission records indicate that by 1800 Patwin inhabitants were being taken to Mission Dolores and that Mission Sonoma, built in 1823, was baptizing Patwin tribal members until secularization of the missions in 1833. Many Native Americans were not willing converts and there are numerous accounts of neophytes fleeing the missions. When the Spanish tried to return them to the missions a series of “Indian Wars” broke out. During this period, Native American populations were declining rapidly due to

an influx of Euro-American diseases. In 1832, a party of trappers from the Hudson's Bay Company, led by John Work, traveled down the Sacramento River unintentionally spreading a malaria epidemic to Native Californians. Four years later, a smallpox epidemic decimated local populations and it is estimated that up to 75 percent of the Patwin died.

The Mexican Period, 1821 to 1848, was marked by secularization of the missions and division of their lands among the Californios as land grants termed ranchos. The large rancho lands were often worked by Native Americans who were used as forced labor. During the 1830s and 1840s, Patwin territory was usurped by both Mexican and Euro-Americans who secured title to the land through the lenient policies of the Mexican government.

California Gold Rush

In 1848, James W. Marshall discovered gold at Coloma in modern-day El Dorado County that started a gold rush into the region that forever altered the course of California's history. The arrival of thousands of gold seekers in the territory contributed to the exploration and settlement of the entire state. By late 1848, approximately four out of five men in California were gold miners.

The gold rush originated along the reaches of the American River with Hangtown, present day Placerville, becoming the closest town offering mining supplies and other necessities for the miners in the tiny town of Coloma. Subsequently, gold was found in the tributaries to the San Joaquin, which flowed north to join the Sacramento River in the great delta east of San Francisco Bay. The Mokelumne River formed the boundary between two areas, the upper gold fields known as the Northern Mines and those below the Mokelumne known as the Southern Mines.

By 1864, California's gold rush had essentially ended. The rich surface and river placers were largely exhausted, and the miners either returned to their homelands or stayed to start new lives in California. With the decline of gold mining, agriculture and ranching came to the forefront in the State's economy. California's natural resources and moderate climate proved well suited for cultivation of a variety of fruits, nuts, vegetables, and grains.

Local History

The project is within Solano County, which is one of California's original counties and retains its original boundaries. The first county seat was in Benicia but moved to Fairfield in 1858. Early settlers in the County cultivated fruits and vegetables for local consumption and grains were grown on a larger scale for export. Dryland farm crops such as wheat and oats used for cattle fodder proved profitable in the area despite limited irrigation. Initially, all products were transported via the waterways, but with the completion of California Pacific Railroad, goods were transported by rail.

Fruit and nut crops were particularly successful in the project vicinity and by 1910, Solano-Yolo Land and Water Company proposed dam and irrigation systems to support these crops. However, by 1930, government standards resulted in sales and abandonment of orchards with subsequent fruit workers' strikes and riots resulting in the 1934–1935 closure of the peach and cherry shipping industry. The fruit and nut industry slowly turned around and was aided by the formation of the Solano Irrigation District in

1948. Solano County continued to grow over the years with the addition of Travis Air Force Base, new industrial parks, and a resurgence of fruit processing and packing warehouses.

3.4 Local Setting

The project area lies between 10 and 20 feet in elevation at the southern edge of a flat plain, about $\frac{1}{4}$ mile north and $\frac{1}{2}$ mile west of the marshlands around Suisun Slough, and five miles north of Suisun Bay. The superficial geology of the project area is Holocene alluvium (Graymer 2006, USGS 2015).

Before contact with the Spanish, the area was the territory of the Suisun, a group who spoke the Patwin language (Golla 2007). Patwin-speaking peoples lived along the upper Sacramento River, the eastern Coast Ranges along Cache Creek, and along Suisun Bay and the lower reaches of the Napa River.

The Patwin political organization, as in most of California, was based on the tribelet, “consisting of one primary and several satellite villages, with a definite sense of territoriality and autonomy” (Johnson 1978:354). Chieftainship was inherited patrilineally. The social structure of the Patwin was fairly complex. One anthropologist has described the Patwin’s “functional families” (McKern 1922). In addition to chiefly families, which exercised a political function, there were ceremonial families that had secret charms and medicines and could participate in certain dances, and trade families, whose members were “specially fitted, through possession and use of inherited charms and medicines, to engage successfully in some particular economic enterprise” (McKern 1922). These included families of net fishermen, arrow makers, goose hunters, duck trappers, ceremonial drum makers, slat makers, basketmakers, and manufacturers of ceremonial headdresses and feather belts. There were also shamanistic and official families.

In addition to a complex social structure, the Patwin participated in an elaborate religious or ritual system. The Kuksu cult, found in much of north central California, was particularly elaborate among the Patwin and included three secret societies (Johnson 1978). The Patwin material culture included featherworking and many types of basketry. Cordage and nets were manufactured, as well as tools of bone, wood, stone, and shell. Tule balsa boats were also made. Wooden mortars, as well as bedrock mortars, for processing acorns and seeds were used. Four types of earth-covered semi-subterranean structures were constructed: the family dwelling, a ceremonial house, a sudatory or sweathouse, and a menstrual hut (Johnson 1978).

The Suisun were said to have a village called Suyusuyu, though its location is unclear (Milliken 1995:181). Though they resisted the Spanish militarily between 1804 and 1810, the Suisun were brought to Mission San Francisco after a series of massacres by Spanish troops. A total of 326 Suisun were baptized between 1811 and 1816 (Milliken 1995:210, 255). As the *Californio* rancho class grew after independence from Spain, increasing competition for land led to the expropriation of church lands by secularization in 1834. Rancho Suisun, on which the project area was located, was one of the few Mexican ranchos granted to native Californians: 1837 Chief Sem Yeto, also known as Solano, claimed and was granted 17,750 acres of the traditional Suisun lands. After a severe smallpox epidemic swept through the area between 1838 and 1841, Sem Yeto sold the rancho to

Mariano Vallejo in 1842. Vallejo in turn sold it to Archibald Ritchie, who patented the grant under United States law in 1857 (Hoover et al. 1966: 464).

The town of Fairfield was laid out in 1856 by Robert H Waterman, Ritchie's business partner, and was made County seat in 1858. The adjacent town of Cordelia was named for Waterman's wife and began as a stopping place for stagecoaches bound for Sacramento. After the California Pacific Railroad (later the Central Pacific and Union Pacific line) was constructed north of the project area in 1868, Cordelia and Fairfield grew into small towns.

Lying just south of the railroad, in 1872 the project area was part of D. McCreary's 760-acre ranch southwest of Fairfield. A native of Ohio, he came overland to California in 1854 and settled in Solano County. With his wife Mary, McCreary moved from his ranch to Suisun City in 1878 so his children could attend school. His ranch home was located about ½ mile south west of the project area (Wood, Alley and Co. 1879:419; Thompson and West 1878).

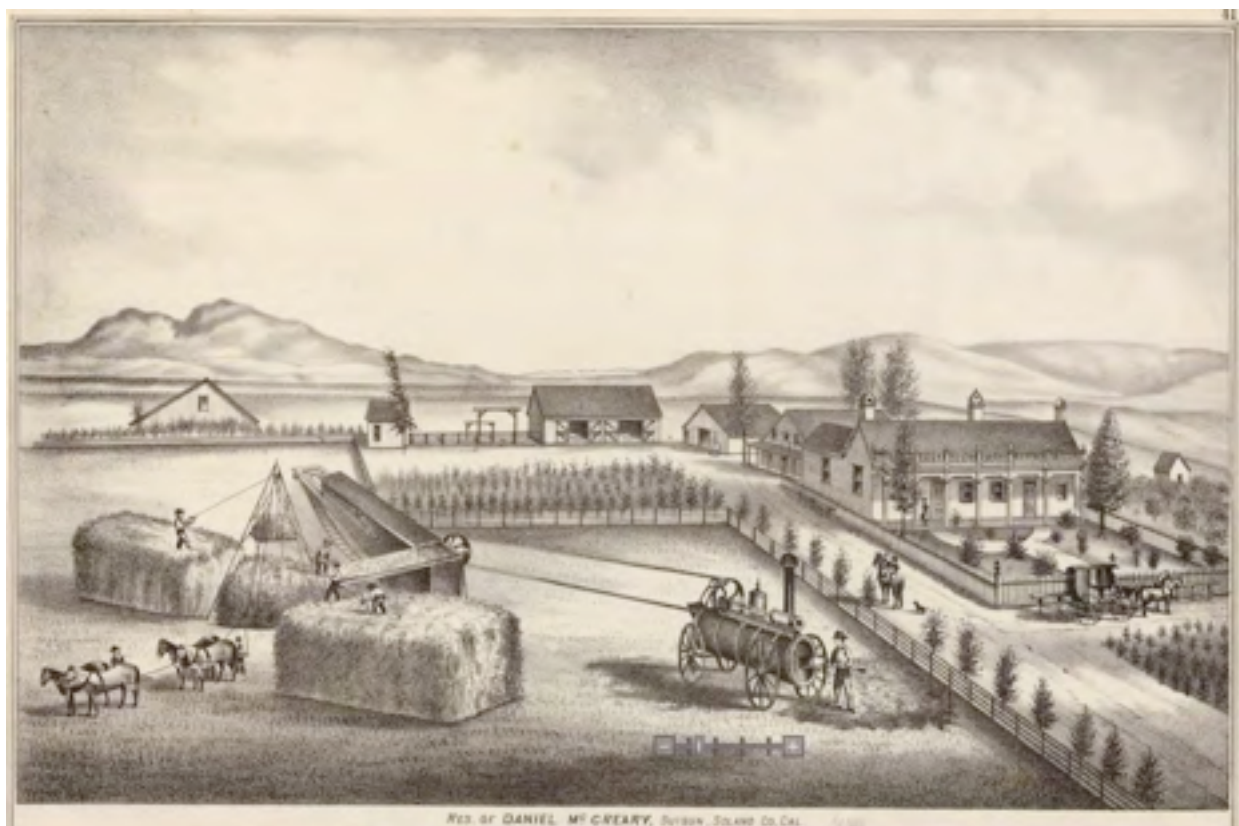


Figure 4: McCreary's Residence near the Project area, 1878 (Thompson and West 1878)

South of the project area, reclamation of marshlands began in the 1880s. Between 1891 and 1908 a system of roads was constructed in the Suisun marshes, allowing farmers to access the area to build levees (Brookshear 2013). Chadbourne Road adjacent to the project area was constructed by 1896 (USGS 1896) and ran through an area that was predominantly orchards through the 1940s. South of the project area, dozens of private duck hunting clubs were established in the marshes south of the project area beginning in the 1920s (Brookshear 2012).

Incorporated in 1903, Fairfield remained a small agricultural town until the construction of Travis Air Force Base in 1942, after which the population exploded from 1,100 residents in 1940 to over 15,000 in 1960, 58,000 in 1980, and 105,000 in 2010 (Goerke-Shrode 2005). As the city grew, additional wastewater facilities became necessary, and the FSSD began planning a new facility on the project area in 1974. The current facility was completed in 1977.

Section 4 - Regulatory Framework

Summarized below are the relevant federal and state regulations as well as local goals and policies related to cultural resources that are applicable to the Proposed Project/Action.

4.1 Federal

Summarized below are the relevant federal regulations related to cultural resources that are applicable to the Proposed Project/Action.

National Historic Preservation Act

The National Historic Preservation Act of 1966 (NHPA), as amended, established the National Register of Historic Places (NRHP), which contains an inventory of the nation's significant prehistoric and historic properties. Under 36 Code of Federal Regulations 60, a property is recommended for possible inclusion on the NRHP if it is at least 50 years old, has integrity, and meets one of the following criteria:

- It is associated with significant events in history, or broad patterns of events.
- It is associated with significant people in the past.
- It embodies the distinctive characteristics of an architectural type, period, or method of construction; or it is the work of a master or possesses high artistic value; or it represents a significant and distinguishable entity whose components may lack individual distinction.
- It has yielded, or may yield, information important in history or prehistory.
- Certain types of properties are usually excluded from consideration for listing in the NRHP, but they can be considered if they meet special requirements in addition to meeting the criteria listed above. Such properties include religious sites, relocated properties, graves and cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years.

National Environmental Policy Act

NEPA's concern is with the "human environment," defined as including the natural and physical (e.g. built) environment and the relationships of people to that environment. A thorough environmental analysis under NEPA should systematically address the "human" -- social and cultural -- aspects of the environment as well as those that are more "natural," and should address the relationships between natural and cultural. Culturally valued aspects of the environment generally include historic properties, other culturally valued pieces of real property, cultural use of the biophysical environment, and such "intangible" sociocultural attributes as social cohesion, social institutions, lifeways, religious practices, and other cultural institutions.

4.2 State

Summarized below are the relevant state regulations related to cultural resources that are applicable to the Proposed Project/Action.

California Register of Historical Resources

As defined by Section 15064.5(a)(3)(A-D) of the CEQA Guidelines, a resource shall be considered historically significant if the resource meets the criteria for listing on the California Register of Historical Resources (CR). The California Register of Historical Resources and many local preservation ordinances have employed the criteria for eligibility to the NRHP as a model, since the NHPA provides the highest standard for evaluating the significance of historic resources. A resource that meets the NRHP criteria is clearly significant. In addition, a resource that does not meet the NRHP standards may still be considered historically significant at a local or state level.

California Environmental Quality Act

The CEQA Guidelines state that a resource need not be listed on any register to be found historically significant. The CEQA guidelines direct lead agencies to evaluate archaeological sites to determine if they meet the criteria for listing in the California Register. If an archaeological site is a historical resource, in that it is listed or eligible for listing in the California Register, potential adverse impacts to it must be considered. If an archaeological site is considered not to be a historical resource, but meets the definition of a “unique archeological resource” as defined in Public Resources Code Section 21083.2, then it would be treated in accordance with the provisions of that section.

4.3 Local

The Proposed Project/Action is located within the City of Fairfield and Solano County and is subject to the policies of the City of Fairfield and Solano County.

City of Fairfield General Plan

The City of Fairfield’s General Plan established the following goals and policies related to cultural resources that are applicable to the Proposed Project/Action:

- **Objective OS 10:** Preserve and establish cultural and historic resources.
 - **Policy OS 10.3:** Consult with the California Archaeological Inventory Northwest Information Center at Sonoma State University on any project that could have an impact on cultural resources.
 - **Policy OS 10.4:** Avoid impacts on cultural resources when archeological studies reveal the presence of cultural resources at a development site. If avoidance is infeasible, require site testing by a qualified archeologist to determine the significance of the resources, and implement recommended mitigation measures.
 - **Policy OS 10.5:** Halt construction at a development site if cultural resources are encountered unexpectedly during construction and require consultation with a qualified archeologist to determine the significance of the resources.
 - **Policy OS 10.7:** Require archeological studies by a qualified archeologist (as defined by the Secretary of the Interior’s standards) in areas of archeological significance prior to approval of development projects.

- **Policy OS 10.8:** Prepare and maintain an inventory of historic structures within the General Plan Area per the City’s adopted Historic Preservation Ordinance and, where appropriate, promote the inclusion of these structures on the California Register of Historic Resources and the National Register of Historic Places. Work with property owners in seeking registration of historical structures as State Historic Landmarks or listing on the National Register of Historic Places.
- **Program OS 10.8 A:** The City shall require that a qualified architectural historian inventory and evaluate the significance of buildings and structures located in or adjacent to parcels before approval of development projects. Information of resources found to be eligible for listing on the California Register of Historic Resources should be provided to the Open Space Commission for inclusion on their inventory of historic structures.

Solano County General Plan

The County of Solano’s General Plan established the following goals and policies related to cultural resources that are applicable to the Proposed Project/Action:

Policies

- RS.P-38: Identify and preserve important prehistoric and historic structures, features, and communities.
- RS.P-39: Tie historic preservation efforts to the County’s economic development pursuits, particularly those relating to tourism.
- RS.P-40: Consult with Native American governments to identify and consider Native American cultural places in land use planning.
- RS.I-25: Require cultural resources inventories of all new development projects in areas identified with medium or high potential for archeological or cultural resources. Where a preliminary site survey finds medium to high potential for substantial archaeological remains, the County shall require a mitigation plan to protect the resource before issuance of permits. Mitigation may include:

Implementation/Development Review

- Having a qualified archaeologist present during initial grading or trenching (monitoring);
- Redesign of the project to avoid archaeological resources (this is considered the strongest tool for preserving archaeological resources);
- Capping the site with a layer of fill;
- Excavation and removal of the archaeological resources and curation in an appropriate facility under the direction of a qualified archaeologist; and/or
- Alerting applicants for permits within early settlement areas to the potential sensitivity. If significant archaeological resources are discovered during construction or grading activities, such

activities shall cease in the immediate area of the find until a qualified archaeologist can determine the significance of the resource and recommend alternative mitigation.

Section 5 - Investigation Methodology and Results

This section summarizes the investigation methods used to determine the potential for cultural resources to be affected by the Proposed Project/Action.

5.1 Northwest Information Center (NWIC) Record Search

On June 8, 2016, a records search was conducted by staff at the NWIC, Sonoma State University, Rohnert Park, California (NWIC File #15-1635). The record search included the project Area of Potential Effect (APE) and a 0.50-mile radius outside the project boundaries. The record search included reviewing pertinent NWIC base maps that reference cultural resources records and reports, historic period maps, and literature for Solano County including current inventories of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHP), the California Inventory of Historical Resources, California State Historic Landmarks, and the California Points of Historical Interest.

According to information provided by NWIC, one cultural resource adjoins the project area and three more resources are located within ½ mile of the project area. Provided below is a summary of these resources.

- Chadbourne Road is adjacent to the project area and is part of a historic road system in the marshes south of Fairfield that was built between 1891 and 1908, which was recorded as P-48-000981 in 2013 (Brookshear 2013). The roads, however, are not eligible for the National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR). In addition the Proposed Project/Action would not affect this resource.
- Approximately 2,000-feet northeast of the FSSD Chadbourne Road facility, a historic archaeological site – likely the remains of a ranch – was recorded in 1980. Located 250-feet north of Cordelia Road, it consists of a concrete foundation and historic landscape trees (P-48-000120/CA-SOL-279H; Chavez 1980). The Proposed Project/Action would not affect this resource.
- 300 feet northwest of the FSSD Chadbourne Road facility, the Southern Pacific Railroad line (formerly owned by the Union Pacific and Central Pacific) is recorded as P-48-000549 (CA-SOL-499H). The Proposed Project/Action would not affect this resource.
- A group of over 50 duck hunting clubs in the Suisun marshes south of the project area was recorded as P-48- 000987 (Brookshear 2012). The Proposed Project/Action would not affect these resources.

In addition, four previous archaeological studies have examined part or all of the project area. Specifically, a 1974 study examined the Proposed Project/Action area prior to construction of the wastewater treatment plant (S-5067, Johnson and Johnson 1974), but located no cultural resources. Cordelia Road along the north side of the project area was surveyed in 1976 (S-5132,

Peak 1976), and a record search and survey covered the northern part of the project area in 1979 (S-5167, Mabry 1979). More recently, a large portion of the FSSD WWTP facility was surveyed in 2003 as part of a proposed expansion project (S-27641, Self 2003). None of these studies identified cultural resources.

5.2 Survey Methods

Dr. Daniel Shoup carried out a pedestrian archaeological survey of the project area on July 7, 2016. Dr. Shoup meets the Secretary of the Interior's standards for archaeology. All open areas were inspected for cultural evidence such as historic structures, artifacts, and features; and indicators of prehistoric archaeological deposits like midden soil, flaked lithics, groundstone, and shell.

The survey inspected the new air header route, new ductbank route, the existing concrete pads where new generators and transformers will be installed, and a large staging area at the eastern end of the facility. Soil visibility was fair throughout the site, with grass and weeds covering 50-75% of the unpaved areas. Surface soils in the project area are dark tan to medium brown silty clay with varying quantities of gravel and asphalt chunks on the surface.

No indicators of archaeological deposits were observed on the survey. No built environmental resources over 50 years of age were observed.

5.3 Native American Heritage Commission Record Search and Outreach

On May 16, 2016, a letter was sent to the Native American Heritage Commission (NAHC) in Sacramento, California in an effort to determine whether any sacred sites listed on its Sacred Lands File are within the current project APE. A response from the NAHC was received on May 20, 2016, stating that a search of its Sacred Land File failed to indicate the presence of Native American cultural resources in the immediate project APE. Included with the response was a list of 2 Native American representatives who may have further knowledge of Native American resources within or near the project APE. To ensure that all Native American concerns are adequately addressed, letters to each of the listed tribal contacts were sent on May 25, 2016, requesting any information about the project that these individuals may have. Follow-up contacts have been attempted. Follow-up contacts were made on July 8, 2016. On June 16, 2016, the Yocha Dehe Wintun Nation contacted us via letter (see Attachment A) stating that they had some concerns and wanted us to send them a copy of this report, which we will.

5.4 Conclusions and Recommendations

This investigation was conducted in compliance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 Code of Federal Register [CFR] Part 800). Based upon this investigation, the Proposed Project/Action would not have any significant impacts to cultural resources. Specifically, the proposed Project would have:

- ***No Effect on any known Historical Resources or Properties;***
- ***No Effect on any known Archeological Resources;***
- ***No Effect on any known Paleontological Resources; and/or***

- ***No Effect on any known Burial Sites.***

However, the construction of the Proposed Project could uncover unidentified or known buried cultural resources (i.e. Historical, archeological, paleontological, and human remains). To further reduce the potential to affect any of these resources, the following recommendations and mitigation measures should be implemented to ensure that there are no significant impacts to cultural resources that may exist in the APE as direct and indirect result of the Proposed Project/Action.

- **Halt work if cultural resources are discovered.** In the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 100 feet of the resources shall be halted and after notification, the District shall consult with a qualified archaeologist to assess the significance of the find. If any find is determined to be significant (CEQA Guidelines 15064.5[a][3] or as unique archaeological resources per Section 21083.2 of the California Public Resources Code), representatives of the District and a qualified archaeologist shall meet to determine the appropriate course of action. In considering any suggested mitigation proposed by the consulting archaeologist in order to mitigate impacts to historical resources or unique archaeological resources, the lead agency shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation for historical resources or unique archaeological resources is carried out.
- **Halt work if human remains are found.** If human remains are encountered during excavation activities conducted for the Proposed Project/Action, all work in the adjacent area shall stop immediately and the Solano County Coroner's office shall be notified. If the Coroner determines that the remains are Native American in origin, the Native American Heritage Commission shall be notified and will identify the Most Likely Descendent, who will be consulted for recommendations for treatment of the discovered human remains and any associated burial goods.

Section 6 - Bibliography

In addition to the archaeological maps and site records on file at the Northwest Information Center of the Historical Resources Information System, the following literature was reviewed and/or referenced:

Brookshear, Cheryl

2012 Primary Record for Suisun Marsh Duck Clubs (P-48-000987). On file, Northwest Information Center, California Historical Resources Information System.

2013 Primary Record for Grizzly Island Road, Collinsville Road, and Chadbourne Road (P-48-000981). On file, Northwest Information Center, California Historical Resources Information System.

Chavez, David

1980 Cultural Resources Evaluation of the North Bay Aqueduct Alignment Alternatives (Routes 1, 4 and 6), Solano County. On file, Northwest Information Center, California Historical Resources Information System, Report S-005167.

City of Fairfield.

2002 General Plan.

County of Solano.

2008 General Plan.

Goerke-Shrode, Sabine

2005 *Images of America: Fairfield*. Charleston, SC: Arcadia Publishing.

Golla, Victor.

2007. "Linguistic Prehistory", In Terry L. Jones, and Kathryn A. Klar, eds., *California Prehistory: Colonization, Culture, and Complexity*. New York: Altamira Press, pp. 71–82.

Graymer, R.W., B.C. Moring, G.J. Saucedo, C.M. Wentworth, E.E. Brabb, and K.L. Knudsen.

2006 *Geological Map of the San Francisco Bay Region. Scale 1:275,000.* U.S. Geological Survey and California Geological Survey.

Hoover, Mildred B., Hero E. Rensch, Ethel G. Rensch, William N. Abeloe, and Douglas E. Kyle

1990 *Historic Spots in California.* Fourth edition. Stanford University Press, Stanford, Ca.

Johnson, Patti J.

1978 Patwin. In *Handbook of North American Indians. Vol. 8: California.* Smithsonian Institution, Washington, D.C.

Mabry, Theo N.

1979 Archaeological Records Search and Reconnaissance Survey, Fairfield Redevelopment Project, Fairfield, CA. On file, Northwest Information Center, California Historical Resources Information System, Report S- 005132.

McKern, W.C.

1922 Functional Families of the Patwin. *University of California Publications in American Archaeology and Ethnology* 13(7). Berkeley.

Milliken, Randall T.

1995 *A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area, 1769-1810.*

Ballena Press, Menlo Park.

Peak, Ann S.

1976 Cultural Resource Assessment of the Margins of Cordelia and Chadbourne Roads in the City of Fairfield, California. On file, Northwest Information Center, California Historical Resources Information System, Report S-005078.

Thompson and West

1878 Historical Atlas Map of Solano County. San Francisco, CA.

U.S. Geological Survey

1896 Karquines 15' Quadrangle. Washington, DC: Government Printing Office. 1901 Carquinez 15' Quadrangle. Washington, DC: Government Printing Office. 1942 Carquinez 15' Quadrangle. Washington, DC: Government Printing Office.

Wood, Alley and Co.

1879 History of Solano County. San Francisco: H.S. Crocker and Co.

Attachment A

Native American Correspondence

The Record Search from NWIC has been removed due to the sensitivity of cultural resources in public documents

Letter to NAHC



May 16, 2016

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691

Subject: Sacred Land Files and Native American Contact List Request for the Fairfield-Suisun Sewer District's Blower Replacement Project, Solano County

To Whom It May Concern:

SMB Environmental is assisting the Fairfield-Suisun Sewer District (District) prepare environmental documentation for its proposed Blower Replacement Project (Proposed Project). The Proposed Project is located entirely within the District's wastewater treatment plant in Solano County, California. Please see the attached map.

For purposes of Section 106 compliance, we would appreciate your checking of the Sacred Lands Files to see if there are any culturally sensitive areas within the immediate project vicinity. We would also like to receive a list of Native American organizations that may have knowledge or interest in the Proposed Project area and we will attempt to contact them to solicit their written input/concerns about the Proposed Project.

Thank you for your cooperation and assistance. I look forward to your earliest possible reply. If any questions, please feel free to contact me at 916-517-2189 or at steve@smbenvironmental.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "SJB", is positioned above the printed name and title.

Steve Brown
Principal

Response From NAHC

NATIVE AMERICAN HERITAGE COMMISSION

1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 Fax



May 20, 2016

Steve Brown
SMB Environmental

Sent via e-mail: steve@smbenvironmental.com
Number of pages: 2

RE: Blower Replacement Project, Solano County

Dear Mr. Brown:

Attached is a list of tribes that have cultural and traditional affiliation to the area of potential project effect (APE) referenced above. I suggest you contact all of those listed, if they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. By contacting all those on the list, your organization will be better able to respond to claims of failure to consult, as may be required under particular state statutes. If a response has not been received within two weeks of notification, the Native American Heritage Commission (NAHC) requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions, please contact me at my email address:
sharaya.souza@nahc.ca.gov

Sincerely,

A handwritten signature in blue ink, appearing to read "Sharaya Souza".

Sharaya Souza
Staff Services Analyst

**Native American Contacts
Solano County
May 19, 2016**

Cortina Band of Indians
Charlie Wright, Chairperson
P.O. Box 1630
Williams, CA 95987
(530) 473-3274 Office
(530) 473-3301 Fax

Wintun / Patwin

Yocha Dehe Wintun Nation
Leland Kinter, Chairperson
P.O. Box 18
Brooks, CA 95606
lkinter@yochadehe-nsn.gov
(530) 796-3400
(530) 796-2143 Fax

Wintun (Patwin)

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Blower Replacement Project, Solano County.

Letters to Distribution List From NAHC



May 25, 2016

Cortina Band of Indians
Charlie Wright, Chairperson
P.O. Box 1630
Williams, CA 95987

Subject: Request for Cultural Resources Site Information for the Fairfield-Suisun Sewer District's Blower Replacement Project, Solano County

Dear Charlie Wright:

SMB Environmental is assisting the Fairfield-Suisun Sewer District (District) prepare environmental documentation for its proposed Blower Replacement Project (Proposed Project). The Proposed Project is located entirely within the District's wastewater treatment plant in Solano County, California. Please see the attached map.

The Native American Heritage Commission was contacted about the Proposed Project and provided us with a list of Native American individuals and organizations that may have knowledge of cultural resources in the project area. Please provide us with any information you may have about cultural resources or sites in the project area so that we can determine ways to protect those sites, including archeological sites and other locations of special value to Native Americans.

Thank you for your cooperation and assistance. I look forward to your earliest possible reply. If any questions, please feel free to contact me at 916-517-2189 or at steve@smbenvironmental.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "SJB", is written over a light blue horizontal line.

Steve Brown
Principal



May 25, 2016

Yocha Dehe Wintun Nation
Leland Kinter, Chairperson
P.O. Box 18
Brooks, CA 95606

Subject: Request for Cultural Resources Site Information for the Fairfield-Suisun Sewer District's Blower Replacement Project, Solano County

Dear Leland Kinter:

SMB Environmental is assisting the Fairfield-Suisun Sewer District (District) prepare environmental documentation for its proposed Blower Replacement Project (Proposed Project). The Proposed Project is located entirely within the District's wastewater treatment plant in Solano County, California. Please see the attached map.

The Native American Heritage Commission was contacted about the Proposed Project and provided us with a list of Native American individuals and organizations that may have knowledge of cultural resources in the project area. Please provide us with any information you may have about cultural resources or sites in the project area so that we can determine ways to protect those sites, including archeological sites and other locations of special value to Native Americans.

Thank you for your cooperation and assistance. I look forward to your earliest possible reply. If any questions, please feel free to contact me at 916-517-2189 or at steve@smbenvironmental.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "SJB", is written over a light blue horizontal line.

Steve Brown
Principal

Responses From Tribes



YOCHA DEHE
CULTURAL RESOURCES

June 16, 2016

Steve Brown
SMB Environmental
P.O. Box 381
Roseville, CA 95661

RE: Fairfield-Suisun Sewer District Blower Replacement Project

Dear Mr. Brown:

Thank you for your project notification letter dated, May 25, 2016, regarding cultural information on or near the proposed Fairfield-Suisun Sewer District Blower Replacement project, Solano County, CA. We appreciate your effort to contact us and wish to respond.

The Cultural Resources Department has reviewed the project and concluded that it is within the aboriginal territories of the Yocha Dehe Wintun Nation. Therefore, we have a cultural interest and authority in the proposed project area.

Based on the information provided, the Tribe has concerns that the project could impact known archaeological/cultural sites. Please send us the cultural resource study for this project.

Should you have any questions, please contact the following individual:

Mr. James Sarmento
Cultural Resources Manager
Yocha Dehe Wintun Nation
Office: (530) 723-0452, Email: jsarmento@yochadehe-nsn.gov

Please refer to identification number YD - 06092016-01 in any correspondences concerning this project.

Thank you for providing us with this notice and the opportunity to comment.

Sincerely,

James Kinter
Tribal Secretary
Tribal Historic Preservation Officer