

City of Vacaville Recycled Water Project



Public Draft Initial Study/Mitigated Negative Declaration

Prepared by:



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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 City of Vacaville's (City) proposed Recycled Water Project (Proposed Project/Action and/or Preferred Alternative).

1.1 Project Location, Setting, and Background

As shown on Figure 1, the City is located in northern Solano County, midway between San Francisco and Sacramento. The City of Vacaville, incorporated in 1892 and currently comprising just under 27 square miles, has a beautiful setting bordered by rolling hillsides, fruit orchards and fertile farmland. With an elevation ranging from 90- to 300-feet, Vacaville enjoys warm summers and mild winters, with an average summer high of 94 degrees and an average winter low of 36 degrees. Annual rainfall averages about 24-inches. The City's rich history has transformed the community from a small agricultural town into a thriving and progressive city; now a diverse population of 97,446 residents call Vacaville home. While the City's population history and demographics show its rapid growth, Vacaville remains a "small town at heart," whose residents pride themselves on the high level of community involvement.

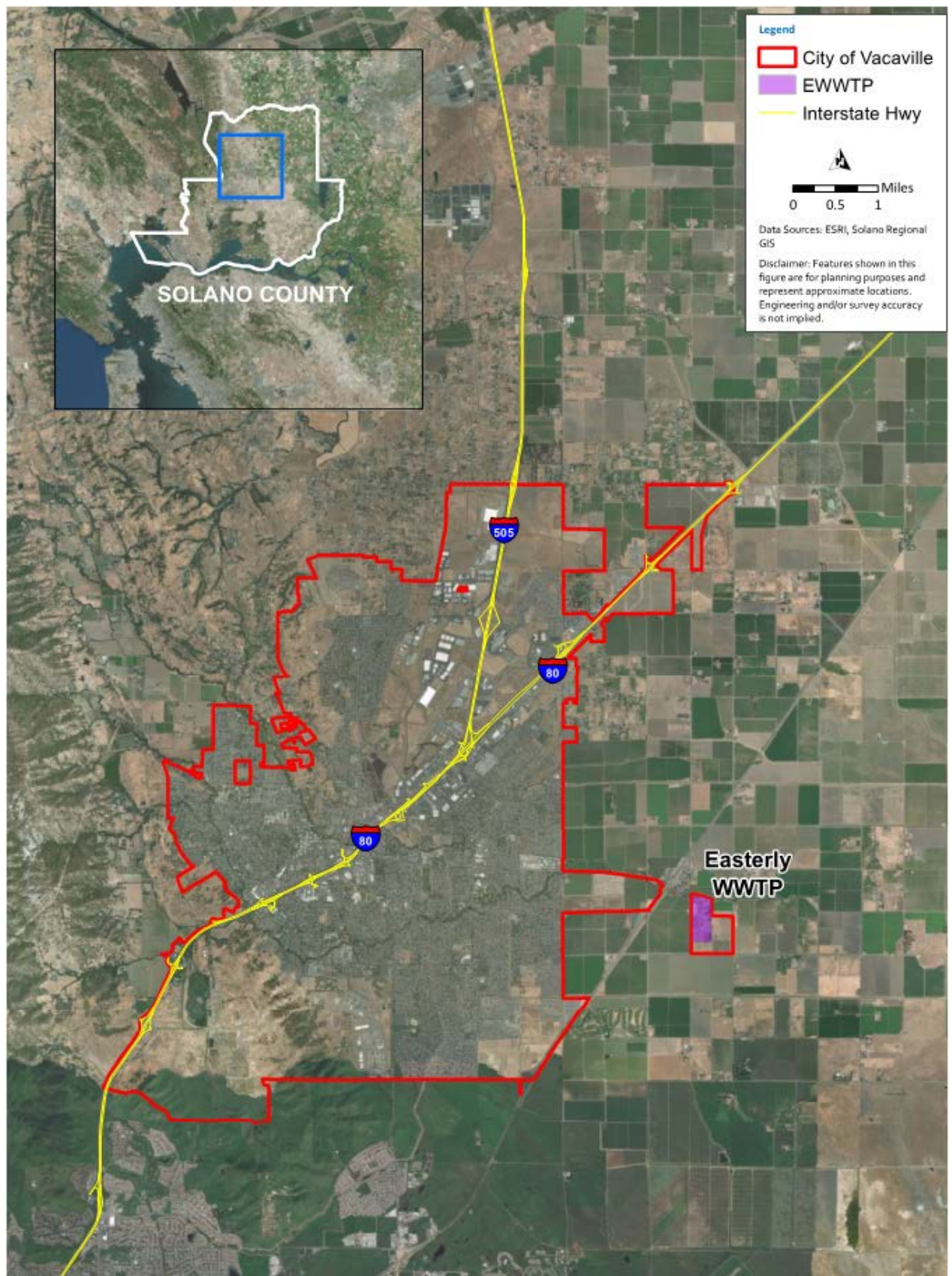
The City owns and operates the Easterly Wastewater Treatment Plant (EWWTP or Easterly WWTP), which serves approximately 97,000 people throughout the City of Vacaville, the Community of Elmira, the California Medical Facility, and most of the Vaca Valley Industrial Park. The Easterly WWTP, located at 6040 Vaca Station Road, Elmira, CA 95625. The Easterly WWTP discharges wastewater to Old Alamo Creek, which is a tributary to New Alamo Creek, which is a tributary to Ulatis Creek, which eventually outlets to Cache Slough and the Sacramento-San Joaquin River Delta (Delta).

Since its construction in 1959, treated effluent from the Easterly WWTP has been discharged into Old Alamo Creek. The contributing watershed to Old Alamo Creek upstream of the Easterly WWTP was dramatically reduced in the early 1960s when New Alamo Creek, a larger, man-made conveyance channel, was constructed as part of a federal flood control project. As part of the flood control project, Old Alamo Creek downstream of the Easterly WWTP was partially realigned to flow into New Alamo Creek.

Old Alamo Creek originally shared the beneficial uses assigned to the Delta since it is a tributary to the Delta. However, in 2005, the Central Valley Regional Water Quality Control Board (CVRWQCB), amended the Basin Plan for the Sacramento and San Joaquin River Basins to remove certain beneficial uses from those initially assigned to Old Alamo Creek. Specifically, the CVRWQCB concluded that drinking water supply is not an existing beneficial use for Old Alamo Creek and that beneficial use probably cannot be feasibly attained in the future. This is due to the ephemeral, intermittent, or low flows associated with Alamo Creek, and the release of additional treated sewage effluent from the Easterly WWTP as the City of Vacaville grew.

In 2006, the State Water Resources Control Board (SWRCB), declared Old Alamo Creek was an exception to the Sources of Drinking Water Policy. The exception did not modify the beneficial uses of New Alamo Creek, which meant that the flow in Old Alamo Creek must meet or exceed the water quality requirements of New Alamo Creek at the convergence of Old Alamo Creek and New Alamo Creek. Since the Easterly WWTP discharge dominates the flow in Old Alamo Creek during most periods, its effluent must meet requirements similar to those that apply to New Alamo Creek.

Today, the Easterly WWTP operates 24 hours, seven days a week (24/7) and treats an average of 7.5 million gallons of wastewater per day and has an average dry weather treatment capacity of 15 MGD. The plant operates under a National Pollutant Discharge Elimination System (NPDES) permit issued and regulated by the Central Valley Regional Water Quality Control Board (Regional Board) to provide Title 22 tertiary level treatment. The Easterly WWTP is a state-of-the-art wastewater treatment plant that utilizes many complex processes to produce treated wastewater and Title 22 recycled water. Wastewater undergoes



primary, secondary and tertiary treatment and disinfection before being released into Alamo Creek, where it travels to Cache Slough, and eventually out to the Delta.

1.2 Goal and Objective and Purpose and Need

The purpose of the Proposed Project is to provide a variety of beneficial recycled water uses including agricultural irrigation, urban irrigation, and industrial reuse of Easterly WWTP tertiary treated recycled water, consistent with the recommended project identified in the *City of Vacaville, Draft Recycled Water Master Plan, April 2020*.¹

1.3 Potential Federal Funding and Environmental Analysis

Many successful recycled water 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). In addition, local and regional programs, statewide, occasionally offer additional incentives directed at actual deliveries to promote recycling as an offset to potable water demand. It is anticipated that the City will pursue federal 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 City 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 City's Proposed Project/Action to provide a variety of beneficial recycled water uses including agricultural irrigation, urban irrigation, industrial reuse, and downstream diversions of Easterly WWTP discharges. 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 recycled water 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 City, and/or the State Board determine what the

¹ Please note that the City would like to provide additional Easterly WWTP effluent discharges to downstream users for diversions via water transfer agreements along Alamo Creek and Cache Slough prior to discharge to the Delta. However, at the time of this publication, these specific plans and details are not known in sufficient detail to support a thorough and complete environmental analysis. As such, this environmental document does not cover these activities and additional project specific environmental analysis will be required once these specific plans and details become known including, but not limited to, the specific place of use(s), quantities, and intended uses of the tertiary treated recycled water effluent.

major potential environmental impacts are to comply with CEQA and/or CEQA-plus requirements.

1.4 Document Organization and Review Process

This document is intended to provide a preliminary environmental investigation of the Proposed Project 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 location, setting, background, goals and objectives of the Proposed Project, and document contents.
- Chapter 2, Proposed Project Description and Alternatives. Chapter 2 describes the major components of the Proposed Project 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 the CEQA-Plus requirements
- Chapter 4, Determination. Chapter 4 provides the proposed action as a result of this IS/MND.
- 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:

Fred Buderl, Acting Director of Community Development
City of Vacaville
650 Merchant Street
Vacaville, CA 95688
Fred.buderl@cityofvacaville.com
707-449-5307

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 City 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, compliance with the California Code of Regulations (CCR) Title 22 and State Board Requirements, operational plans, and potential approvals and permits that may be necessary. In addition, this section also describes the No Project/Action Alternative.

2.1 Proposed Project Description

The purpose of the Proposed Project is to provide approximately 2,830 acre-feet of tertiary treated recycled water from the Easterly WWTP for a variety of beneficial recycled water uses including agricultural irrigation, urban irrigation, and industrial reuse - consistent with the recommended project identified in the *City of Vacaville, Draft Recycled Water Master Plan, April 2020*.²

As shown on Figure 2, the Proposed Project/Action includes approximately 9-miles (48,000 linear feet) of new recycled water distribution pipelines that would connect with the approximately 20-miles of the City's existing recycled water pipelines. Table 1 provides a summary of the proposed pipeline lengths and diameter. The proposed distribution system has two pipeline branches ranging in size from 6-inch to 20-inches in diameter. One branch extends southeast of Easterly WWTP to serve the planned athletic fields adjacent to the City's Easterly WWTP, one direct agricultural parcel, and Cypress Lakes Golf Course. The other branch extends west from Easterly WWTP and then branches to both the north and the south along Leisure Town Road. This northwest branch utilizes an abandoned sewer line to cross the railroad tracks between Fry Road and Elmira Road and also utilizes existing recycled water lines installed within some of the new developments and along Leisure Town Road. The northwest distribution branch serves urban irrigation customers in new developments along Leisure Town Road, one direct agricultural customer south of Elmira Road and west of the railroad, and a few industrial reuse customers in the Vaca Valley Business Park located between I-80 and I-505. Implementation of the distribution pipelines is phased into immediate, near-, and long-terms.

Table 1 Proposed Project/Action Pipeline Facilities			
Phase	Diameter (in)	Total Pipeline Length ⁽¹⁾ (ft)	New Pipeline Length (ft)
Immediate	6 ⁽²⁾	400	400
	8	29,700	0
	12	22,900	500
	14	2,400	1,400
	20	5,700	5,700
Immediate Phase Total:		61,100	8,000
Near	12	13,300	10,100
	14 ⁽³⁾	16,100	16,100
	16	1,800	1,800
Near Phase Total:		31,200	28,000
Long	12	4,100	4,100
	14	7,900	7,900
Long Phase Total:		12,000	12,000
Overall Total:		104,300	48,000

² Please note that the City would like to provide additional Easterly WWTP effluent discharges to downstream users for diversions via water transfer agreements along Alamo Creek and Cache Slough prior to discharge to the Delta. However, at the time of this publication, these specific plans and details are not known in sufficient detail to support a thorough and complete environmental analysis. As such, this environmental document does not cover these activities and additional project specific environmental analysis will be required once these specific water transfer plans and details become known including, but not limited to, the specific place of use(s), quantities, and intended uses of the tertiary treated recycled water effluent.

Table 1 Proposed Project/Action Pipeline Facilities			
Phase	Diameter (in)	Total Pipeline Length ⁽¹⁾ (ft)	New Pipeline Length (ft)
Notes:			
(1) Length includes existing and planned development recycled water line lengths.			
(2) Assumes 6-inch connection to existing 3W line to serve Athletic Fields in immediate phase.			
(3) Includes 700-feet of 14-inch pipeline at Easterly WWTP from diversion wet well to new storage.			

Table 2 lists individual customer average day and peak day demands. Demands are assumed to continue without change from one phase into the following phase (e.g. all immediate term demands are included in the near- and long-term phases). Table 3 presents the annual demands of all customers categorized by the type of use.

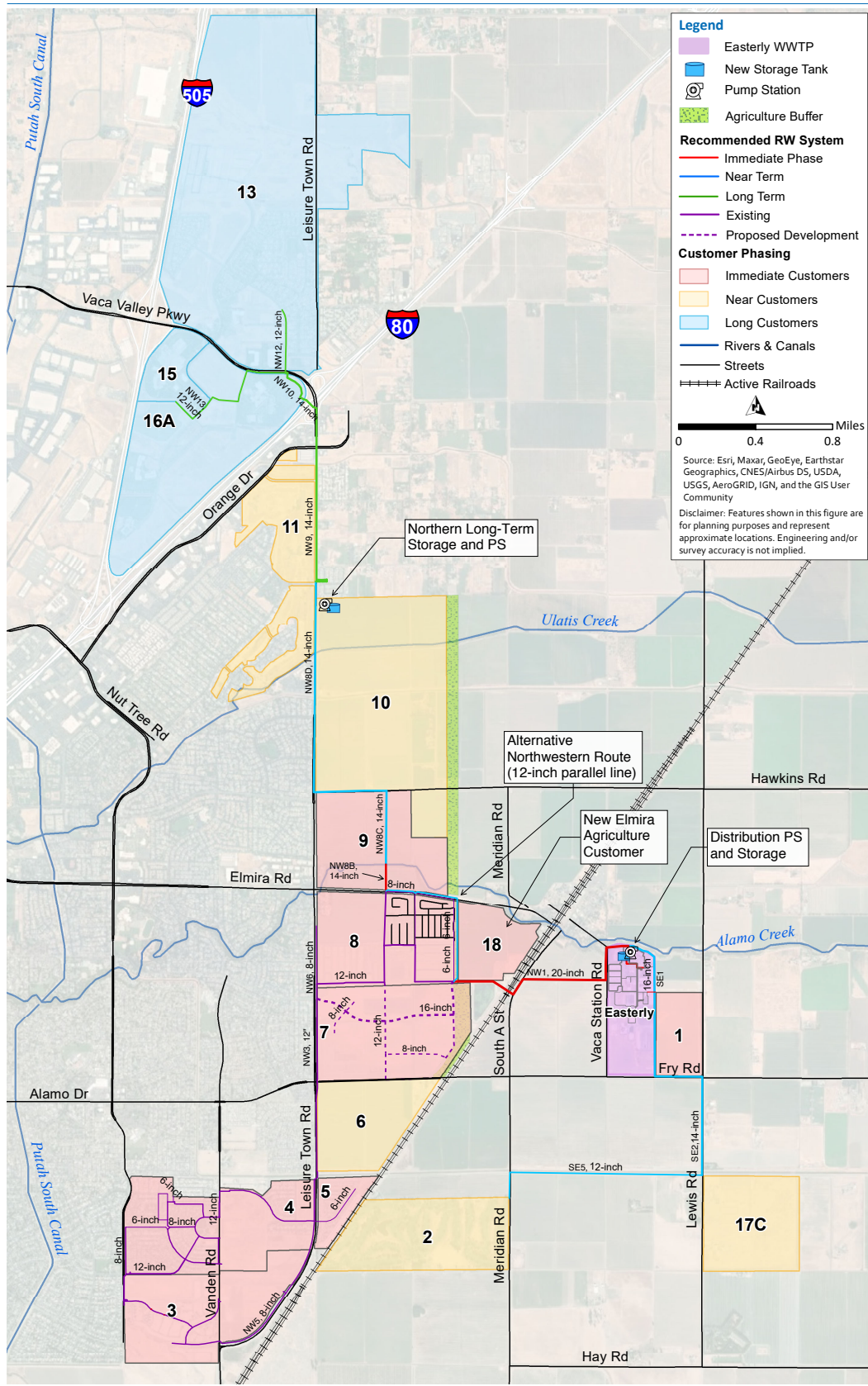
Table 2 Customer Demands by Phase					
ID	Customers	Type of Use (1)	Avg Day Demand (mgd)	Avg Day Demand (afy)	Peak Day Demand (mgd)
Immediate Term					
1	New City Athletic Fields	Urb Irr	0.10	110	0.29
3	Vanden Meadows Development	Urb Irr	0.09	100	0.26
4	Southtown Development	Urb Irr	0.12	130	0.33
5	Southtown Commons/Moody	Urb Irr	0.02	20	0.05
7	Roberts Ranch	Urb Irr	0.13	145	0.38
8	Brighton Landing	Urb Irr	0.10	115	0.30
9	The Farm at Alamo Creek	Urb Irr	0.11	125	0.32
19	Elmira	Direct Ag	0.20	230	0.55
Immediate Term Subtotal			0.87	975	2.48
Near Term					
2	Cypress Lakes Golf Course	Urb Irr	0.30	340	0.88
6	East of Leisure Town Road Development (South)	Urb Irr	0.07	75	0.19
10	East of Leisure Town Road Development (North)	Urb Irr	0.22	245	0.63
11	Green Tree Development	Urb Irr	0.07	75	0.19
17C	Agricultural Customer	Direct Ag	0.39	435	1.04
Near Term Subtotal			1.04	1,170	2.94
Long Term					
13	North Village	Urb Irr	0.33	370	0.96
15	Genentech	Industrial	0.14	155	0.14
16A	Vaca Valley Business Park (excluding Genentech)	Industrial	0.14	160	0.14
Long Term Subtotal			0.61	685	1.24
TOTAL			2.52	2,830	6.66
Notes:					
(1) Urb Irr = Urban Irrigation, DD = Downstream Diversions, Direct Ag = Direct Agricultural Reuse					

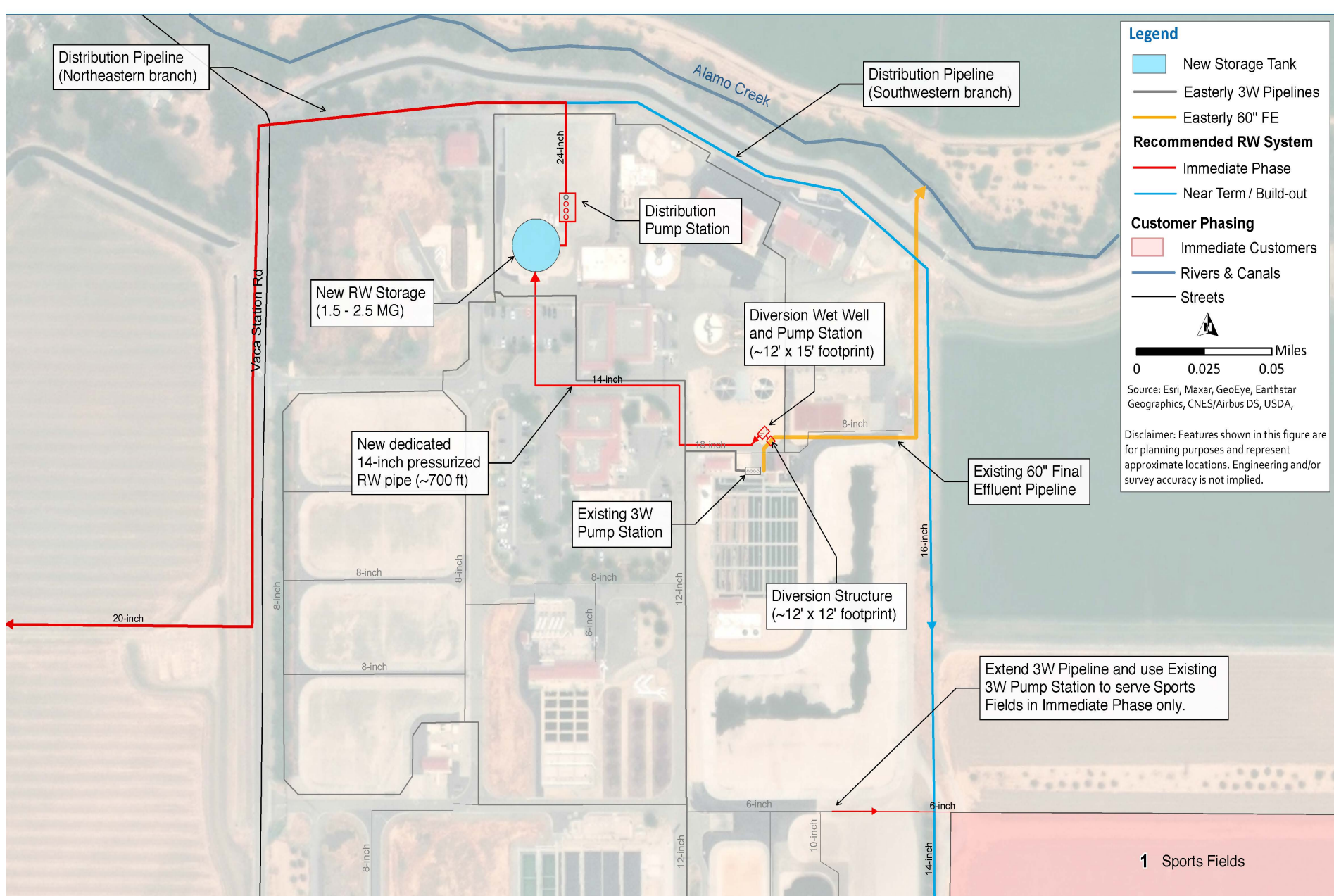
Table 3 Annual Demand Summary by Reuse Type			
Phase	Urban Irrigation (afy)	Direct Agriculture (afy)	Industrial (afy)
Immediate	745	230	0
Near	735	435	0

Table 3 Annual Demand Summary by Reuse Type			
Phase	Urban Irrigation (afy)	Direct Agriculture (afy)	Industrial (afy)
Long	370	0	315
Total	1,850	665	315

As shown on Figure 3, the Proposed Project/Action also includes other facilities including a new diversion structure and wet well, a new 2.5MG recycled water storage tank, a new pump station, and a water truck filling station at the Easterly WWTP. In addition, and as shown in Figures 2 and 4, the Proposed Project/Action also includes an off-site recycled water storage tank and booster pump station, located adjacent to the Green Tree Development on the east side of Leisure Town Road. Each are discussed below.

- New Easterly WWTP Diversion Structure and Wet Well.** The Proposed Project/Action includes a new diversion structure and wet well at the Easterly WWTP to divert recycled water flows from the final effluent outfall pipeline downstream of the 3W system pump station. Diverting at this location would not interfere with plant 3W demands or operations. The diversion structure is sized to meet Easterly WWTP's peak hour wet weather flow of 55-mgd, and allow for the full effluent to discharge to Alamo Creek if needed. The structure would also allow for flow to the creek year-round, if required. Diverted recycled water would flow into a wet well and pump station and be conveyed via a new 700-foot dedicated 14-inch pressurized pipeline to storage.
- New Easterly WWTP Recycled Water Storage.** The Proposed Project/Action includes a new 1.5- to 2.5-MG recycled water storage tank at the Easterly WWTP to mitigate the risk of not having enough storage capacity during wet weather events and to provide a long-term recycled water storage solution.
- New Easterly WWTP Pump Stations.** The Proposed Project/Action includes one (1) new 300-hp pump station and a new 20-inch diameter pipeline located at Easterly WWTP to serve the immediate phase needs of the northwest distribution branch. In the immediate phase the new City Athletic Fields will be served via the existing 3W pumps and distribution system at Easterly WWTP. A new 6-inch pipeline extension off the existing system will be built to connect the athletic fields (Shown in Figure 3). In the future, these pump stations will be upsized to 625-hp and a southeast branch of the distribution system will be added to serve the City athletic fields and other customers in the southeast. It is assumed that the pump stations, sized for peak hour demand flows will serve the northwest and southeast pipeline branches on a continuous basis.
- Water Truck Filling Station.** The Proposed Project/Action also includes a recycled water truck filling station located at Easterly WWTP. The filling station would tie in to the City's existing Recycled Water System (3W) at the Easterly WWTP and require limited additional infrastructure. This filling station would provide recycled water for City services such as dust control, street cleaning, sewer flushing, and use in construction, among others. This would provide a community benefit and help the City defer water costs. There would also be potential to expand access to the truck filling station to other commercial entities within the City and possibly to the general public. The exact site of the filling station at Easterly WWTP is to be determined, but would be located such that interaction with other plant traffic would be minimized and it would not disrupt any part of plant operations.
- New Off-Site Recycled Water Storage Tank and Booster Pump Station.** In the immediate and near-term phases, the Proposed Project/Action will use a new storage tank located at the Easterly WWTP to store up to 2.5-MG of recycled water prior to distribution. However, as shown on Figure 4, the Proposed Project/Action includes a new 1.5-MG storage tank and booster pump station for the long-term phase and would be located on an approximately 110- by 160-foot parcel adjacent to the Green Tree Development on the east side of Leisure Town Road and would deliver recycled





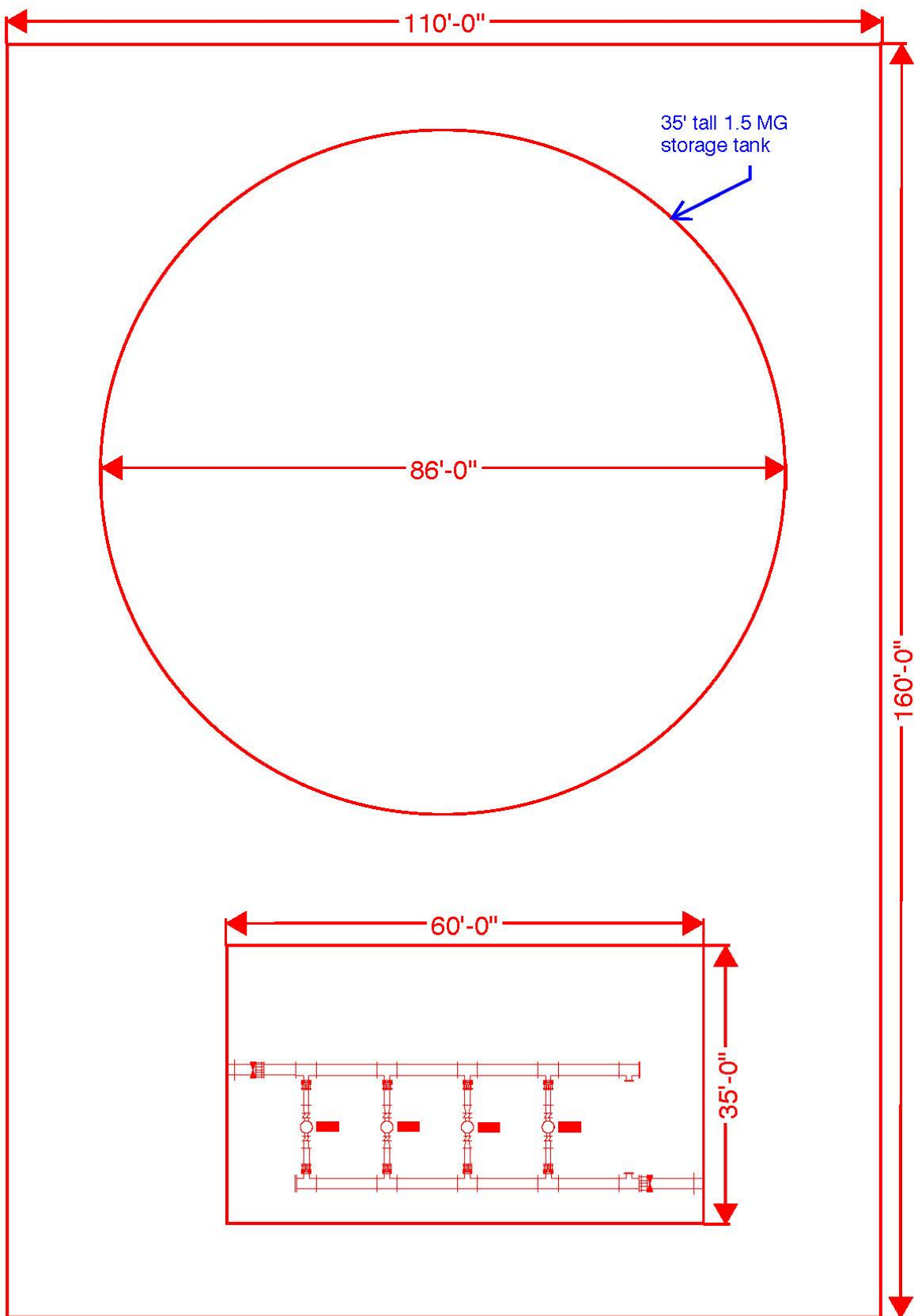


Figure 4
Off-Site Water Storage Tank and
Booster Pump Station Layout

water flows to customers north of I-80. The Proposed storage tank would be an above ground steel tank located on a parcel with approximate dimensions of 35-feet high and 86-feet in diameter and would store water for long-term phase customers located north of I-80. The new 150-hp booster pump station will be used to help minimize overall pumping energy costs and serve customers in the long-term phase.

2.2 Project Construction

The Proposed Project is expected to begin in the summer of 2021 and continue over approximately a 2-year period and ending in 2023. Construction work will typically be done within normal working hours, weekdays between the hours of 7 a.m. and 7 p.m., and possibly on Saturdays between the hours of 8 a.m. and 5 p.m. The Proposed Project/Action would be constructed primarily within existing paved and unpaved roadways and any damages occurring during construction will be returned to the pre-construction condition or better. Detailed below is a summary of the construction techniques and activities.

- The majority of the pipelines would be installed using conventional cut and cover construction techniques and installing pipe in open trenches. It is assumed that up to a 12-foot wide construction corridor would be used to help maximize the efficiency during construction. However, in most places a 3-to-5-foot construction corridor could be realized, especially for the smaller diameter pipelines. It is anticipated that excavation would typically be no more than 3-5 feet wide and 3-to-6-feet deep.
- All creeks, drainages, wetlands, and/or riparian areas will be avoided and/or will be crossed using trenchless construction techniques³. All construction activities will occur will not occur during rainy weather and during the months between October 15 and through April 1.
- Dewatering of the pipeline as a result of hydrostatic testing during construction as well as any dewatering as a result of operations and maintenance activities shall be discharged to land and not into any creeks, drainages, or waterways and shall require prior approval from the Central Valley Regional Water Quality Control Board (Central Valley RWQCB).

Construction activities for this kind of project will typically occur with periodic activity peaks, requiring brief periods of significant effort followed by longer periods of reduced activities. In order to characterize and analyze potential construction impacts, the City has assumed that each phase of the project would be constructed by two (2) crews of 10-to-15 workers each and would proceed at a rate of approximately 500-to 1,000-feet per day. However, specific details may change or vary slightly. Staging areas for storage of pipe, construction equipment, and other materials would be placed at locations that would minimize hauling distances and long-term disruption.

Excavation and grading activities would be necessary for construction of the Proposed Project/Action. Excavated materials resulting from site preparation would either be used on-site during construction or disposed of at a fill area authorized by the City. It is not anticipated that any soils would be imported for this project. Additional truck trips would be necessary to deliver materials, equipment, and asphalt-concrete to the site. During peak excavation and earthwork activities, the Proposed Project/Action could generate up

³ Trenchless technology is a type of subsurface construction work that requires few trenches or no continuous trenches. It is a rapidly growing sector of the construction and civil engineering industry. Trenchless technology can be defined as "a family of methods, materials, and equipment capable of being used for the installation of new or replacement or rehabilitation of existing underground infrastructure with minimal disruption to surface traffic, business, and other activities." Trenchless construction includes such construction methods as tunneling, micro-tunneling (MTM), horizontal directional drilling (HDD) also known as directional boring, pipe ramming (PR), pipe Jacking (PJ), moling, horizontal auger boring (HAB) and other methods for the installation of pipelines and cables below the ground with minimal excavation. Large diameter tunnels such as those constructed by a tunnel boring machine (TBM), and drilling and blasting techniques are larger versions of subsurface construction. The difference between trenchless and other subsurface construction techniques depends upon the size of the passage under construction. Trenchless construction requires considering soil characteristics and the loads applied to the surface. In cases where the soil is sandy, the water table is at shallow depth, or heavy loads like that of urban traffic are expected, the depth of excavation has to be at a depth such that the pressure of the load on the surface does not affect the bore, otherwise there is danger of surface caving in.

to 40 round-trip truck trips per day. In support of these activities and for the assumptions for this document, the types of equipment that may be used at any one-time during construction may include, but not limited to:

- Track-mounted excavator
- Backhoe
- Grader
- Crane
- Dozer
- Compactor
- Trencher/boring machine
- End and bottom dump truck
- Front-end loader
- Water truck
- Flat-bed delivery truck
- Forklift
- Compressor/jack hammer
- Asphalt paver & roller
- Street sweeper

It is recognized that details of the construction activities and methods may change slightly as the specific details will be developed during final design and by the selected contractor. However, this description provides sufficient information to base the conclusions to probable environmental impacts associated with construction activities for this kind of project. Therefore, as long as the construction methods are generally consistent with these methods and do not conflict with any of the City's design standards or established ordinances, and does not create any new potential environmental impacts that are not described within this document, then no new environmental analyses will likely be required for any minor change in construction activities, timing, and/or schedule.

2.3 Facility Operations and Maintenance

The recycled water treatment and conveyance system will be operated by existing City operations and maintenance staff. The system will operate 24 hours per day and 7 days per week and produce an average of 2,830 afy. It is anticipated that the irrigation schedule for urban irrigation users will occur 8 hours a day, from 9 PM to 5 AM and direct agricultural and industrial users will receive water on a 24 hours per day schedule. Operation and maintenance of the proposed facilities are not anticipated to increase the number of permanent workers or employees.

2.4 Compliance with CCR Title 22 and State Board's Recycled Water Policy

The Proposed Project/Action will be designed and operated in accordance with the applicable requirements of CCR Title 22 and any other state or local legislation that is currently effective or may become effective as it pertains to recycled water. The State Board adopted a Recycled Water Policy (RW Policy) in 2009 to establish more uniform requirements for water recycling throughout the State and to streamline the permit

application process in most instances. As part of that process, the State Board prepared an Initial Study and Mitigated Negative Declaration for the use of recycled water. The newly adopted RW Policy includes a mandate that the State increase the use of recycled water over 2002 levels by at least 1,000,000 afy by 2020 and by at least 2,000,000 afy by 2030. Also included are goals for storm water reuse, conservation and potable water offsets by recycled water. The onus for achieving these mandates and goals is placed both on recycled water purveyors and potential users. The State Board has designated the Regional Water Quality Control Boards as the regulating entities for the Recycled Water Policy. In this case, the Central Valley Regional Water Quality Control Board (Central Valley RWQCB) is responsible for permitting recycled water projects throughout the Central Valley Area, including the City of Vacaville.

The Proposed Project will provide high quality unrestricted use tertiary treated recycled water and make it available to users within the City. All irrigation systems will be operated in accordance with the requirements of Title 22 of the CCR, the State Board Recycled Water Policy, and any other local legislation that is effective or may become effective as it pertains to recycled water and any reclamation permits issued by the Central Valley RWQCB. Reclamation permits typically require the following:

- Irrigation rates will match the agronomic rates of the plants being irrigated;
- Control of incidental runoff through the proper design of irrigation facilities;
- Implementation of a leak detection program to correct problems within 72 hours or prior to the release of 1,000 gallons whichever occurs first;
- Management of ponds containing recycled water to ensure no discharges; and
- Irrigation will not occur within 50-feet of any domestic supply wells, unless certain conditions have been met as defined in Title 22.

2.5 Responsible Agencies, Permits and Approvals

Table 2-4 summarizes the potential permits and/or approvals that may be required prior to the construction of the Proposed Project/Action. Additional approvals and permits may also be required.

Table 2-4 Potential Permits and Approvals	
Agency/Entity	Type of Approval
California Department of Transportation (Caltrans)	<ul style="list-style-type: none">• Encroachment Permit – Crossing I-80
California Division of Occupational Safety and Health (CAL/OSHA)	<ul style="list-style-type: none">• Construction activities in compliance with CAL/OSHA safety requirements
Solano County	<ul style="list-style-type: none">• Encroachment Permit – Solano County Roads
City of Vacaville	<ul style="list-style-type: none">• Encroachment Permit – City of Vacaville Roads
Central Valley Regional Water Quality Control Board	<ul style="list-style-type: none">• National Pollutant Discharge Elimination System General Permit for Stormwater Discharge• Associated with Construction Activities Updated Recycled Water Use Permit

2.6 No Project/Action Alternative

Under the No Project/Action Alternative, the City'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 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 analysis compares the Proposed Project/Action to the No Project/Action alternative.

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 the 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. This document compares the Proposed Project/Action against the No Project/Action Alternative as is required by CEQA.

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 requirements.

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.

- | | | |
|---|--|---|
| <input checked="" type="checkbox"/> Aesthetics | <input checked="" type="checkbox"/> Hazards/Hazardous Materials | <input checked="" type="checkbox"/> Population and Housing |
| <input checked="" type="checkbox"/> Agriculture Resources | <input checked="" type="checkbox"/> Hydrology / Water Quality | <input checked="" type="checkbox"/> Recreation |
| <input checked="" type="checkbox"/> Air Quality | <input checked="" type="checkbox"/> Land Use / Planning | <input checked="" type="checkbox"/> Socioeconomics |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Mineral Resources | <input checked="" type="checkbox"/> Transportation/Traffic |
| <input checked="" type="checkbox"/> Cultural Resources | <input checked="" type="checkbox"/> Noise | <input checked="" type="checkbox"/> Tribal Cultural Resources |
| <input checked="" type="checkbox"/> Geology / Soils | <input checked="" type="checkbox"/> Public Services | <input checked="" type="checkbox"/> Utilities and Service Systems |
| | <input checked="" type="checkbox"/> 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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. The construction activities of the Proposed Project/Action would not substantially interfere with views of any scenic 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. Designated scenic highways and routes are intended to protect and enhance the scenic beauty of the highways, routes and adjacent corridors. Designation ensures that new development projects along recognized scenic corridors are designed to maintain the route's scenic potential. 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. Therefore, no impacts are anticipated and no specific mitigation measures are required.
- (c) **Less-than-Significant Impact with Mitigation.** Construction of the Proposed Project/Action's facilities would be visible and would involve temporary negative aesthetic effects, including open trenches as well as the presence of construction equipment and materials. As the construction of the new Proposed Project/Action facilities would be temporary and are considered to be less-than-significant. Once built, the new pipeline facilities would be buried underground and not visible and therefore would not have any significant visual impacts. Similarly, the new proposed pump station and water truck filling station would be inside the Easterly WWTP, which is an entirely fenced facility and thus would not have any visual impacts to any sensitive receptors and thus would not have any adverse significant visual impacts. The new off-site storage tank, however, would be above ground and 35-feet tall and could have potentially significant visual impacts. Therefore, the following mitigation measures are proposed.

Mitigation Measure AES-1: Implement Architectural Features into Facility Design.

The City shall implement architectural features into the facility design so they complement the building styles of the community and minimize visual mass. Exterior finishes should avoid reflective surfaces. Colors for larger visible tanks and structures shall be darker earth tones to reduce contrast with the ground plain and increase compatibility with the visual setting. Primary structures shall combine multiple complementary colors such in ranges of browns, tans, greys, greens, or other colors agreed upon with the appropriate permitting agency.

Mitigation Measure AES-2: Implement Effective Fencing/Shielding. The City shall design fencing to be minimally intrusive to the community yet complementary to the architectural character of the facility and the community. Fencing will be coordinated with landscaping and facility design to help further enhance the local aesthetics and to blend the facility with the surrounding community and/or natural setting. Vegetative screening using native plants, trees or shrubs will be used if it is not out of character with the site setting, and walled perimeters will be avoided in natural settings to minimize the dominance of structures in the scene.

With the incorporation of the following mitigation measures, any potentially significant visual impacts could be reduced to less-than-significant levels.

- (d) **Less-than-Significant Impact with Mitigation.** The Proposed Project/Action would not be constructed during nighttime hours and once constructed, there would be no lights or other sources of significant light or glare. However, the Proposed Project/Action's off-site water storage tank and pump station would require lighting for security and safety that could create a new source of substantial light or glare that could adversely affect day or nighttime views in the area. Therefore, the following mitigation measures are proposed.

Mitigation Measure AES-3: Respectful and Effective Lighting. To ensure that the project's exterior lighting does not spill over onto the adjacent uses, all exterior light fixtures, including street lighting, shall be shielded or directed away from adjoining uses. Outdoor light intensity shall be limited to that necessary for adequate security and safety. All outside lighting shall be directed to prevent spillage onto adjacent properties and shall be shown on the site plan and elevations.

With the incorporation of the following mitigation measures, any potentially significant visual impacts could be reduced to less-than-significant levels.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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's pipeline facilities would be located primarily within existing or planned paved roadways to serve existing agricultural irrigation needs and planned urban development within the Project area - consistent with the City's 2015 General Plan. The Proposed Project/Action's off-site water storage tank and pump station and the new pump station and water truck filling station at the Easterly WWTP would not convert any farmland to non-agricultural usage. As a result, the Proposed Project/Action in and of itself 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's pipeline facilities would be located primarily within existing or planned paved roadways to serve existing agricultural irrigation needs and planned urban development within the Project area - consistent with the City's 2015 General Plan. The Proposed Project/Action's off-site water storage tank and pump station and the new pump station and water truck filling station at the Easterly WWTP would not convert any farmland to non-agricultural usage. As a result, the Proposed Project/Action in and of itself would not convert any farmland to non-agricultural usage and would not conflict with a Williamson Act Contract. No mitigation is required or necessary.
- (c) **No Impact.** As mentioned above, the Proposed Project/Action's pipeline facilities would be located primarily within existing or planned paved roadways to serve existing agricultural irrigation needs and planned urban development within the Project area - consistent with the City's 2015 General Plan. The Proposed Project/Action's off-site water storage tank and pump station and the

new pump station and water truck filling station at the Easterly WWTP would not convert any farmland to non-agricultural usage. As a result, the Proposed Project/Action in and of itself would not convert any farmland to non-agricultural usage. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Conflict with an application plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- (a) **Less-than-Significant Impact.** The Proposed Project/Action is located within the jurisdiction of the Yolo-Solano Air Quality Management District (YSAQMD), the regional agency empowered to regulate air pollutant emissions from stationary sources in the Yolo County and the northeast portion of Solano County Area. YSAQMD regulates air quality through its permit authority over most types of stationary emission sources and through its planning and review process. Construction and/or operation of the Proposed project/Action would not conflict, violate, and/or obstruct YSAQMD's Air Quality Plan. The Proposed Project/Action could accommodate population growth because the Project would provide recycled water, making potable supplies more available, and thus increasing the overall supply of water. However, the addition of up to 2,830 acre-feet of recycled water for irrigation and industrial uses within the City would not significantly result in any increased growth or development. Any impacts are considered to be less-than-significant. No mitigation is required or necessary.

- (b) **Less-than-Significant Impact with Mitigation.** The YSAQMD has established thresholds of significance for several criteria air pollutants associated with both the construction and operation of projects. Specifically, a project is considered to have a significant regional air quality impact if it would result in an increase in emissions of 55 pounds per day or 10 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 summer of 2020 and continue into 2022 and would include excavation and grading activities. Overall construction work would require the use of various types of mostly diesel-powered equipment, including bulldozers, 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 pipeline construction were generated using the Sacramento Metropolitan Air Quality Management District's i.e. URBEMIS Construction Emissions Model (See Appendix A). Please note that this model was used because it has been recommended by YSAQMD. The URBEMIS Construction Emissions Model is a Microsoft Excel worksheet available to assess the emissions of linear 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 5 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 YSAQMD's daily and project/year thresholds. This estimate assumes the worst-case scenario where the maximum pipeline length and the largest storage tank would be built. As shown in Table 5, the Proposed Project/Action's construction emissions would exceed YSAQMD's daily and/or annual significance threshold for NO_x.

Table 5					
Estimated Proposed Project/Action Construction Emissions					
Construction Phase	Construction Emissions (lbs/day)				
	ROG	CO*	NO _x	PM ₁₀	PM _{2.5} **
Grubbing/Land Clearing	5.8	36.6	34.6	2.7	1.7
Grading/Excavation	10.5	70.9	82.8	5.0	3.8
Drainage/Utilities/Subgrade	8.7	61.7	64.4	4.1	3.0
Paving	6.0	42.5	37.6	2.0	1.7
Maximum (lbs/day)**	10.5	70.9	82.8	5.0	3.8
Total Tons Project/ Year	2.3	15.8	17.1	1.1	0.8
YSAQMD's Thresholds of Significance					
Pounds per Day	55	550	55	80	80
Tons per Project/Year	10	100	10	15	15
Potentially Significant Impact?	No	No	Yes	No	No
Notes					
* YSAQMD does not have a specific threshold for CO; defers to state regulation. ** YSAQMD 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.					

YSAQMD'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 reduced to less-than-significant levels.

Mitigation Measure AIR-1: Basic Air Quality Construction Mitigation Measures. 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 the 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.
- The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) 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.
- Use low volatile organic compounds (VOC) (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).
- Requiring that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NOx and PM.
- Requiring 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 the Proposed Project/Action's operations would be associated with primarily regular maintenance and inspection work. YSAQMD does not have any specific criteria for operations for these kinds of projects. Operational impacts would be negligible and well below the less-than-significant impacts of the construction impacts and 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 Area. As such, further general conformity analysis is not required.

- (c) **Less-than-Significant Impact with Mitigation.** The YSAQMD 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 ROG, NOx, and PM₁₀. However, construction activities would be temporary and would only exceed YSAQMD's thresholds of significance for NOx. Further, with the implementation of **Mitigation Measure AIR-1 and AIR-2**, as identified above, these less-than-significant impacts would be further reduced.

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 YSAQMD guidelines. See Table 5 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 Proposed Project/Action would not result in substantial emissions of any criteria air pollutants either during construction or operation. Therefore, the Proposed Project/Action 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 reduced and considered to 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. In addition, the use of recycled water would not produce any objectionable odors. Therefore, odor impacts would be less-than-significant. No specific mitigation measures are required.
- (f) **Less-than-Significant Impact with Mitigation.** YSAQMD does not have an adopted threshold of significance for construction and/or operational-related GHG emissions for projects like this. Operation of the Proposed Project/Action is not expected to generate any significant amounts of GHG emissions. During construction of the Proposed Project/Action, the various diesel-powered vehicles and equipment in use on-site could generate greenhouse gas emissions. Specifically, the Proposed Project/Action would exceed YSAQMD's threshold for NO_x, which is an indicator for generating GHG emissions. YSAQMD's approach to analyses of construction impacts as noted in their YSAQMD CEQA Guidelines is to emphasize implementation of effective and comprehensive basic construction control measures rather than detailed quantification of emissions. As a result, 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

	<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, 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)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

The Proposed Project/Action would be primarily constructed in a rural area with a mix of existing agricultural, residential, and commercial uses in and around the area. Wildlife corridors in the vicinity of the Proposed Project/Action area include the Pacific Flyway, a common route of bird migration that extends along the west coast of North America from Alaska to South American, and from the Eastern Pacific to the Great Basin, as well as a terrestrial wildlife corridor consisting of a narrow band of riparian woodland bordering Alamo Creek adjacent to the northern boundary of the project site. Terrestrial habitat types within

the Proposed Project/Action include: nonnative grassland, nonnative blackberry, agriculture, and ruderal/disturbed areas. Aquatic habitat types within the project site include: basins and roadside ditches.

Appendix B provides an analysis of the potential for the Proposed Project/Action to adversely affect both federal and state listed special status species in order to satisfy the requirements for CEQA-Plus and the federal resource agencies. As provided in Appendix B, 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. In addition, a field visit of the pipeline alignment was conducted on July 25, 2019 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 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. No special-status species were observed during the field visits. Table 6 provides a summary of the potential for state and federal special status species to occur within the Proposed Project/Action Study Area. Figure 5 shows the location of known state and federal listed species within the Project/Action Area.

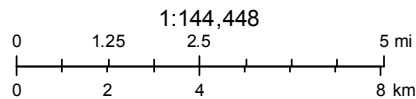
- (a) **Less-than Significant Impact with Mitigation.** The Proposed Project/Action would be primarily constructed in a rural area with a mix of existing agricultural, residential, and commercial uses in and around the area. The potential exists that construction activities could have an adverse effect, 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.

As provided in Appendix B, a review of the CDFW's CNDDDB and USFWS' Species List and indicates that there are three (3) critical habitats wholly or partially in the Proposed Project/Action Area. These include: Contra Costa Goldfields (*Lasthenia conjugens*), Vernal Pool Fairy Shrimp (*Branchinecta lynchi*), and Vernal Pool Tadpole Shrimp (*Lepidurus packardii*). In addition, and as provided in Table 6, there are potentially 12 federal and/or state special status listed species that may be present in the Proposed Project/Action area. Specifically, there are numerous mature trees within and adjacent to the proposed construction activities which could affect special status bird species. Special Status bird species were not observed to be present in the Project Study Area, but they have a moderate potential to occur within the area. Mature trees can serve as perching or nesting sites for migratory birds, including raptors, and their removal can adversely affect breeding behavior. Special Status bird species, including migratory birds 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, Proposed Project/Action facilities would cross and be located adjacent to several drainage ditches and could affect special status plant, amphibian, and invertebrate species. As such the following mitigation measures are proposed.

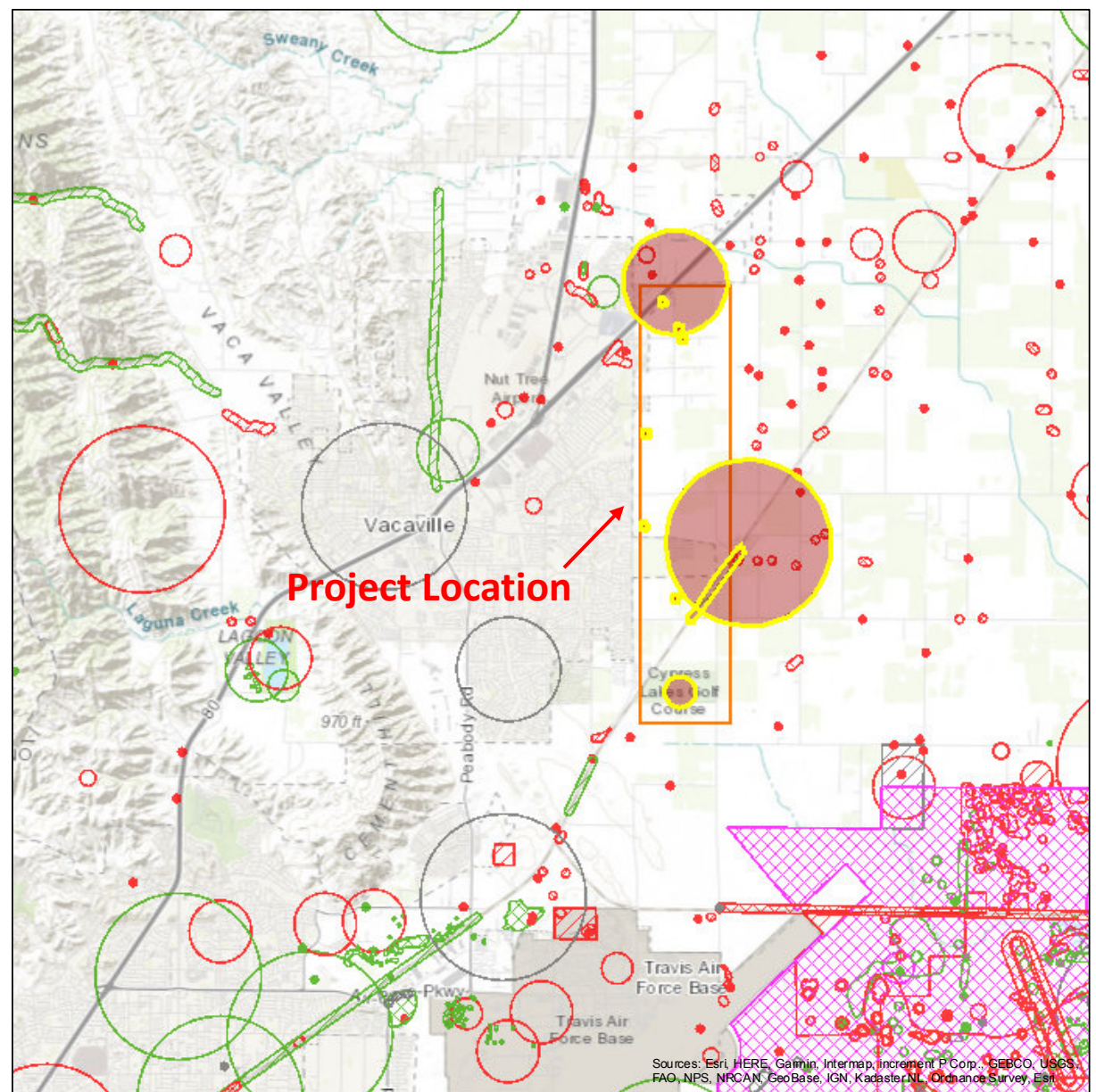
Mitigation Measure BIO-1: Conduct Breeding and Nesting Surveys. For construction activities that occur between February 1 and August 31, preconstruction breeding bird surveys shall be conducted by a qualified biologist prior to and within 10-days of any initial ground-disturbance activities. Surveys 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 white-tailed kite and golden eagle nests. The following considerations apply to this mitigation measure:

California Natural Diversity
Database (CNDDB) Commercial
[ds85]

- Plant (80m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)
- Terrestrial Comm. (80m)
- Terrestrial Comm. (specific)
- Terrestrial Comm. (non-specific)
- Terrestrial Comm. (circular)
- Aquatic Comm. (80m)
- Aquatic Comm. (specific)
- Aquatic Comm. (non-specific)
- Aquatic Comm. (circular)
- Multiple (80m)
- Multiple (specific)
- Multiple (non-specific)
- Multiple (circular)
- Sensitive EO's (Commercial only)



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- 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.

Table 6 Potential for Special-Status Species to Occur in the Proposed Project Study Area				
Species	Status	Habitat	Potential for Occurrence	Recommendations
Plants				
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	List 1B.2	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 cordulata</i> Heartscale	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>Atriplex parishii</i> Brittlescale	List 1B.2	Uncommon species of saltbush. Plant of saline and alkaline soils like in dry lakebeds and vernal pools.	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> Papoose tarplant	List 1B.2	Located in salt marshes with brackish water	Unlikely. Suitable habitat not present in Study Area.	No further actions are recommended for this species.
<i>Chloropyran molle</i> Hispid salty bird's-beak	List 1B.1	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>Delphinium recurvatum</i> Recurved larkspur	List 1B.2	Grasslands of the Central Valley have been mostly claimed for development and agriculture, so this species is now uncommon.	Unlikely. Suitable habitat not present in Study Area.	No further actions are recommended for this species.
<i>Downingia pusilla</i> dwarf downingia	List 2B.2	Vernal lake and pool margins in valley and foothill grasslands. 1-485 m. Blooms March-May.	Unlikely. No suitable habitat occurs within the Study Area.	No further actions are recommended for this species.
<i>Extriplex joaquiniana</i> San Joaquin spearscale	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>Fritillaria pluriflora</i> Adobe-lily	List 1B.2	A rare California species limited to northern California.	Unlikely. Suitable habitat for this species does not occur in the Study Area.	No further actions are recommended for this species.
<i>Isocoma arguta</i> <i>Carquinez golden bush</i>	List 1B.1	Rare and thrives on alkali flats and other mineral-rich soils.	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, List 1B.1	Mesic sites in cismontane woodland, alkaline playas, valley and foothill grassland. Vernal pools, swales, or low depressions. 1-445 m. Blooms March-June.	Moderate. Project Study Area overlaps known critical habitat.	Conduct pre-construction surveys to determine actual presence.

Table 6
Potential for Special-Status Species to Occur in the Proposed Project Study Area

Species	Status	Habitat	Potential for Occurrence	Recommendations
<i>Legenere limosa</i> legenere	List 1B.1	In beds of vernal pools. 1-880 m. Blooms April-June.	Unlikely. No suitable habitat occurs within the Study Area.	No further actions are recommended for this species.
<i>Navarretia leucocephala</i> Baker's navarretia	List 1B.1	An uncommon subspecies limited- <u>endemic</u> to California north of the <u>Bay Area</u>	Unlikely. No suitable habitat occurs within the Study Area.	No further actions are recommended for this species.
<i>Orcuttia inaequalis</i> <i>San Joaquin Valley Orcutt Grass</i>	FT, SE List 1B.1	Occurs in vernal pools, which are wetlands that have standing water in the winter and early spring, and then progressively dry in the later spring and summer.	Unlikely. No suitable habitat occurs within the Study Area.	No further actions are recommended for this species.
<i>Northern Vernal Pool</i> Northern Vernal Pool	None	Are temporary pools of water that provide habitat for distinctive plants and animals. They are considered to be a distinctive type of <u>wetland</u> usually devoid of fish, and thus allow the safe development of natal amphibian and insect species unable to withstand competition or predation by fish.	Moderate. Project Study Area overlaps known critical habitat.	Conduct pre-construction surveys to determine actual presence.
<i>Plagiobothrys hystriculus</i> Bearded popcorn flower	List 1B.1	Annual herb that is believed to be extinct.	Unlikely. No suitable habitat occurs within the Study Area.	No further actions are recommended for this species.
<i>Puccinellia simplex</i> California alkaligrass	List 1B.2	Grows in <u>mineral springs</u> and other moist habitat with <u>saline soils</u> in the <u>Central Valley</u>	Unlikely. No suitable habitat occurs within 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 occurs within the Study Area.	No further actions are recommended for this species.
<i>Trifolium amoenum</i> Showy Indian Clover	FE, List 1B.1	Coastal bluff scrub, valley and foothill grassland, open sunny sites, swales. Sometimes on serpentine soils, roadsides, or eroding cliff face. 5-560 m. Blooms April-June.	Unlikely. Believed to be extirpated from Napa County (CNDDDB 2008).	No further actions are recommended for this species.
<i>Trifolium depauperatum</i> var. <i>hydrophilum</i> saline clover	List 1B.2	Mesic, alkaline sites in valley and foothill grassland, vernal pools, marshes and swamps. 0-300 m. Blooms April-June.	Unlikely. No suitable habitat occurs within the Study Area.	No further actions are recommended for this species.
Mammals				
<i>Taxidea taxus</i> American Badger	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats,	Unlikely. No suitable habitat is present in the Study Area.	No further actions are recommended for this species.

Table 6
Potential for Special-Status Species to Occur in the Proposed Project Study Area

Species	Status	Habitat	Potential for Occurrence	Recommendations
		with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.		
Birds				
<i>Agelaius tricolor</i> Tricolored Blackbird	SSC	Usually nests over or near freshwater in dense cattails, tules, or thickets of willow, blackberry, wild rose or other tall herbs.	Moderate. Proposed construction could extend into the breeding/nesting season (February 1 and August 31).	If construction does occur within the breeding/nesting season (February 1 and August 31) conduct pre-construction surveys.
<i>Ammodramus savannarum</i> Grasshopper sparrow	List 1B.2	Forage on the ground in vegetation, mainly eating insects, especially grasshoppers and seeds.	Moderate. Proposed construction could extend into the breeding/nesting season (February 1 and August 31).	If construction does occur within the breeding/nesting season (February 1 and August 31) conduct pre-construction surveys.
<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.	Moderate. Proposed construction could extend into the breeding/nesting season (February 1 and August 31).	If construction does occur within the breeding/nesting season (February 1 and August 31) conduct pre-construction surveys.
<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.	Moderate. Proposed construction could extend into the breeding/nesting season (February 1 and August 31).	If construction does occur within the breeding/nesting season (February 1 and August 31) conduct pre-construction surveys.
<i>Elanus leucurus</i> White-tailed kite	FP	Common in the Central Valley and readily seen patrolling or hovering over lowland scrub or grassland looking for rodents.	Moderate. Proposed construction could extend into the breeding/nesting season (February 1 and August 31).	If construction does occur within the breeding/nesting season (February 1 and August 31) conduct pre-construction surveys.
<i>Rallus longirostris obsoletus</i> California Clapper Rail	FE, SE	Found in tidal salt marshes of the San Francisco Bay. Requires mudflats for foraging and dense vegetation on higher ground for nesting.	Moderate. Proposed construction could extend into the breeding/nesting season (February 1 and August 31).	If construction does occur within the breeding/nesting season (February 1 and August 31)

Table 6
Potential for Special-Status Species to Occur in the Proposed Project Study Area

Species	Status	Habitat	Potential for Occurrence	Recommendations
				conduct pre-construction surveys.
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 limited in the Study Area.	No further actions are recommended for this species.
<i>Clemmys 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.	Moderate. This species has the potential to occur within the Project Study Area.	Conduct pre-construction survey.
<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. No suitable habitat occurs within the Study Area.	No further actions are recommended for this species.
<i>Rana boylei</i> Foothill yellow-legged frog	FSC, SCT, SSC	Occur in the Coast Ranges from the <u>Santiam River</u> in Marion County, <u>Oregon</u> south to the <u>San Gabriel River</u> in Los Angeles County and along the west slopes of the Sierra/Cascade mountain ranges in most of central and northern California.	Unlikely. No suitable habitat occurs within 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. No suitable habitat occurs within the Study Area.	No further actions are recommended for this species.
Invertebrates				
<i>Branchinecta conservatoria</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.	Moderate. Project Study Area overlaps known critical habitat.	Conduct pre-construction surveys to determine actual presence.
<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	Unlikely. No elderberry shrubs were identified in the Study Area and suitable habitat is not present.	No further actions are recommended for this species.

Table 6 Potential for Special-Status Species to Occur in the Proposed Project Study Area				
Species	Status	Habitat	Potential for Occurrence	Recommendations
		elderberry stems greater than 1" in diameter.		
<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>Lepidurus packardii</i> , Vernal pool tadpole shrimp	FE	Lives in the endangered vernal pool type of habitat, and other freshwater aquatic habitats including ponds, reservoirs, ditches, road ruts, and other natural and artificial temporary water bodies.	Moderate. Project Study Area overlaps known critical habitat.	Conduct pre-construction surveys to determine actual presence.
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.	Moderate. Suitable habitat is present in the Study Area.	Conduct pre-construction surveys to determine actual presence.
Key to status codes: FE Federal Endangered FT Federal Threatened FC Federal Candidate FD Federal De-listed FP Federal Proposed FPD Federal Proposed for De-listing FPT Federal Proposed Threatened FSC Federal Species of Concern 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 SP State Proposed SSC CDFW Species of Special Concern Draft SSC 4 April 2000 Draft CDFG Species of Special Concern CFP CDFW 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)				

- 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.
- 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.

Mitigation Measure BIO-2: Conduct A Preconstruction Survey for Special Status Wildlife Species. The City shall have a qualified biologist conduct a pre-construction survey for state and federal special status wildlife species no more than 10-days prior to construction. A combination of visual and trapping surveys may be performed with authorization from CDFW and/or USFWS. If a wildlife special species is found near any proposed construction areas, impacts on individuals and their habitat shall be avoided to the extent feasible. If occupied habitat can be avoided, an exclusion zone shall be established around the habitat and temporary suitable/authorized fencing shall be installed around the buffer area with “Sensitive Habitat Area” signs posted and clearly visible on the outside of the fence. If avoidance is not possible and the species is determined to be present in work areas, the biologist with approval from CDFW and/or USFWS may capture the wildlife special status species prior to construction activities and relocate them to nearby, suitable habitat a minimum of 300-feet from the work area. Exclusion fencing shall then be installed if feasible to prevent them from reentering the work area. For the duration of work in these areas, the biologist should conduct regular follow-up visits to monitor effectiveness.

Mitigation Measure BIO-3: Staging Areas and Access Routes. When possible, staging and access areas will be situated at the Easterly WWTP and/or in areas that are previously disturbed, such as developed areas, paved areas, parking lots, areas with bare ground or gravel, and areas clear of vegetation. When working on habitats that support state and/or federally listed species, disturbance to existing grades and vegetation will be limited to the actual site of the Proposed Project/Action and necessary access routes. Placement of all roads, staging areas, and other facilities will avoid and limit disturbance-sensitive habitats (e.g., riparian habitat, suitable habitats) as much as possible. All staging and material storage areas, including the locations where equipment and vehicles are parked overnight, will be placed outside of the flood zone of a watercourse, away from riparian habitat or wetland habitat, and away from any other sensitive habitats.

Mitigation Measure BIO-4: Environmental Awareness Training. All construction personnel shall be given environmental awareness training by the Proposed Project’s environmental inspector or biological monitor before the start of construction. The training will familiarize all construction personnel with the federally listed species that may occur in the Action Area, their habitats, general provisions and protections afforded by the Endangered Species Act, measures to be implemented to protect these species, and the project boundaries. This training will be provided to any new worker before they are authorized to perform project work. As part of the environmental awareness training, construction personnel will be notified that no dogs or any other pets under control of

construction personnel will be allowed in the Project/Action Area, and that no firearms will be permitted in the Action Area, unless carried by authorized security personnel or law enforcement.

Mitigation Measure BIO-5: Biological Monitor. As required, a CDFW and/or USFWS-approved Biological Monitor will be present on site for all construction activities that occur within 100-feet of any identified suitable habitats for state and/or federally listed species that may be present during the construction of the Proposed Project/Action. The City will submit the Biological Monitor's qualifications to the CDFW and the USFWS for approval 30-days prior to project construction. The Biological Monitor will ensure that all applicable avoidance and minimization measures are implemented during project construction. The Biological Monitor will also ensure that all vehicles entering the site are free of debris that may harbor organisms that could be introduced to the site, such as vegetation or mud from other areas. The Biological Monitor will also ensure that turbidity, sedimentation, and the release of materials such as dust or construction runoff are controlled, and that spill control measures are enacted properly. The Biological Monitor will oversee construction activities to ensure that no state or federally listed species and/or their habitats experience unintended effects. The Biological Monitor will have the authority to stop any work activities that could result in unintended adverse effects to covered species and/or their habitats.

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

Once constructed, the Proposed Project/Action would not adversely affect any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW and USFWS. No additional mitigation measures are required.

- (c) **Less-than-Significant Impact with Mitigation.** Construction of the Proposed Project/Action could 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 described in Section 2 – Project Description, any and all creeks, drainages, wetlands, and/or riparian areas will be avoided and/or will be crossed using trenchless construction techniques. All construction activities will occur will not occur during rainy weather and during the months between October 15 and through April 1. Further, with the implementation of **Mitigation Measures BIO-1 through BIO-5** identified above, any potential impacts would be reduced to less-than-significant levels. No additional mitigation measures are required.

Once constructed, the Proposed Project/Action would not adversely affect riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS. No additional mitigation measures are required.

- (d) **Less-than-Significant Impact with Mitigation.** The Proposed Project/Action would not likely 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 are no identified or known wetlands in the Proposed Project/Action area and the Proposed Project/Action facilities would be located in paved roads or previously disturbed areas. In addition, and as described in Section 2 – Project Description, any and all creeks, drainages, wetlands, and/or riparian areas will be avoided and/or will be crossed using trenchless construction techniques. All construction activities will occur will not occur during rainy weather and during the months between October 15 and through April 1. Further, with the implementation of **Mitigation Measures BIO-1 through BIO-5** identified above, any potential

impacts would be reduced to less-than-significant levels. No additional mitigation measures are required.

Once constructed, the Proposed Project/Action would not adversely affect 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. No additional mitigation measures are required.

- (e) **Less-than-Significant Impact with Mitigation.** The Proposed Project/Action would not likely substantially interfere with the movement of any native resident or migratory fish or wildlife corridors, or impede the use of native wildlife nursery sites. The USFWS, CDFW, and/or the National Marine Fisheries Service (NMFS) have not designated any critical habitat within the Project Study Area. However, construction activities could adversely affect special status and non-listed special-status nesting raptors and migratory birds. Many 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 raptor nests. Because all 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. However, with the implementation of **Mitigation Measures BIO-1 through BIO-5**, these potential impacts would be reduced to less-than-significant levels.

Once constructed, the Proposed Project/Action would not interfere with the movement of any native resident or migratory fish or wildlife corridors, or impede the use of native wildlife nursery sites. No additional mitigation measures are required.

- (f) **No Impact.** The construction and/or operation of the Proposed Project/Action would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. The Proposed Project/Action would not require the removal of any trees. As a result, no impact is expected and no specific mitigation is required.
- (g) **No Impact.** The construction and/or operation of 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. Specifically, the Proposed Project would not conflict with the City's 2015 General Plan and the Solano County Multispecies 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

On April 11, 2019, the Northwest Information Center completed a record search (NWIC File No.: 18-1921 for the proposed project area. The NWIC, an affiliate of the State of California Office of Historic Preservation, is the official state repository of archaeological and historic records and reports for a 16-county area that includes Solano County.

The records search and literature review for this study were done to (1) determine whether known cultural resources have been recorded within or adjacent to the study area and determine if the project site has been subject to survey in the past; (2) assess the likelihood of unrecorded cultural resources based on archaeological, ethnographic, and historical documents and literature; and (3) to review the distribution of nearby archaeological sites in relation to their environmental setting.

Sources reviewed include the California Inventory of Historical Resources (California Office of Historic Preservation), the California Office of Historic Preservation's Five Views: An Ethnic Historic Site Survey for California, California Historical Landmarks, California Points of Historical Interest, and the Historic Properties Directory Listing for Solano County. The Historic Properties Directory includes the National Register of Historic Places, the California Register of Historical Resources, and the most recent listings of the California Historical Landmarks and California Points of Historical Interest.

The records search revealed that Most of the Proposed Project/Action area have been previously subject to a cultural resources study. Specifically, fifteen previous cultural resources studies have examined most of the Proposed project/Action area. However, it appears that Leisure Town Road between Elmira Road and Orange Drive have not been previously surveyed. The records search revealed that five cultural resources are present within the Project Area:

- **P-48-000178** is Leisure Town Road, which forms the eastern boundary of Vacaville along much of its length. The road was found ineligible for the National Register in 1997 (Corbett and Minor 1996).
- **P-48-000409** (SOL-362H) is a historic-period trash deposit discovered during investigations for the EIR for Kaiser Vacaville Medical Center in 1992 (Derr and Washington 1992). The deposit is not eligible to NRHP.
- **P-48-000549** (CA-SOL-499H) is the Southern Pacific Railroad Sacramento to Benicia line. The proposed project will not affect this railroad line, which is now operated by the Union Pacific.
- **P-48-001025** is the Vaca Valley Railroad Route historic district, which includes the route of the Vaca Valley Railroad (1870-1877), later the Vaca Valley & Clear Lake Railroad (1878-1886) before being acquired by the Southern Pacific in 1886. This resource was found ineligible for NRHP due to its lack of integrity (Far Western 2014, 2017).
- **P-48-001852** is the Byrnes Canal, an offshoot of the Putah South Canal. Completed in 1962, it is an earth-lined drainage channel with concrete sluice gates. It was found ineligible for NRHP in 2017 (Webb and Algaier 2017).

The records search also revealed that in 1997, a pedestrian survey of approximately 40-acres was conducted as part of the environmental review of the Vacaville Easterly Wastewater Treatment Plant Expansion Project. The study was confined to the existing Easterly WWTP facilities and resulted in the identification of a single isolated obsidian flake (P-419) located on the north bank of the Solano Irrigation District Canal, outside of the current project area. Based upon the location and condition of the isolated artifact, it was concluded that the specimen had been removed from its original place of deposition by modern ground disturbing activities associated with the construction of the canal and motor vehicle operation. No other cultural resources were identified. In addition, the Easterly WWTP site was surveyed again in 2009 as part of the Easterly WWTP Tertiary Project and No archeology, cultural, and/or tribal resources were identified.

Given the environmental setting, it is considered possible that prehistoric archaeological deposits could be found as part of the construction of the Proposed Project/Action. However, it is highly unlikely due to the high level of ground disturbance within the project area resulting from construction and operation of the EWWTP, disking, as well as historic and modern agricultural practices of the surrounding area.

Due to the fact that the Easterly WWTP is a highly disturbed site which has been studied numerous times and previous construction and operations have not revealed anything of substance, the focus of this cultural resource investigation was focused on the areas not previously surveyed. Specifically, a pedestrian archaeological survey of the pipeline alignment and facilities was conducted on January 29th and 30th, 2020. The archaeological survey began at the Easterly WWTP and both sides of the roads in which the proposed pipeline will be placed, and the proposed storage tank and pump station locations were surveyed. Special emphasis was placed on the area(s) along Leisure Town Road, which has not been previously surveyed.

The Proposed Project/Action area includes a variety of soils, the largest units of which are the Capay silty clay loam, Capay Clay, and Yolo Loam, all of which are moderately well-drained alluvial soils formed in the early to middle Holocene era (11,700-3,000 years ago). Two perennial creeks run through the project area: Alamo Creek crosses the project area at Leisure Town Road south of Elmira Road in an artificial channel that is over ½ mile south of its historic stream course. Ulati Creek crosses the project area at Leisure Town Road between Hawkins and Maple Roads. Areas of Holocene soils near creeks can be considered generically sensitive for buried archaeological resources; the area around Ulati Creek meets this definition.

All proposed facility locations were surveyed in 10-meter transects. 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. Surface visibility varied between little ground surface, due to dense grasses and pavement (WWTP), to complete surface visibility in areas of bare soil (disked landscaping perimeter and southern field on the property). The ground surface was examined for archaeological remains, while rodent burrow backdirt piles and road cuts were examined for indicators of buried archaeological deposits. The survey found that the project site has been subject to significant historic and modern disturbances including past agricultural use in open areas, landscaping, paving, and installation of underground infrastructure. No archeology, cultural, and/or tribal resources were discovered during the January 2020 survey. A more complete analysis is provided in Appendix C.

- (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 Proposed Project/Action 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. 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 City 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 City 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 would not result in impacts to archeological resources.

- (c) **Less-than-Significant Impact with Mitigation.** Paleontological 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 area. Also, because the Proposed Project would result in minimal excavation in bedrock conditions, significant paleontological discovery would be unlikely. However, fossil discoveries can be made even in areas of supposed low sensitivity. In the event a paleontological 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 City.

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

- (d) **Less-than-Significant Impact with Mitigation.** There are no known burial sites within the specific Project Construction 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.

With the implementation of the above mitigation measure, the Proposed Project/Action would not result in any significant impacts to human remains.

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:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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. 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 with Mitigation.** 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 would involve excavation, moving, filling, and the temporary stockpiling of soil. Earthwork associated with development construction could expose soils to erosion. As a result, the following mitigation is proposed as a precautionary measure:

Mitigation Measure GEO-1: Erosion and Sedimentation Prevention Procedures. The District will prepare an Erosion Control Plan. The Erosion Control Plan will detail the erosion and sedimentation prevention measures to be implemented. As part of this plan, the Subrecipient will ensure that sediment-control devices are installed and maintained correctly. For example, sediment will be removed from engineering controls once the sediment has reached one-third of the exposed height of the control. The devices will be inspected frequently (i.e., daily or weekly, as necessary) to ensure that they are functioning properly; controls will be immediately repaired or replaced, or additional controls will be installed as necessary. Sediment that is captured in these controls may be disposed of on site in an appropriate, safe, approved area; or off site at an approved disposal site. Areas of soil disturbance, including temporarily disturbed areas, will be seeded with a regionally appropriate erosion control seed mixture. On soil slopes with an angle greater than 30 percent, erosion control blankets will be installed or a suitable and approved binding agent will be applied. Runoff will be diverted away from steep or denuded slopes. Where habitat for federally listed species is identified in, or adjacent to, the project footprint, all disturbed soils at the site will undergo erosion control treatment before the rainy season starts and after construction is terminated. Treatment may include temporary seeding and sterile straw mulch.

With the incorporation of this mitigation measure, any resulting impacts would be considered to be 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 may have a high susceptibility to liquefaction during seismic shaking. 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-2: Perform Geotechnical Investigation. The City shall require a design-level geotechnical study/investigation 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-2** 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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 City 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.

Mitigation Measure HAZ-3: Properly Dispose of Hydrostatic Test Water. Dewatering of the pipeline during hydrostatic testing during construction, as well as any dewatering as a result of operations and maintenance activities, shall be discharged to land or the sanitary sewer system and not into any creeks, drainages, or waterways and shall require prior approval from the Central Valley Regional Water Quality Control Board.

- (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, with the incorporation of **Mitigation Measure HAZ-1** identified above, any potential impacts are considered to be less-than-significant. 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) **Less-than-Significant Impact.** Construction of portions of the pipeline segments of the Proposed Project/Action would be located within one-quarter mile and would serve recycled water to several schools for irrigation purposes. Although construction activities would require the use of some hazardous materials, due to the short duration and limited extent of construction activity, the potential for accidental release of hazardous materials associated with construction activities to affect nearby school children would be considered less-than-significant. Once constructed, the Proposed Project/Action would provide recycled water for irrigation and would not have any adverse impacts to any schools. No mitigation is required.
- (d) **Less than Significant Impact with Mitigation.** 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. However, a records search was conducted using the State of California Department of Toxic Substance Control's Envirostor Database and GIS mapping system and there are identified hazardous waste or materials within the Proposed Project/Action Area. See website

at <http://www.envirostor.dtsc.ca.gov/public/>. However, the Proposed Project/Action pipeline alignment does not appear to pass through any identified hazardous wastes sites or materials. In addition, with the incorporation of **Mitigation Measure HAZ-2**, any potential impacts would be reduced to less than significant levels.

- (e) **No Impact.** The Proposed Project/Action is not located within two miles of an airport. The Proposed Project/Action would be located approximately 5-miles away from the Travis Air Force Base to the south and 4-miles away from the Nut Tree Airport to the northwest. The new storage tank and all other Proposed Project/Action facilities would be less than 50-feet high and 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. Further, the Proposed Project would not involve any activities that would attract wildlife and waterfowl over existing conditions. As such, construction and/or operation of the Proposed Project/Action would not adversely affect any 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 impacts are anticipated. No specific mitigation is required.
- (f) **No Impact.** The Proposed Project/Action is not located within two miles of an airport. The Proposed Project/Action would be located approximately 5-miles away from the Travis Air Force Base to the south and 4-miles away from the Nut Tree Airport to the northwest. The new storage tank and all other Proposed Project/Action facilities would be less than 50-feet high and 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. Further, the Proposed Project would not involve any activities that would attract wildlife and waterfowl over existing conditions. As such, construction and/or operation of the Proposed Project/Action would not adversely affect any 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 impacts are anticipated. No specific mitigation is required.
- (g) **Less-than-Significant Impact with Mitigation.** The operation of 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. However, when installing the pipelines in the existing roadways, construction activities associated with the Proposed Project/Action could block access to nearby roadways for emergency vehicles, which could be considered a potentially significant effect. However, with the incorporation of the following mitigation, any potential impacts are considered to be less-than-significant.

Mitigation Measure HAZ-4: Develop and Maintain Emergency Access Strategies. In conjunction with *Mitigation Measure Traffic-1: Develop a Traffic Control Plan* identified below in the Traffic and Transportation section, comprehensive strategies for maintaining emergency access shall be developed. Strategies shall include, but not limited to, maintaining steel trench plates at the construction sites to restore access across open trenches and identification of alternate routing around construction zones. Also, police, fire, and other emergency service providers shall be notified of the timing, location, and duration of the construction activities and the location of detours and lane closures.

- (h) **Less-than-Significant Impact with Mitigation.** Construction of the Proposed Project/Action would 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-5 Fire Prevention and Control: The City 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 City 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 City 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 City or its contractor shall immediately use resources necessary to contain the fire. The City 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.

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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality? (erosion potential)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) Inundation of seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- (a) **Less-than-Significant Impact with Mitigation.** Excavation, grading, and construction activities associated with the Proposed Project/Action could violate water quality as those activities would 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 would 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 water quality. With the incorporation of the following mitigation measures, any potential impacts to water quality as a result of construction are reduced to less-than-significant levels.

Mitigation Measure HWQ-1: Implement Construction Best Management Practices.

To reduce potentially significant erosion and siltation, the City and/or its selected contractor(s) shall obtain a Stormwater Pollution Prevention Permit (SWPPP) and implement Best Management Practices and erosion control measures as required by the Central Valley RWQCB. Best Management Practices to reduce erosion and siltation shall include the following measures: Avoidance of construction activities during inclement weather; limitation of construction access routes and stabilization of access points; stabilization of cleared, excavated areas by providing vegetative buffer strips, providing plastic coverings, and applying ground base on areas to be paved; protection of adjacent properties by installing sediment barriers or filters, or vegetative buffer strips; stabilization and prevention of sediments from surface runoff from discharging into storm drain outlets; use of sediment controls and filtration to remove sediment from water generated by dewatering; and returning all drainage patterns to pre-existing conditions.

Mitigation Measure HWQ-2: Avoid Cutting Through Creeks/Drainages.

As described in the Proposed Project/Action description, all creek and drainage crossings will be crossed by using trenchless technologies such as micro tunneling, directional drilling, or suspending the pipeline on the downstream side of a bridge. Construction crews shall avoid entering the stream channels during installation. With these mitigation measures in place, the Proposed Project/Action is unlikely to have a direct and/or indirect adverse effect on water quality standards and/or waste discharge requirements. Once constructed, the operation and maintenance of the Proposed Project/Action will not adversely affect water quality standards and/or waste discharge requirements.

In addition, the operation of the Proposed Project/Action and application of recycled water for irrigation on landscape will increase salts and nutrient loadings on the soils that could result in significant impacts to adjacent surface and groundwater resources. The City's potable water supply consists of two surface water sources and 11 deep groundwater wells. Lake Berryessa surface water, conveyed through Putah South Canal (PSC), provides approximately 26% of the City's total consumption of water, and Sacramento Delta surface water, from the North Bay Aqueduct (NBA), provides an additional 42%. Groundwater from the 11 deep wells make up the balance (32%) of the City's water needs. Treatment of the surface water is divided between the Vacaville Water Treatment Plant (VWTP) and the North Bay Regional Water Treatment Plant (NBR). The VWTP treats PSC source water only, while the NBR plant, which is jointly owned by the cities of Vacaville and Fairfield, treats both PSC and NBA source water. The City's groundwater resources have an average TDS level of approximately 370 parts per million (ppm) and the City's surface water supplies from both sources each have an average TDS level of approximately 200

ppm⁴. For comparison analysis purposes, the City's combined potable water supply has an average TDS level of approximately 250 ppm (i.e. 254 ppm).

The Proposed Project/Action would offset 2,830 afy of the City's water supply with tertiary treated recycled water for irrigation purposes. The proposed new recycled water supply has an average TDS level of approximately 610 ppm⁵ which would result in an approximately 240 percent increase in salt loading for the 2,830 afy of water to be used for irrigation purposes. However, 610 ppm would still be well within the Maximum Contaminant Level (MCL) of 1,000 ppm that is allowed in drinking water.

Further, it is assumed that with proper irrigation best management practices, recycled water operations would have an 80 percent irrigation efficiency, meaning that 80 percent of the applied recycled water would be lost through evapotranspiration and the remaining 20 percent of the flow would percolate through the root zone. All of the applied salts are assumed to remain with the 20 percent flow and would eventually percolate into the groundwater as a result of winter rains. The increased salt loading would result in approximately 1,387 tons of salts added to the groundwater basin per year⁶. However, in context to the overall groundwater basin, this incremental increase is not considered to be a significant impact and would be blended with winter rain - reducing the salinity concentration. Also, recycled water has higher amounts of nitrogen, phosphorus, and potassium than potable supplies. Thus, recycled water would help alleviate the need to use fertilizers that are more readily applied if potable supplies are used for irrigation and which are not accounted for in its and this TDS calculation(s). Further, with the implementation of the following recycled water best management practices, any of these impacts can be further reduced and remain to be less-than-significant.

Mitigation Measure HWQ-3: Implement Recycled Water Best Management Practices. In order to help reduce the potential effects of increased salt loading potential as a result of using recycled water, the City⁷ shall:

- Apply water consistent with Title 22 requirements and in amounts (frequency and intensity) which meet the demands of the plant (agronomic rates), but not in excessive amounts such that salts buildup in the soil beyond the root zone and/or otherwise are leached to groundwater;
- Ensure that adequate soil drainage is maintained;
- Ensure that salt-sensitive plants (e.g. Colonial bentgrass) are not to be spray wet;
- Replace salt-sensitive plants with salt-tolerant plants (e.g. Bermudagrass);
- Addressing sodium and alkalinity concerns through addition of water and soil amendments, including addition of gypsum; and
- Comply with the State Board's General Waste Discharge Requirements of Recycled Water Use (Water Quality Order 2014-0090).

With the implementation of **Mitigation Measures HWQ-1, HWQ-2, and HWQ-3**, any water quality impacts as a result of the use of recycled water will be reduced to less-than-significant levels. No additional mitigation measures or demineralization facilities would be required.

⁴ City of Vacaville. 2018 Annual Water Quality Report.

⁵ City of Vacaville, Easterly Wastewater Treatment Plant Monthly Effluent Reports from December 2017 through January 2019.

⁶ 2,830 afy = 4,622,333 cubic yards, 610 ppm = 0.0000514094 tons/cubic yards, 254 ppm = 0.000214065 tons/cubic yards, and 356 ppm = 0.00300029 tons/cubic yards.

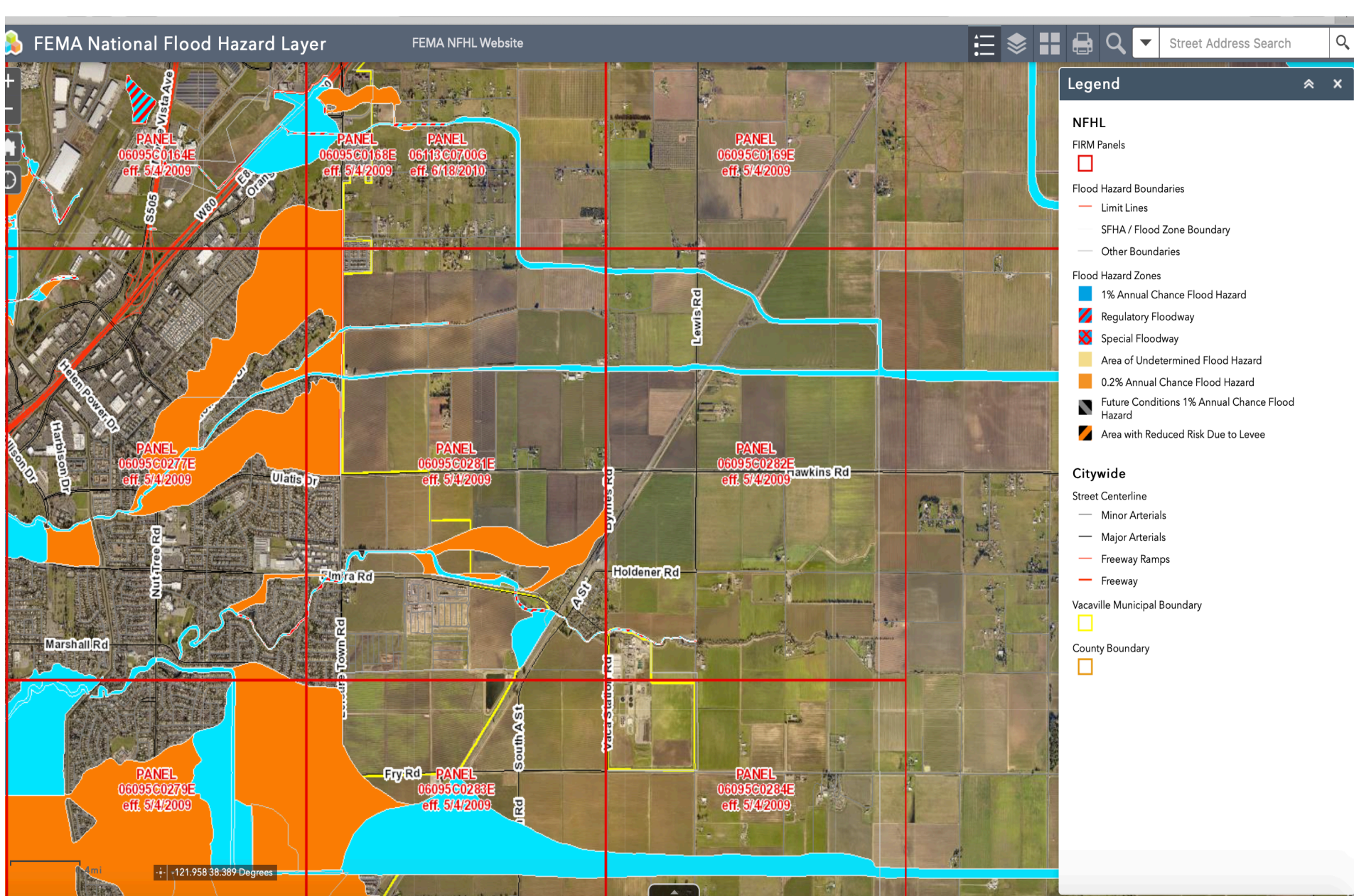
⁷ Many of these measures may be implemented by the customer through a Customer Services Agreement and verified and enforced by the City.

Also, the Proposed Project/Action would remove approximately 2,830 afy or approximately 2.5 mgd of the City's 7.5 mgd wastewater effluent and associated pollutants from being discharged to Old Alamo Creek, which is a tributary to New Alamo Creek, which is a tributary to Ulati Creek, which eventually outlets to Cache Slough and the Sacramento-San Joaquin River Delta (Delta). This approximately 34 percent reduction in discharge would generally represent a beneficial impact to the Old and New Alamo Creeks as well as to the Cache Slough and the Delta. However, the quantity of this reduction is so small in comparison to the Delta, that it is essentially unnoticeable and not measurable by any practical standards. Further, this reduction in flow would not violate any water quality standards or wastewater discharge requirements.

- (b) **No Impact.** Construction and/or operation of the Proposed Project/Action would not 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. The Project/Action site is located within Solano Groundwater Subbasin, within the larger Sacramento Valley Groundwater Basin, as delineated in the California Department of Water Resources (DWR) Bulletin 118 (DWR, 2004). Groundwater levels in the main water bearing formation of Solano Subbasin are generally between 60 feet above and 130 below ground surface level (DWR, 2004). DWR well data (Monitoring well 06N01E31A001M located 0.5 miles south of the project site) indicates that average groundwater levels dramatically increased between 1960 and 1980 by roughly 25-feet. Between 1980 and 2006, groundwater levels in the project area have fluctuated around an average of 10-feet below ground surface elevation (DWR, 2009). Recharge of the groundwater basin occurs from surface water and precipitation infiltration. Operation of the Proposed Project would help offset groundwater pumping for irrigation and would have a beneficial impact to the Solano Groundwater Subbasin. Construction of the proposed pipeline facilities would be done primarily within existing roadways and subsurface excavation would be limited to 3- to 6-feet below surface elevation and would not interfere with groundwater supplies. Construction of the above ground 1.5 MG storage tank and proposed pumping stations would not adversely affect groundwater supplies. Therefore, no adverse impacts to groundwater resources are anticipated and no mitigation is required.
- (c) **Less-than-Significant Impact with Mitigation.** 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 of siltation on- or off-site. With the implementation of **Mitigation Measure HWQ-1**, above, the Proposed Project/Action would not significantly alter any existing drainage areas.
- (d) **Less-than-Significant Impact with Mitigation.** 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. With the implementation of **Mitigation Measures HWQ-1, HWQ-2, and HWQ-3**, above, the Proposed Project/Action would not significantly alter any existing drainage areas.
- (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. The Proposed Project/Action would be located primarily within existing roadways. The Proposed Project/Action would be returned to pre-construction conditions and would not increase the impervious surfaces and therefore would not create new areas of low permeability. Construction of the pump station and water truck at the existing Easterly WWTP would not create a new impervious surface as the Easterly WWTP is fully paved and developed. The construction of the new above ground off-site storage and pump station facilities would be located on an approximately 110- by 160-foot parcel adjacent to the Green Tree

Development on the east side of Leisure Town Road and would create a new, but very small impervious surface, which is not considered to be a significant impact. In addition, any additional run-off would be treated on-site at the Easterly WWTP. As a result, no significant additional runoff will 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) **Less-than-Significant Impact with Mitigation.** The Proposed Project/Action would not substantially affect water quality. As discussed earlier, the construction of the Proposed Project/Action could result in minor, temporary, and highly localized soil erosion and siltation issues. However, with the incorporation of **Mitigation Measure HWQ-1, HWQ-2, and HWQ-3** above, potential impacts to water quality would be reduced to less-than-significant levels.
- (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.** As shown on Figure 6, the Proposed Project/Action would generally not place exposed structures within a 100-year flood hazard area. The pipeline facilities would be located underground and the new above ground facilities would be located out of the 100-year flood hazard area. City standards require floor elevations of new development within the floodplain to be at least one foot above the 100-year flood height and/or prohibit development within the floodway (generally, the stream channel required to carry the 100-year flood waters). No impact is expected and no mitigation is required or necessary.
- (i) **Less-than-Significant Impact.** The Proposed Project/Action would consist of a single new 1.5 MG storage tank. The tank is located above ground and a failure could expose people or structures to potential flooding. However, due to the fact that it will be designed to current earthquake standards, the relatively small volume of water stored, and the lack of permanent structures or people located immediately down slope of the site, this is considered to be a less than significant impact. 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. Tsunamis are a series of waves typically produced by an offshore earthquake, volcanic eruption, or landslide. A tsunami with a wave height of 20-feet at the Golden Gate Bridge in San Francisco, California, which is likely to occur approximately once every 200 years and is approximately 60 miles away, would not affect the City or the Project Study Area. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- (a) **No Impact.** The Proposed Project/Action would not physically divide an established community. 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 not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project area. In fact, the City has developed strategic plans and policies to encourage the use of recycled water. Specifically, the Proposed Project/Action is consistent with the City's General Plan and Energy & Conservation Action Strategy, Measure WW-1F (see page 5-81 of the ECAS for more detail). Therefore, no impacts are anticipated and no mitigation is required.
- (c) **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. As stated above, the Proposed Project/Action would be constructed within existing roadways within the City. For this reason, 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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.** As discussed in (a) above, 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- (a) **Less-than-Significant Impact with Mitigation.** The Proposed Project/Action has the potential to generate noise during the construction phase through the use of equipment and construction vehicle trips. Construction of the Proposed Project/Action would generate temporary and intermittent noise. Noise levels would fluctuate depending on the particular type, number, and duration of use of various pieces of construction equipment. Back-up beepers associated with trucks and equipment used for material loading and unloading at the staging areas and along the whole pipeline alignment would generate significantly increased noise levels over the ambient noise environment in order to be discernable and protect construction worker safety as required by OSHA (29 CFR 1926.601 and 29 CFR 1926.602). Residences and/or businesses in the vicinity of the staging areas and along the whole pipeline alignment would thus be exposed to these elevated noise levels.

Construction activities associated with the Proposed Project/Action would be temporary in nature and related noise impacts would be short-term. However, since construction activities could

substantially increase ambient noise levels at noise-sensitive locations, construction noise could result in potentially significant, albeit temporary, impacts to sensitive receptors. Compliance with the City noise ordinance and implementation of the following mitigation measures is expected to reduce impacts related to construction noise, to a less-than-significant level. The following mitigation measures are proposed:

Mitigation Measure NOI-1: Limit Construction Hours. Construction activities will be limited to the least noise-sensitive times and will comply with the City's noise ordinances. Construction, alteration, and other related activities shall be allowed on weekdays between the hours of 7 a.m. and 7 p.m., and on Saturdays between the hours of 10 a.m. and 6 p.m. Construction activities shall not exceed the outdoor ambient sound level (dBA) of 86 dBA.

Mitigation Measure NOI-2: Locate Staging Areas Away from Sensitive Receptors. The City's construction specification shall require that the contractor select staging areas as far as feasibly possible from sensitive receptors. Currently, planned staging areas are at the City's Easterly WWTP.

Mitigation Measure NOI-3: Maintain Mufflers on Equipment. The City's construction specifications shall require the contractor to maintain all construction equipment with manufacturer's specified noise-muffling devices.

Mitigation Measure NOI-4: Idling Prohibition and Enforcement. The City shall prohibit and enforce unnecessary idling of internal combustion engines. In practice, this would mean turning off equipment if it will not be used for five or more minutes.

Mitigation Measure NOI-5: Equipment Location and Shielding. Locate all stationary noise-generating construction equipment such as air compressors and standby power generators as far as possible from homes and businesses. Also, the permanent pump station for the off-site storage tank shall be shielded so it does not generate any noise over the City's noise ordinance to any nearby and future residents and sensitive receptors.

With the incorporation of the above mitigation measures, noise impacts as result of construction-related activities of the Proposed Project/Action would be considered less-than-significant.

Once constructed, the Proposed Project/Action would not create any new sources of operational noise with the incorporation of **Mitigation Measure NOI-5**. Therefore, operation of the pipeline would not result in any significant noise impacts. No mitigation is required.

- (b) **Less-than-Significant Impact with Mitigation.** Operation of the Proposed Project/Action would not result in exposing people to or generating excessive groundborne vibration or noise impacts. Construction of the Proposed Project/Action could likely result in minor and temporary increases in groundborne vibration or noise. However, construction activities would be temporary. With the incorporation of **Mitigation Measures NOI-1 through NOI-5** impacts associated with the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels would be reduced to a less-than-significant level.
- (c) **Less-than-Significant Impact with Mitigation.** The operation of the Proposed Project/Action would not increase noise in and around the Project area. Once constructed, the operation of the facilities would not result in any additional significant noise with the implementation of **Mitigation Measure NOI-5**. 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) **Less-than-Significant Impact with Mitigation.** Project construction activities may lead to a temporary increase in ambient noise levels in the project vicinity above levels existing without the project. With the implementation of **Mitigation Measures NOI-1 through NOI-5** impacts resulting in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project would be reduced to a less-than-significant level.
- (e) **No Impact.** The Proposed Project/Action is not located within two miles of an airport. The Proposed Project/Action would be located approximately 5-miles away from the Travis Air Force Base to the south and 4-miles away from the Nut Tree Airport to the northwest. The new storage tank and all other Proposed Project/Action facilities would be less than 50-feet high and 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. Further, the Proposed Project would not involve any activities that would attract wildlife and waterfowl over existing conditions. As such, construction and/or operation of the Proposed Project/Action would not adversely affect any 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 impacts are anticipated. No specific mitigation is required.
- (f) **No Impact.** The Proposed Project/Action is not located within two miles of an airport. The Proposed Project/Action would be located approximately 5-miles away from the Travis Air Force Base to the south and 4-miles away from the Nut Tree Airport to the northwest. The new storage tank and all other Proposed Project/Action facilities would be less than 50-feet high and 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. Further, the Proposed Project would not involve any activities that would attract wildlife and waterfowl over existing conditions. As such, construction and/or operation of the Proposed Project/Action would not adversely affect any 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 impacts are anticipated. 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>
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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)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Displace substantial numbers of people necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Discussion

- (a) **No Impact.** The Proposed Project/Action would provide recycled water, making potable supplies more available, thus increasing the overall supply of water indirectly. However, as growth in the City is controlled by the General Plan, the new use of a recycled water supply as a result of the Proposed Project/Action is not expected to result in increased development. Therefore, the Project is not anticipated to substantially change existing water demands and induce population growth in the area. The Proposed Project/Action would be to serve portions of the City and surrounding areas with up to 2,830 afy of tertiary treated recycled water for urban and agricultural irrigation and industrial purposes. This would help supplement the City's current water supplies and reduce reliance on groundwater and its existing surface water supply resources, but would not be a sufficient supply to induce urban growth in the area over the City's planned buildout of the City's adopted 2015 General Plan. 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 within existing roadways and/or utility corridors within commercial, industrial, and residential zonings within the City. 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 primarily within existing roadways within the City. 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>
Would the Proposed Project/Action:				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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>
Would the Proposed Project/Action:				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with Executive Order 12898 (Environmental Justice) policies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Affect Indian Trust Assets?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- (a) **No Impact.** The Proposed Project/Action would not have any adverse socioeconomic effects. The Proposed Project/Action would involve the construction and operation of a recycled water system to supplement the City's water supplies. This would ensure a reliable, long-term water supply that would help support the existing and future irrigation activities within the City and surrounding areas, which would be considered a beneficial socioeconomic effect. The City 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 City would repay any loans by charging a fee to users for the use of the recycled water. It is assumed that the project costs would result in an increase in costs. However, the 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 City. 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 on minority populations and low-income populations of the United States. The Proposed Project/Action would involve the construction and operation of an expanded recycled water system to deliver supplemental water to the region to help enhance the existing irrigation practices within the City and encourage the use of recycled water in industrial processes. The Proposed Project/Action would primarily occur in a semi-rural urbanized area. 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 City 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 construction

areas of the Proposed Project/Action. 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)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

- (a) **Less-than-Significant Impact with Mitigation.** Construction would temporarily disrupt transportation and circulation patterns in the vicinity of the project thus disrupting local vehicle, bicycle, and pedestrian traffic along the haul routes and the planned pipeline alignment. Although construction-generated traffic would be temporary during peak excavation and earthwork activities, average daily truck trips would not likely exceed 20 round-trip truck trips per day. The primary impacts from the movement of trucks would include short-term and intermittent lessening of roadway capacities due to slower movements and larger turning radii of the trucks compared to passenger vehicles and temporary lane closures and possible detours during certain times. The following mitigation measures are proposed:

Mitigation Measure TRA-1: Prepare and Implement Traffic Control Plan. As is consistent with existing policy, the City shall require the contractor to prepare and implement effective traffic control plans to show specific methods for maintaining traffic flows. Examples of traffic control measures to be considered include: 1) use of flaggers

to maintain alternating one-way traffic while working on one-half of the street; 2) use of advance construction signs and other public notices to alert drivers of activity in the area; 3) use of “positive guidance” detour signing on alternate access streets to minimize inconvenience to the driving public; 4) provisions for emergency access and passage; and 5) designated areas for construction worker parking.

Mitigation Measure TRA-2: Return Roads to Pre-construction Condition. Following construction, the City shall ensure that road surfaces that are damaged during construction are returned to their pre-construction condition or better.

With the incorporation of the above mitigation measures, potential temporary impacts are considered to be less-than-significant.

- (b) **Less-than-Significant Impact with Mitigation.** As discussed above in (a), construction activities of the Proposed Project/Action may result in increased vehicle trips. This could temporarily exceed, either individually or cumulatively, existing level of service standards. However, the Proposed Project/Action would not result in any long-term degradation in operating conditions or level of service on any project roadways. With the implementation of **Mitigation Measure TRA-1** impacts associated with exceeding level of service standards would be reduced to a less-than-significant level.
- (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) **Less-than-Significant Impact with Mitigation.** The Proposed Project/Action would have 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. Implementation of **Mitigation Measure TRA-1** would require the contractor to establish methods for maintaining traffic flow in the project vicinity and minimizing disruption to emergency vehicle access to land uses along the truck route and/or pipeline alignment. Implementation of **Mitigation Measure TRA-1** would also ensure potential impacts associated with temporary effects on emergency access would be mitigated to a less-than-significant level.
- (f) **Less-than-Significant Impact.** Project-related construction activities would require additional parking for workers and equipment on a temporary basis. However, sufficient space exists within the construction easement and/or staging areas to accommodate parking needs for construction workers and equipment. Any short-term effects would be considered less-than-significant. As a result, no impacts are anticipated and no mitigation is required.
- (g) **Less-than-Significant 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. Any short-term effects would be considered less-than-significant.

3.17 Tribal 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>
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Would the Proposed Project/Action:

- a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
 - i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
 - ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

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Discussion

- a) **Less-than-Significant with Mitigation.** The Proposed Project would not cause a substantial adverse change in the significance of a known tribal cultural resource, as defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is either; (1) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k); and/or (2) is a resource determined by the District or its archeological consultant, in its discretion and supported by substantial

evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.

As documented in Appendix C, on March 27, 2019, a letter was sent to the Native American Heritage Commission (NAHC), requesting a listing of local Native American tribes in the area and any information regarding sacred lands within the area in order to be compliant with Assembly Bill 52 (AB52). On April 15, 2019 NAHC sent the District a list of the Native American Tribes to request a government-to-government consultation to determine the potential of the Proposed Project to affect Tribal Cultural Resources. On April 24, 2019 the City then sent a government-to-government letter to each Native American Tribe requesting consultation regarding how the Proposed Project could potentially affect any known tribal cultural resources. To date, none of the tribes have formally responded to the government-to-government consultation request and the 30-day AB-52 consultation has been completed. On May 3, 2019 one Tribe (Yocha Dehe Wintun Nation) did call and requested the shape files for the Proposed Project/Action's Pipeline Alignment. The shape files were sent to them on May 7, 2019. No other requests were made and the 30-day AB-52 consultation was completed on May 16, 2019.

In addition, and as documented in Section 3.5 - Cultural Resources, on April 11, 2019, the Northwest Information Center completed a record search (NWIC File No.: 18-1921 for the proposed project area. The NWIC, an affiliate of the State of California Office of Historic Preservation, is the official state repository of archaeological and historic records and reports for a 16-county area that includes Solano County.

The records search and literature review for this study were done to (1) determine whether known cultural resources have been recorded within or adjacent to the study area and determine if the project site has been subject to survey in the past; (2) assess the likelihood of unrecorded cultural resources based on archaeological, ethnographic, and historical documents and literature; and (3) to review the distribution of nearby archaeological sites in relation to their environmental setting.

Sources reviewed include the California Inventory of Historical Resources (California Office of Historic Preservation), the California Office of Historic Preservation's Five Views: An Ethnic Historic Site Survey for California, California Historical Landmarks, California Points of Historical Interest, and the Historic Properties Directory Listing for Solano County. The Historic Properties Directory includes the National Register of Historic Places, the California Register of Historical Resources, and the most recent listings of the California Historical Landmarks and California Points of Historical Interest.

The records search revealed that Most of the Proposed Project/Action area have been previously subject to a cultural resources study. Specifically, fifteen previous cultural resources studies have examined most of the Proposed project/Action area. However, it appears that Leisure Town Road between Elmira Road and Orange Drive have not been previously surveyed. The records search revealed that five cultural resources are present within the Project Area:

- **P-48-000178** is Leisure Town Road, which forms the eastern boundary of Vacaville along much of its length. The road was found ineligible for the National Register in 1997 (Corbett and Minor 1996).
- **P-48-000409** (SOL-362H) is a historic-period trash deposit discovered during investigations for the EIR for Kaiser Vacaville Medical Center in 1992 (Derr and Washington 1992). The deposit is not eligible to NRHP.
- **P-48-000549** (CA-SOL-499H) is the Southern Pacific Railroad Sacramento to Benicia line. The proposed project will not affect this railroad line, which is now operated by the Union Pacific.

- **P-48-001025** is the Vaca Valley Railroad Route historic district, which includes the route of the Vaca Valley Railroad (1870-1877), later the Vaca Valley & Clear Lake Railroad (1878-1886) before being acquired by the Southern Pacific in 1886. This resource was found ineligible for NRHP due to its lack of integrity (Far Western 2014, 2017).
- **P-48-001852** is the Byrnes Canal, an offshoot of the Putah South Canal. Completed in 1962, it is an earth-lined drainage channel with concrete sluice gates. It was found ineligible for NRHP in 2017 (Webb and Algaier 2017).

The records search also revealed that in 1997, a pedestrian survey of approximately 40-acres was conducted as part of the environmental review of the Vacaville Easterly Wastewater Treatment Plant Expansion Project. The study was confined to the existing Easterly WWTP facilities and resulted in the identification of a single isolated obsidian flake (P-419) located on the north bank of the Solano Irrigation District Canal, outside of the current project area. Based upon the location and condition of the isolated artifact, it was concluded that the specimen had been removed from its original place of deposition by modern ground disturbing activities associated with the construction of the canal and motor vehicle operation. No other cultural resources were identified. In addition, the Easterly WWTP site was surveyed again in 2009 as part of the Easterly WWTP Tertiary Project and No archeology, cultural, and/or tribal resources were identified.

Given the environmental setting, it is considered possible that prehistoric archaeological deposits could be found as part of the construction of the Proposed Project/Action. However, it is highly unlikely due to the high level of ground disturbance within the project area resulting from construction and operation of the EWWTP, disking, as well as historic and modern agricultural practices of the surrounding area.

Due to the fact that the Easterly WWTP is a highly disturbed site which has been studied numerous times and previous construction and operations have not revealed anything of substance, the focus of this cultural resource investigation was focused on the areas not previously surveyed. Specifically, a pedestrian archaeological survey of the pipeline alignment and facilities was conducted on January 29th and 30th, 2020. The archaeological survey began at the Easterly WWTP and both sides of the roads in which the proposed pipeline will be placed, and the three proposed storage tank and pump station locations were surveyed. Special emphasis was placed on the area(s) along Leisure Town Road, which has not been previously surveyed.

The Proposed Project/Action area includes a variety of soils, the largest units of which are the Capay silty clay loan, Capay Clay, and Yolo Loam, all of which are moderately well-drained alluvial soils formed in the early to middle Holocene era (11,700-3,000 years ago). Two perennial creeks run through the project area: Alamo Creek crosses the project area at Leisure Town Road south of Elmira Road in an artificial channel that is over ½ mile south of its historic stream course. Ulatris Creek crosses the project area at Leisure Town Road between Hawkins and Maple Roads. Areas of Holocene soils near creeks can be considered generically sensitive for buried archaeological resources; the area around Ulatris Creek meets this definition.

All proposed facility locations were surveyed in 10-meter transects. 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. Surface visibility varied between little ground surface, due to dense grasses and pavement (WWTP), to complete surface visibility in areas of bare soil (disked landscaping perimeter and southern field on the property). The ground surface was examined for archaeological remains, while rodent burrow back dirt piles and road cuts were examined for indicators of buried archaeological deposits. The survey found that the project site has been subject to significant historic and modern disturbances including past agricultural use in open areas, landscaping, paving,

and installation of underground infrastructure. No archeology, cultural, and/or tribal resources were discovered during the January 2020 survey. A more complete analysis is provided in Appendix C.

As a result, there are no tribal cultural resources that are known to exist within the Project area. Therefore, the Proposed Project is not likely to cause a substantial adverse change in the significance of known or unique tribal cultural resources. Nevertheless, there is always a chance that construction activities of the Proposed Project could result in accidentally discovering unique tribal cultural resources. However, to further reduce this less-than-significant impact, the following mitigation measures shall be implemented along with and in combination with the **Mitigation Measures: CR-1, CR-2, and CR-3** as identified in Section 3.5 - Cultural Resources:

Mitigation Measure TCR-1: Notify and Invite Local Native American Tribes to be Present During Project Construction Activities. The District shall notify and invite the UAIC and all of the identified Native American Tribes within the Project Area to be present during the construction of the Proposed Project. The Tribes would be responsible for their own expenses for any and all monitoring services performed by them.

Mitigation Measure TCR-2: Halt Work if Tribal Cultural Resources are Discovered. In the event that any tribal 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 and local tribes to assess the significance of the find. If any find is determined to be significant as a unique tribal cultural resource, the District shall treat the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including to, but not limited to, the following:

- Protecting the cultural character and integrity of the resource;
- Protecting the traditional use of the resource; and
- Protecting the confidentiality of the resource.

In considering any suggested mitigation proposed by the consulting archaeologist and/or the appropriate tribe in order to mitigate impacts to any tribal cultural resources find, the District shall determine whether avoidance is 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 and coordinated with the appropriate tribe(s). Work may proceed on other parts of the project site while mitigation measures for tribal cultural resources or other unique archaeological resources are carried out.

With the implementation of the above mitigation measure, the Proposed Project would not result in impacts to tribal cultural resources.

3.18 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- (a) **No Impact.** The Proposed Project/Action would not exceed wastewater treatment requirements of the Central Valley Regional Water Quality Control Board. Therefore, no impacts are anticipated and no mitigation is required.
- (b) **Less-than-Significant Impact.** The Proposed Project/Action would involve the construction of an expanded water recycling distribution system to serve the City. However, any impacts

associated with the construction and/or operations are considered to be less-than-significant 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) **Less-than-Significant Impact.** Under the Proposed Project/Action, the City will be receiving tertiary treated water from the Proposed Project/Action. This would be a new water supply, but would not require the City purchasing this new water supply. Any impacts are considered to be less-than-significant and no mitigation is required.
- (e) **No Impact.** Under the Proposed Project/Action the City will be expanding the City's existing recycled water distribution system. This would be a new water supply, but would not require the City purchasing this new water supply. The Proposed Project/Action will not result in any additional wastewater to be treated. The City currently treats and discharges approximately 7.5 mgd of tertiary treated form the wastewater streams received by the Easterly WWTP. The Proposed Project/Action would take 2.5 mgd or 2,830 afy of this tertiary treated wastewater effluent. This represents approximately 34 percent of the average daily water flow of 7.5 mgd that is currently discharged from the WWTP and use it to offset existing and planned future irrigation and industrial uses. The Proposed Project/Action will not result in any additional wastewater to be treated. Therefore, no impacts are anticipated 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.

3.19 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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 City of Vacaville's Recycled Water 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 City. 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

Fred Buder
Printed Name

10/1/2020

Date

Acting Director of Community Development
Title

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Appendix A

Air Quality Emissions Calculations

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> City of Vacaville - Recycled Water 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	5.8	36.6	34.6	2.7	1.7	1.0	1.7	1.5	0.2	5,972.0
Grading/Excavation	10.5	70.9	82.8	5.0	4.0	1.0	3.8	3.6	0.2	13,433.6
Drainage/Utilities/Sub-Grade	8.7	61.7	64.4	4.1	3.1	1.0	3.0	2.8	0.2	11,320.4
Paving	6.0	42.5	37.6	2.0	2.0	-	1.7	1.7	-	7,099.5
Maximum (pounds/day)	10.5	70.9	82.8	5.0	4.0	1.0	3.8	3.6	0.2	13,433.6
Total (tons/construction project)	2.3	15.8	17.1	1.1	0.8	0.2	0.8	0.7	0.0	2,903.4
Notes: Project Start Year -> 2020										
Project Length (months) -> 24										
Total Project Area (acres) -> 4										
Maximum Area Disturbed/Day (acres) -> 0										
Total Soil Imported/Exported (yd³/day)-> 10										
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 -> City of Vacaville - Recycled Water 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	2.6	16.6	15.7	1.2	0.8	0.5	0.8	0.7	0.1	2,714.6
Grading/Excavation	4.8	32.2	37.6	2.3	1.8	0.5	1.7	1.6	0.1	6,106.2
Drainage/Utilities/Sub-Grade	3.9	28.1	29.3	1.9	1.4	0.5	1.4	1.3	0.1	5,145.6
Paving	2.7	19.3	17.1	0.9	0.9	-	0.8	0.8	-	3,227.0
Maximum (kilograms/day)	4.8	32.2	37.6	2.3	1.8	0.5	1.7	1.6	0.1	6,106.2
Total (megagrams/construction project)	2.1	14.4	15.5	1.0	0.8	0.2	0.7	0.7	0.0	2,633.5
Notes: Project Start Year -> 2020										
Project Length (months) -> 24										
Total Project Area (hectares) -> 2										
Maximum Area Disturbed/Day (hectares) -> 0										
Total Soil Imported/Exported (meters³/day)-> 8										
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

Biological Resources Assessment Report

Biological Resources Assessment Report

City of Vacaville
Recycled Water Project

Prepared by:



SMB Environmental, Inc.

September 2020

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Section 1 - Introduction

This section describes the purpose of this assessment and identifies potential federal and state listed species and species of concern that could be affected by the implementation of the City of Vacaville's (City) proposed Recycled Water Project (Proposed Project/Action).

1.1 Project Location and Background

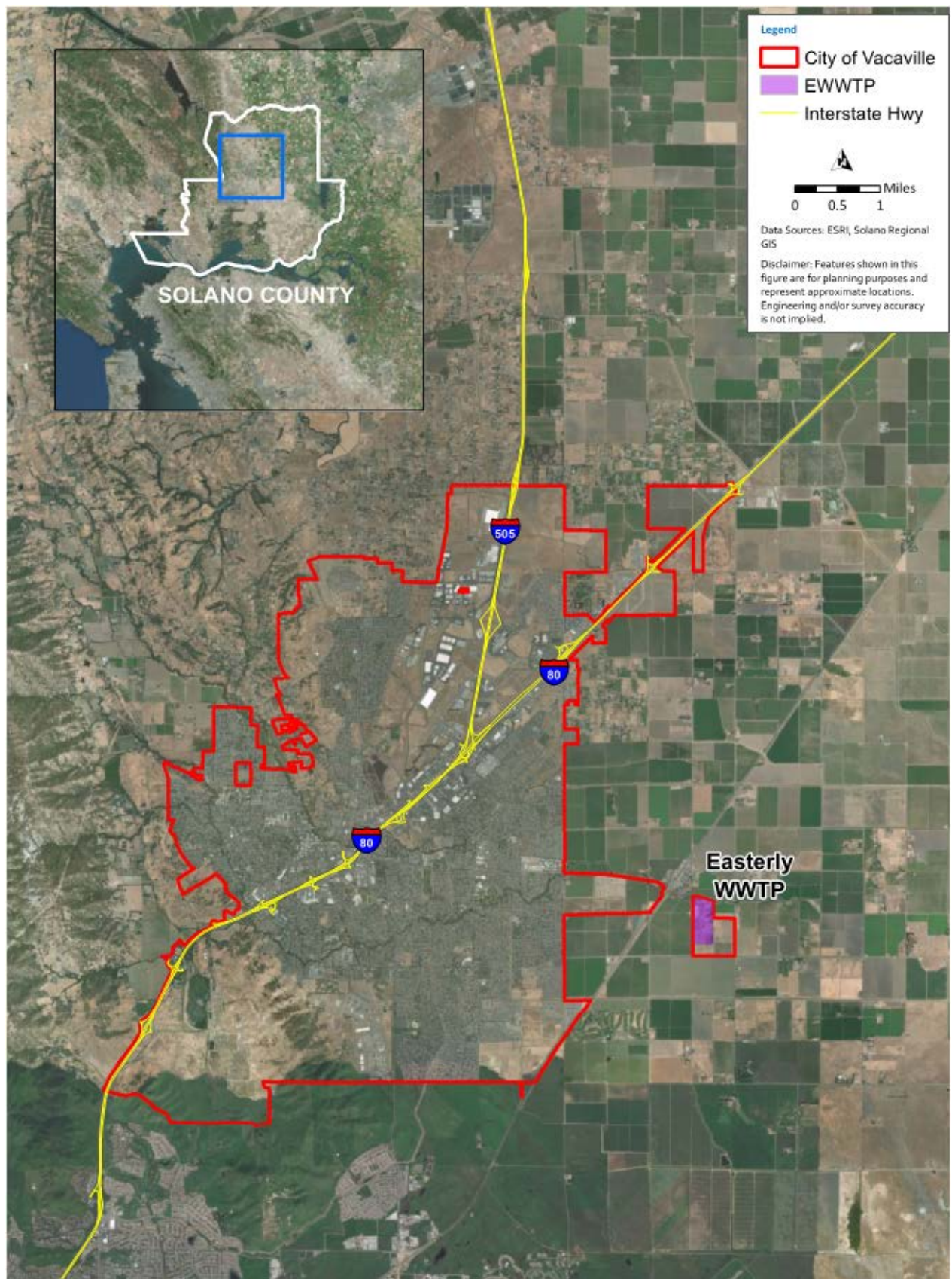
As shown on Figure 1, the City is located in northern Solano County, midway between San Francisco and Sacramento. The City of Vacaville, incorporated in 1892 and currently comprising just under 27 square miles, has a beautiful setting bordered by rolling hillsides, fruit orchards and fertile farmland. With an elevation ranging from 90- to 300-feet, Vacaville enjoys warm summers and mild winters, with an average summer high of 94 degrees and an average winter low of 36 degrees. Annual rainfall averages about 24 inches. The City's rich history has transformed the community from a small agricultural town into a thriving and progressive city; now a diverse population of 97,446 residents call Vacaville home. While the City's population history and demographics show its rapid growth, Vacaville remains a "small town at heart," whose residents pride themselves on the high level of community involvement.

The City owns and operates the Easterly Wastewater Treatment Plant (EWWTP or Easterly WWTP), which serves approximately 97,000 people throughout the City of Vacaville, the Community of Elmira, the California Medical Facility, and most of the Vaca Valley Industrial Park. The Easterly WWTP, located at 6040 Vaca Station Road, Elmira, CA 95625. The Easterly WWTP discharges wastewater to Old Alamo Creek, which is a tributary to New Alamo Creek, which is a tributary to Ulatis Creek, which eventually outlets to Cache Slough and the Sacramento-San Joaquin River Delta (Delta).

Since its construction in 1959, treated effluent from the Easterly WWTP has been discharged into Old Alamo Creek. The contributing watershed to Old Alamo Creek upstream of the Easterly WWTP was dramatically reduced in the early 1960s when New Alamo Creek, a larger, man-made conveyance channel, was constructed as part of a federal flood control project. As part of the flood control project, Old Alamo Creek downstream of the Easterly WWTP was partially realigned to flow into New Alamo Creek.

Old Alamo Creek originally shared the beneficial uses assigned to the Delta since it is a tributary to the Delta. However, in 2005, the Central Valley Regional Water Quality Control Board (CVRWQCB), amended the Basin Plan for the Sacramento and San Joaquin River Basins to remove certain beneficial uses from those initially assigned to Old Alamo Creek. Specifically, the CVRWQCB concluded that drinking water supply is not an existing beneficial use for Old Alamo Creek and that beneficial use probably cannot be feasibly attained in the future. This is due to the ephemeral, intermittent, or low flows associated with Alamo Creek, and the release of additional treated sewage effluent from the Easterly WWTP as the City of Vacaville grew.

In 2006, the State Water Resources Control Board (SWRCB), declared Old Alamo Creek was an exception to the Sources of Drinking Water Policy. The exception did not modify the beneficial uses of New Alamo Creek, which meant that the flow in Old Alamo Creek must meet or exceed the water quality



requirements of New Alamo Creek at the convergence of Old Alamo Creek and New Alamo Creek. Since the Easterly WWTP discharge dominates the flow in Old Alamo Creek during most periods, its effluent must meet requirements similar to those that apply to New Alamo Creek.

Today, the Easterly WWTP operates 24 hours, seven days a week (24/7) and treats an average of 7.5 million gallons of wastewater per day and has an average dry weather treatment capacity of 15 MGD. The plant operates under a National Pollutant Discharge Elimination System (NPDES) permit issued and regulated by the Central Valley Regional Water Quality Control Board (Regional Board) to provide Title 22 tertiary level treatment. The Easterly WWTP is a state-of-the-art wastewater treatment plant that utilizes many complex processes to produce treated wastewater and Title 22 recycled water. Wastewater undergoes primary, secondary and tertiary treatment and disinfection before being released into Alamo Creek, where it travels to Cache Slough, and eventually out to the Delta.

1.2 Goal and Objective and Purpose and Need

The purpose of the Proposed Project is to provide a variety of beneficial recycled water uses including agricultural irrigation, urban irrigation, and industrial reuse of Easterly WWTP tertiary treated recycled water, consistent with the recommended project identified in the *City of Vacaville, Draft Recycled Water Master Plan, April 2020*.

Section 2 - Description of Proposed Action

This section provides a summary of the City's proposed Recycled Water Project and construction considerations and commitments.

2.1 Proposed Project/Action Project

The purpose of the Proposed Project is to provide approximately 2,830 acre-feet of tertiary treated recycled water from the Easterly WWTP for a variety of beneficial recycled water uses including agricultural irrigation, urban irrigation, and industrial reuse - consistent with the recommended project identified in the *City of Vacaville, Draft Recycled Water Master Plan, April 2020*.¹

As shown on Figure 2, the Proposed Project/Action includes approximately 9-miles (48,000 linear feet) of new recycled water distribution pipelines that would connect with the approximately 20-miles of the City's existing recycled water pipelines. Table 1 provides a summary of the proposed pipeline lengths and diameter. The proposed distribution system has two pipeline branches ranging in size from 6-inch to 20-inches in diameter. One branch extends southeast of Easterly WWTP to serve the planned athletic fields adjacent to the City's Easterly WWTP, one direct agricultural parcel, and Cypress Lakes Golf Course. The other branch extends west from Easterly WWTP and then branches to both the north and the south along Leisure Town Road. This northwest branch utilizes an abandoned sewer line to cross the railroad tracks between Fry Road and Elmira Road and also utilizes existing recycled water lines installed within some of the new developments and along Leisure Town Road. The northwest distribution branch serves urban irrigation customers in new developments along Leisure Town Road, one direct agricultural customer south of Elmira Road and west of the railroad, and a few industrial reuse customers in the Vaca Valley Business Park located between I-80 and I-505. Implementation of the distribution pipelines is phased into immediate, near-, and long-terms.

Table 1 Proposed Project/Action Pipeline Facilities			
Phase	Diameter (in)	Total Pipeline Length ⁽¹⁾ (ft)	New Pipeline Length (ft)
Immediate	6 ⁽²⁾	400	400
	8	29,700	0
	12	22,900	500
	14	2,400	1,400
	20	5,700	5,700
Immediate Phase Total:		61,100	8,000
Near	12	13,300	10,100
	14 ⁽³⁾	16,100	16,100
	16	1,800	1,800
Near Phase Total:		31,200	28,000

¹ Please note that the City would like to provide additional Easterly WWTP effluent discharges to downstream users for diversions via water transfer agreements along Alamo Creek and Cache Slough prior to discharge to the Delta. However, at the time of this publication, these specific plans and details are not known in sufficient detail to support a thorough and complete environmental analysis. As such, this environmental document does not cover these activities and additional project specific environmental analysis will be required once these specific water transfer plans and details become known including, but not limited to, the specific place of use(s), quantities, and intended uses of the tertiary treated recycled water effluent.

Table 1 Proposed Project/Action Pipeline Facilities			
Phase	Diameter (in)	Total Pipeline Length ⁽¹⁾ (ft)	New Pipeline Length (ft)
Long	12	4,100	8,900
	14	7,900	5,300
Long Phase Total:		12,000	12,000
Overall Total:		104,300	48,000
Notes:			
(1) Length includes existing and planned development recycled water line lengths.			
(2) Assumes 6-inch connection to existing 3W line to serve Athletic Fields in immediate phase.			
(3) Includes 700-feet of 14-inch pipeline at Easterly from diversion wet well to new storage.			

Table 2 lists individual customer average day and peak day demands. Demands are assumed to continue without change from one phase into the following phase (e.g. all immediate term demands are included in the near- and long-term phases). Table 3 presents the annual demands of all customers categorized by the type of use.

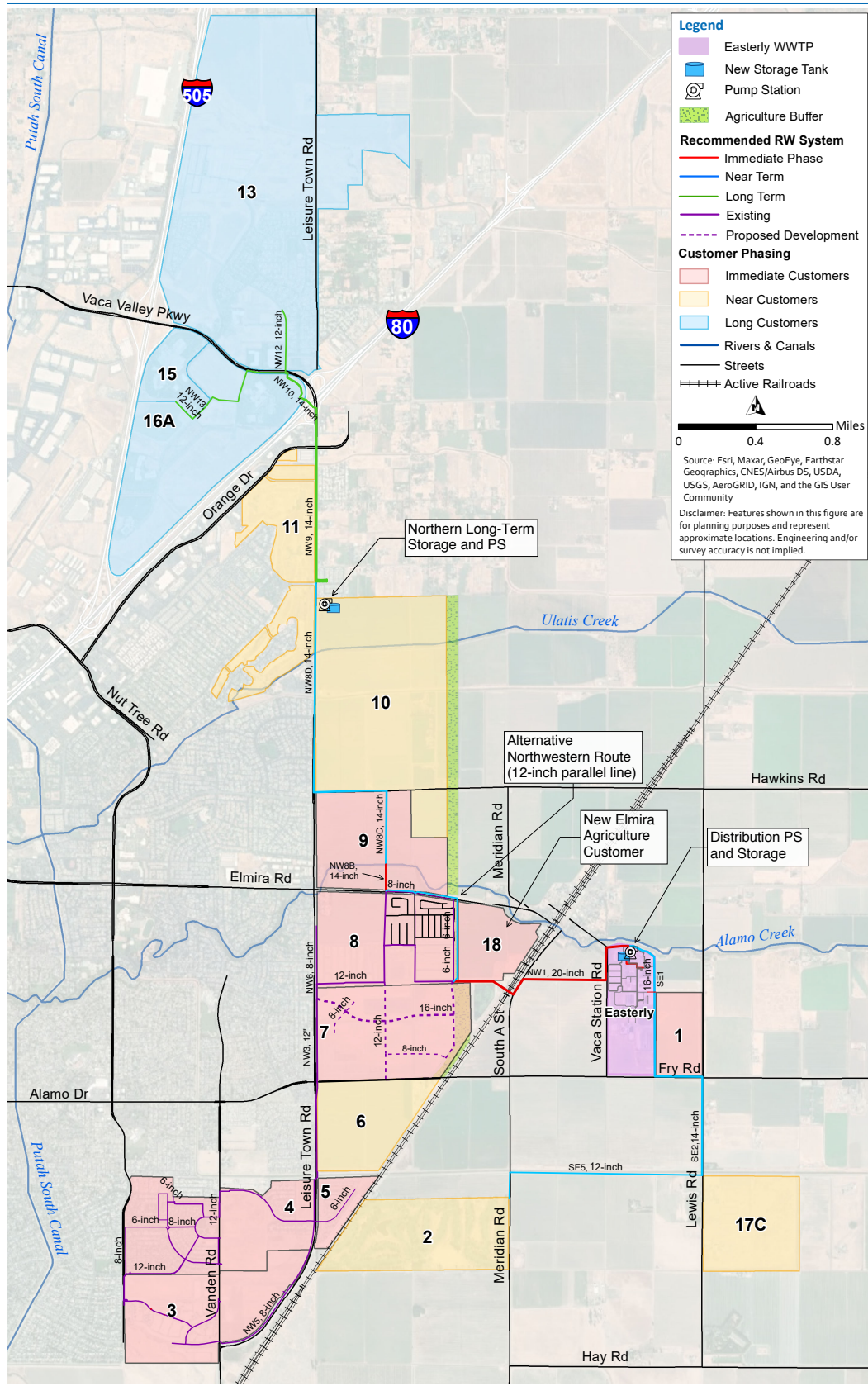
Table 2 Customer Demands by Phase					
ID	Customers	Type of Use (1)	Avg Day Demand (mgd)	Avg Day Demand (afy)	Peak Day Demand (mgd)
Immediate Term					
1	New City Athletic Fields	UrbIrr	0.10	110	0.29
3	Vanden Meadows Development	UrbIrr	0.09	100	0.26
4	Southtown Development	UrbIrr	0.12	130	0.33
5	Southtown Commons/Moody	UrbIrr	0.02	20	0.05
7	Roberts Ranch	UrbIrr	0.13	145	0.38
8	Brighton Landing	UrbIrr	0.10	115	0.30
9	The Farm at Alamo Creek	UrbIrr	0.11	125	0.32
19	Elmira	Direct Ag	0.20	230	0.55
Immediate Term Subtotal			0.87	975	2.48
Near Term					
2	Cypress Lakes Golf Course	UrbIrr	0.30	340	0.88
6	East of Leisure Town Road Development (South)	UrbIrr	0.07	75	0.19
10	East of Leisure Town Road Development (North)	UrbIrr	0.22	245	0.63
11	Green Tree Development	UrbIrr	0.07	75	0.19
17C	Agricultural Customer	Direct Ag	0.39	435	1.04
Near Term Subtotal			1.04	1,170	2.94
Long Term					
13	North Village	UrbIrr	0.33	370	0.96
15	Genentech	Industrial	0.14	155	0.14
16A	Vaca Valley Business Park (excluding Genentech)	Industrial	0.14	160	0.14
Long Term Subtotal			0.61	6,85	1.24
TOTAL			2.52	2,830	6.66
Notes:					
(1) Urb Irr = Urban Irrigation, DD = Downstream Diversions, Direct Ag = Direct Agricultural Reuse					

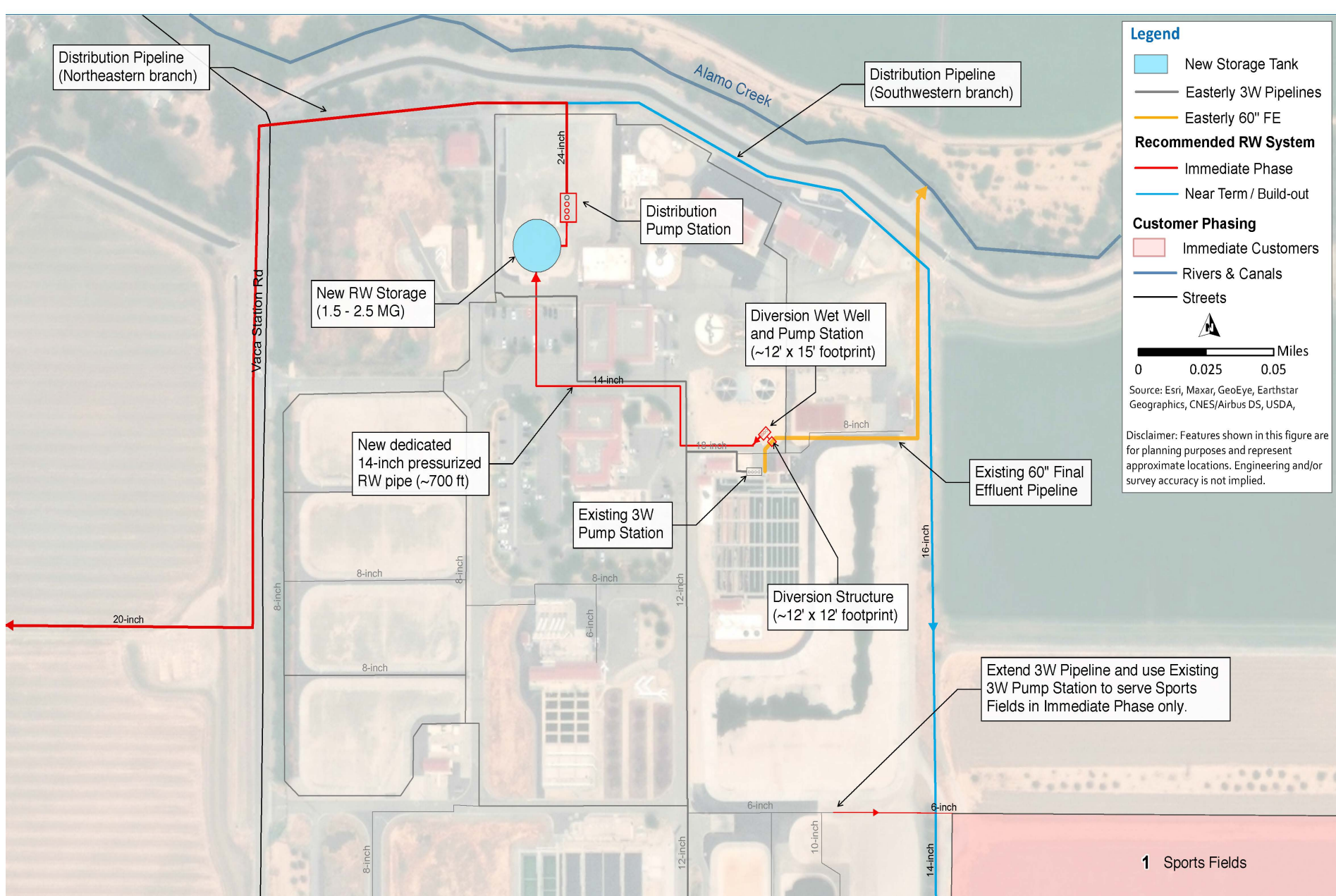
Table 3
Annual Demand Summary by Reuse Type

Phase	Urban Irrigation (afy)	Direct Agriculture (afy)	Industrial (afy)
Immediate	745	230	0
Near	735	435	0
Long	370	0	315
Total	1,850	665	315

As shown on Figure 3, the Proposed Project/Action also includes other facilities including a new diversion structure and wet well, a new 2.5MG recycled water storage tank, a new pump station, and a water truck filling station at the Easterly WWTP. In addition, and as shown in Figures 2 and 4, the Proposed Project/Action also includes an off-site recycled water storage tank and booster pump station, located adjacent to the Green Tree Development on the east side of Leisure Town Road. Each are discussed below.

- New Easterly WWTP Diversion Structure and Wet Well.** The Proposed Project/Action includes a new diversion structure and wet well at the Easterly WWTP to divert recycled water flows from the final effluent outfall pipeline downstream of the 3W system pump station. Diverting at this location would not interfere with plant 3W demands or operations. The diversion structure is sized to meet Easterly WWTP's peak hour wet weather flow of 55-mgd, and allow for the full effluent to discharge to Alamo Creek if needed. The structure would also allow for flow to the creek year-round, if required. Diverted recycled water would flow into a wet well and pump station and be conveyed via a new 700-foot dedicated 14-inch pressurized pipeline to storage.
- New Easterly WWTP Recycled Water Storage.** The Proposed Project/Action includes a new 1.5- to 2.5-MG recycled water storage tank at the Easterly WWTP to mitigate the risk of not having enough storage capacity during wet weather events and to provide a long-term recycled water storage solution.
- New Easterly WWTP Pump Stations.** The Proposed Project/Action includes one (1) new 300-hp pump station and a new 20-inch diameter pipeline located at Easterly WWTP to serve the immediate phase needs of the northwest distribution branch. In the immediate phase the new City Athletic Fields will be served via the existing 3W pumps and distribution system at Easterly WWTP. A new 6-inch pipeline extension off the existing system will be built to connect the athletic fields (Shown in Figure 3). In the future, these pump stations will be upsized to 625-hp and a southeast branch of the distribution system will be added to serve the City athletic fields and other customers in the southeast. It is assumed that the pump stations, sized for peak hour demand flows will serve the northwest and southeast pipeline branches on a continuous basis.
- Water Truck Filling Station.** The Proposed Project/Action also includes a recycled water truck filling station located at Easterly WWTP. The filling station would tie in to the City's existing Recycled Water System (3W) at the Easterly WWTP and require limited additional infrastructure. This filling station would provide recycled water for City services such as dust control, street cleaning, sewer flushing, and use in construction, among others. This would provide a community benefit and help the City defer water costs. There would also be potential to expand





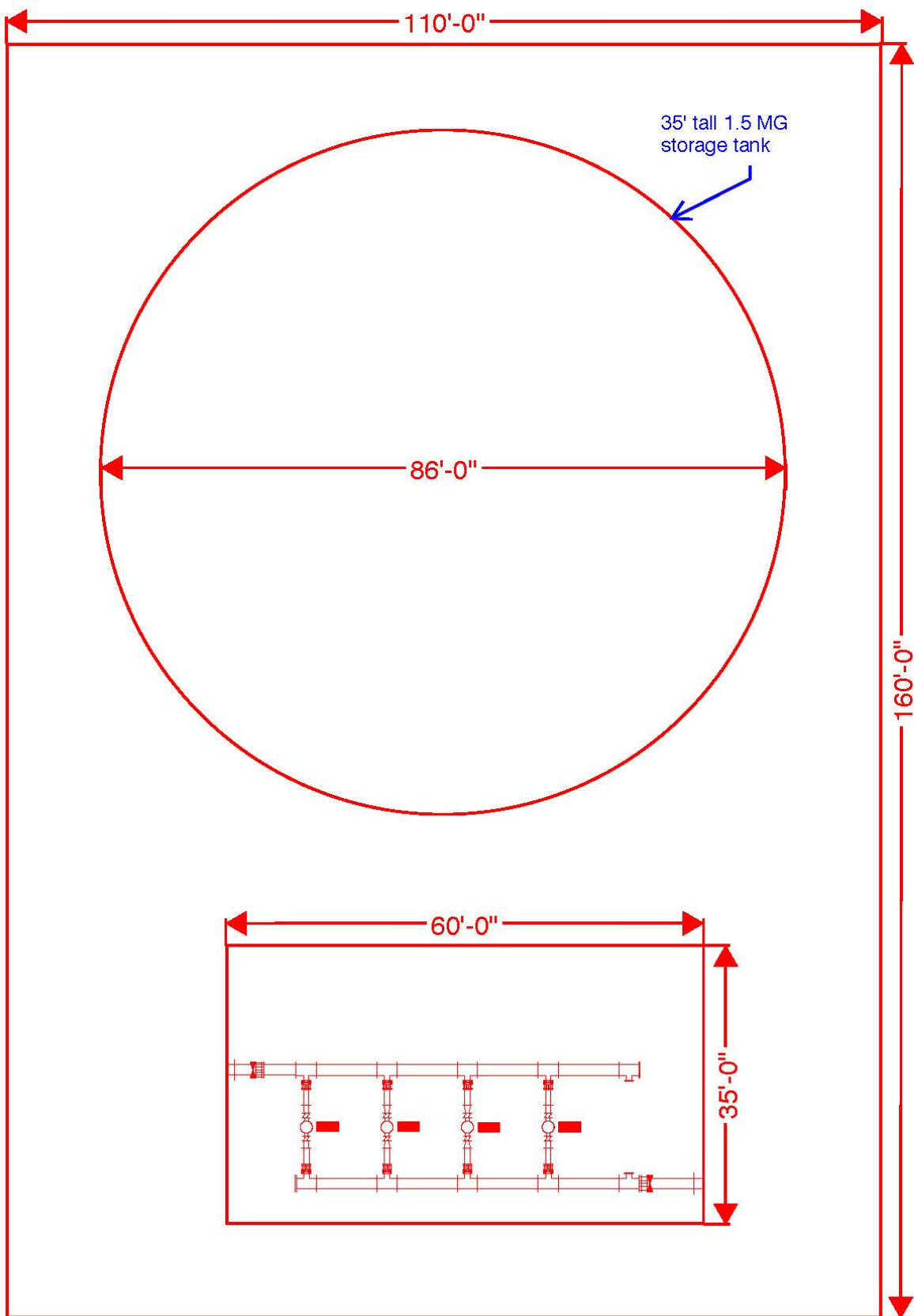


Figure 4
Off-Site Water Storage Tank and
Booster Pump Station Layout

access to the truck filling station to other commercial entities within the City and possibly to the general public. The exact site of the filling station at Easterly WWTP is to be determined, but would be located such that interaction with other plant traffic would be minimized and it would not disrupt any part of plant operations.

- **New Off-Site Recycled Water Storage Tank and Booster Pump Station.** In the immediate and near-term phases, the Proposed Project/Action will use a new storage tank located at the Easterly WWTP to store up to 2.5-MG of recycled water prior to distribution. However, as shown on Figure 4, the Proposed Project/Action includes a new 1.5-MG storage tank and booster pump station for the long-term phase and would be located on an approximately 110- by 160-foot parcel adjacent to the Green Tree Development on the east side of Leisure Town Road and would deliver recycled water flows to customers north of I-80. The Proposed storage tank would be an above ground steel tank located on a parcel with approximate dimensions of 35-feet high and 86-feet in diameter and would store water for long-term phase customers located north of I-80. The new 150-hp booster pump station will be used to help minimize overall pumping energy costs and serve customers in the long-term phase.

2.2 Project Construction

The Proposed Project is expected to begin in the summer of 2021 and continue over approximately a 2-year period and ending in 2023. Construction work will typically be done within normal working hours, weekdays between the hours of 7 a.m. and 7 p.m., and possibly on Saturdays between the hours of 8 a.m. and 5 p.m. The Proposed Project/Action would be constructed primarily within existing paved and unpaved roadways and any damages occurring during construction will be returned to the pre-construction condition or better. Detailed below is a summary of the construction techniques and activities.

- The majority of the pipelines would be installed using conventional cut and cover construction techniques and installing pipe in open trenches. It is assumed that up to a 12-foot wide construction corridor would be used to help maximize the efficiency during construction. However, in most places a 3-to-5-foot construction corridor could be realized, especially for the smaller diameter pipelines. It is anticipated that excavation would typically be no more than 3-5 feet wide and 3-to-6-feet deep.
- All creeks, drainages, wetlands, and/or riparian areas will be avoided and/or will be crossed using trenchless construction techniques². All construction activities will occur will not occur during rainy weather and during the months between October 15 and through April 1.

² Trenchless technology is a type of subsurface construction work that requires few trenches or no continuous trenches. It is a rapidly growing sector of the [construction](#) and [civil engineering](#) industry. Trenchless technology can be defined as "a family of methods, materials, and equipment capable of being used for the installation of new or replacement or rehabilitation of existing underground infrastructure with minimal disruption to surface traffic, business, and other activities." Trenchless construction includes such construction methods as [tunneling](#), [micro-tunneling](#) (MTM), horizontal [directional drilling](#) (HDD) also known as [directional boring](#), [pipe ramming](#) (PR), [pipe jacking](#) (PJ), [moling](#), horizontal auger [boring](#) (HAB) and other methods for the installation of pipelines and cables below the ground with minimal excavation. Large diameter [tunnels](#) such as those constructed by a [tunnel boring machine](#) (TBM), and [drilling and blasting](#) techniques are larger versions of

- Dewatering of the pipeline as a result of hydrostatic testing during construction as well as any dewatering as a result of operations and maintenance activities shall be discharged to land and not into any creeks, drainages, or waterways and shall require prior approval from the Central Valley Regional Water Quality Control Board (Central Valley RWQCB).

Construction activities for this kind of project will typically occur with periodic activity peaks, requiring brief periods of significant effort followed by longer periods of reduced activities. In order to characterize and analyze potential construction impacts, the City has assumed that each phase of the project would be constructed by two (2) crews of 10-to-15 workers each and would proceed at a rate of approximately 500-1,000 feet per day. However, specific details may change or vary slightly. Staging areas for storage of pipe, construction equipment, and other materials would be placed at locations that would minimize hauling distances and long-term disruption.

Excavation and grading activities would be necessary for construction of the Proposed Project/Action. Excavated materials resulting from site preparation would either be used on-site during construction or disposed of at a fill area authorized by the City. It is not anticipated that any soils would be imported for this project. Additional truck trips would be necessary to deliver materials, equipment, and asphalt-concrete to the site. During peak excavation and earthwork activities, the Proposed Project/Action could generate up to 40 round-trip truck trips per day. In support of these activities and for the assumptions for this document, the types of equipment that may be used at any one-time during construction may include, but not limited to:

- Track-mounted excavator
- Backhoe
- Grader
- Crane
- Dozer
- Compactor
- Trencher/boring machine
- End and bottom dump truck
- Front-end loader
- Water truck
- Flat-bed delivery truck
- Forklift
- Compressor/jack hammer
- Asphalt paver & roller

subsurface construction. The difference between trenchless and other subsurface construction techniques depends upon the size of the passage under construction. Trenchless construction requires considering soil characteristics and the loads applied to the surface. In cases where the soil is sandy, the water table is at shallow depth, or heavy loads like that of urban traffic are expected, the depth of excavation has to be at a depth such that the pressure of the load on the surface does not affect the bore, otherwise there is danger of surface caving in.

- Street sweeper

It is recognized that details of the construction activities and methods may change slightly as the specific details will be developed during final design and by the selected contractor. However, this description provides sufficient information to base the conclusions to probable environmental impacts associated with construction activities for this kind of project. Therefore, as long as the construction methods are generally consistent with these methods and do not conflict with any of the City's design standards or established ordinances, and does not create any new potential environmental impacts that are not described within this document, then no new environmental analyses will likely be required for any minor change in construction activities, timing, and/or schedule.

2.3 Facility Operations and Maintenance

The recycled water treatment and conveyance system will be operated by existing City operations and maintenance staff. The system will operate 24 hours per day and 7 days per week and produce an average of 2,830 afy. It is anticipated that the irrigation schedule for urban irrigation users will occur 8 hours a day, from 9 PM to 5 AM and direct agricultural and industrial users will receive water on a 24 hours per day schedule. Operation and maintenance of the proposed facilities are not anticipated to increase the number of permanent workers or employees.

2.4 Compliance with CCR Title 22 and State Board's Recycled Water Policy

The Proposed Project/Action will be designed and operated in accordance with the applicable requirements of CCR Title 22 and any other state or local legislation that is currently effective or may become effective as it pertains to recycled water. The State Board adopted a Recycled Water Policy (RW Policy) in 2009 to establish more uniform requirements for water recycling throughout the State and to streamline the permit application process in most instances. As part of that process, the State Board prepared an Initial Study and Mitigated Negative Declaration for the use of recycled water. The newly adopted RW Policy includes a mandate that the State increase the use of recycled water over 2002 levels by at least 1,000,000 afy by 2020 and by at least 2,000,000 afy by 2030. Also included are goals for storm water reuse, conservation and potable water offsets by recycled water. The onus for achieving these mandates and goals is placed both on recycled water purveyors and potential users. The State Board has designated the Regional Water Quality Control Boards as the regulating entities for the Recycled Water Policy. In this case, the Central Valley Regional Water Quality Control Board (Central Valley RWQCB) is responsible for permitting recycled water projects throughout the Central Valley Area, including the City of Vacaville.

The Proposed Project will provide high quality unrestricted use tertiary treated recycled water and make it available to users within the City. All irrigation systems will be operated in accordance with the requirements of Title 22 of the CCR, the State Board Recycled Water Policy, and any other local legislation that is effective or may become effective as it pertains to recycled water and any reclamation permits issued by the Central Valley RWQCB. Reclamation permits typically require the following:

- Irrigation rates will match the agronomic rates of the plants being irrigated;
- Control of incidental runoff through the proper design of irrigation facilities;

- Implementation of a leak detection program to correct problems within 72 hours or prior to the release of 1,000 gallons whichever occurs first;
- Management of ponds containing recycled water to ensure no discharges; and
- Irrigation will not occur within 50 feet of any domestic supply wells, unless certain conditions have been met as defined in Title 22.

2.5 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. As shown in Figures 2 and 3 above, the APE includes the City’s Easterly WWTP and the proposed pipelines to the customer service areas. Trenching for installing of replacement of pipelines would typically require a width of 3- to 5-feet and a vertical depth of approximately 3-to 6-feet deep. Therefore, the vertical APE would be typically no more than 6-feet.

Section 3 –Regulatory Setting

This section describes the relevant federal, state, and local guidelines specific to biological resources issues.

3.1 Federal Regulations

The relevant federal regulations are discussed below.

Clean Water Act – Section 404. Wetlands and other waters of the U.S. (as defined above) are subject to jurisdiction by the Corps and EPA under Section 404 of the Clean Water Act. Wet areas that are not regulated by this act would include stock watering ponds, agricultural ditches created in upland areas, and isolated wetlands that do not have a hydrologic link to other waters of the U.S., either through surface or subsurface flow. The discharge of fill into a jurisdictional feature requires a permit from the Corps.

The Corps has the option to issue a permit on a case-by-case basis (individual permit) or at a program level (general permit). Nationwide permits (NWP) are an example of general permits; they cover specific activities that generally have minimal environmental effects. Activities covered under a particular NWP must fulfill several general and specific conditions, as defined by the NWP. If a proposed project cannot meet these conditions, an individual permit may be required.

Federal Endangered Species Act. The USFWS administers the Federal Endangered Species Act (16 USC Section 153 et seq.) and thereby has jurisdiction over federally listed threatened, endangered, and proposed species. Projects that may result in “take” of a listed species must consult with the USFWS. Federal agencies that propose a project that may affect a listed species are required to consult with the USFWS under Section 7 of the Federal Endangered Species Act. If it is determined that a federally listed species may be adversely affected by the Federal action, the USFWS will issue a Biological Opinion to the Federal agency that describes minimization and avoidance measures that must be implemented as part of the Federal action. Projects that do not have a Federal nexus must apply for a take permit under Section 10 of the Act. Section 10 of the Act requires that the project applicant prepare a habitat conservation plan as part of the permit application.

Under the Federal Endangered Species Act the USFWS designates critical habitat, areas that are essential for the conservation of a threatened or endangered species and which may require special management considerations. A designation only applies to projects with a Federal nexus; it has no specific regulatory impact on landowners who take actions on their land that do not involve Federal funding. However, Federal agencies must consult with the USFWS before taking actions that could harm or kill protected species or destroy their habitat.

Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act. The Migratory Bird Treaty Act (MBTA, 16 USC Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668) protect certain species of birds from direct take. The MBTA protects migrant bird species from take through the establishment of hunting limits and seasons and protecting occupied nests and eggs. The

Bald and Golden Eagle Protection Act prohibits the take or commerce of any part of these species. The USFWS administers both acts, and reviews Federal agency actions that may affect species protected by the acts.

3.2 State Regulations

The relevant state regulations are discussed below.

California Fish and Wildlife Code Sections 1600 – 1616. The CDFW regulates the modification of streams, rivers, and lakes under Sections 1600-1616 of the California Fish and Wildlife Code. Modification includes diverting, obstructing, or changing the natural flow or bed, channel, or bank of a regulated feature. While most of the features regulated by the Fish and Wildlife Code meet the definition of other waters of the U.S., the Code may regulate some ephemeral features that do not have all the criteria to qualify as other waters of the U.S. A project proponent, including both private parties and public agencies, proposing an activity that may modify a feature regulated by the Fish and Wildlife Code must notify the CDFW before project construction. The CDFW will then decide whether to enter into a Streambed Alteration Agreement with the project proponent.

California Endangered Species Act. The CDFW administers the California Endangered Species Act of 1984 (Fish and Game Code Section 2080), which regulates the listing and “take” of endangered and threatened species. A “take” may be permitted by CDFW through implementing a management agreement. Under the State laws, the CDFW is empowered to review projects for their potential impacts to listed species and their habitats. CDFW maintains lists for Candidate-Endangered Species (SCE) and Candidate-Threatened Species (SCT). California candidate species are afforded the same level of protection as listed species. California also designates Species of Special Concern (CSC), which are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. These species do not have the same legal protection as listed species, but may be added to official lists in the future. The CSC list is intended by CDFW as a management tool for consideration in future land use decisions.

3.3 Local Regulations

The relevant local regulations are discussed below.

City of Vacaville Land Use and Development Code

Section 14.09.131 of the Vacaville Land Use and Development Code sets forth criteria for the preservation of native species, healthy trees, large specimens, and visually prominent trees. Impacts to any tree greater than 31 inches in circumference at 4.5 feet above the ground surface requires a City permit.

Section 14.12.174.050 of the Vacaville Land Use and Development Code sets forth criteria for the designation of development setbacks for creeks, with a minimum setback standard of 40 feet from the top of the stable bank, as determined by the City Engineer. Section 14.09.098 of the Vacaville Land Use and Development Code establishes the permitted and conditional uses allowed in the Agricultural Hillside (AH) district, and establishes development standards for uses in this district. The AH district

provides for low intensity agricultural uses on privately held hillside lands. Lands within this designation are generally areas of steep slope, lacking the necessary public infrastructure to support urban development. Development is limited to one dwelling unit per 20 acres and other accessory uses associated with agriculture. Section 14.09.101 of the Vacaville Land Use and Development Code establishes development standards for the Open Space (OS) district. The purpose of the OS district is to provide for the preservation of public open space lands such as hillsides, ridgelines, and scenic areas. The OS district also includes areas with limited development potential due to physical characteristics of the land or lack of access. The purposes of the OS chapter are to: promote the preservation of public open space lands in order to protect natural resources, wildlife habitat, ridgelines, and areas of scenic beauty and cultural significance; provide for continued agricultural uses; provide for low intensity outdoor recreational uses in natural environments; protect the public health and safety by limiting the use of lands which are subject to fire, landslide, or seismic hazards; and implement the goals, objectives, and policies of the Land Use and Development Code and the General Plan.

Solano Multi-Species Habitat Conservation Plan

The US Bureau of Reclamation is responsible for water management and constructed many of the dams, powerplants, and canals in the western United States. The Solano County Water Agency (SCWA) is a whole water agency providing untreated water throughout Solano County. The US Bureau of Reclamation, together with the SCWA and its eight member agency contracts with the Cities of Vacaville, Fairfield, Suisun City, and Vallejo, the Solano Irrigation District, the Maine Prairie Water District, the University of California, Davis, and the California Medical Facility/California State Prison, Vacaville, have agreed to implement conservation measures to ensure the protection of threatened and endangered species and their habitat within the SCWA contract service area.⁹ Full implementation of the conservation measures outlined in the Solano Project Water Service Contract Renewal Biological Opinion is key to the survival and recovery of listed species. As such, SCWA and the member agencies are developing the Solano MultiSpecies Habitat Conservation Plan (HCP) for the Solano Project contract service area. The HCP is intended to support the issuance of a Section 10(a)(1)(B) “incidental take permit” under the Endangered Species Act for activities associated with future water use in the Solano Project contract service area. The HCP participants also intend to secure incidental take authorization from CDFG for State-listed species.

Once the applicable State and federal incidental take permits are issued, the HCP participants will assume primary responsibility for extending incidental take coverage for their own activities, extending coverage to third parties over which the HCP participants have direct regulatory control (e.g. through issuance of grading permits, occupancy permits, and use permits), and ensuring compliance with required avoidance, minimization, and mitigation measures. The HCP effectively shifts endangered species regulations compliance from a federal and State level to the local level under the authority of a well-regulated, regional plan. The Solano HCP proposes to secure incidental take authorization for 37 species present within the county. The scope of the HCP includes take coverage for federally listed fish species under the jurisdiction of NMFS and species listed as threatened or endangered under the California Endangered Species Act. The HCP further addresses other species of concern, that is, species recognized by groups such as CDFG and the California Native Plant Society (CNPS) as having declining or

vulnerable populations, but not officially listed as threatened or endangered species. An additional 35 species are addressed in the HCP's Conservation Strategy as "Special Management Species." Special Management Species include species that were initially considered for inclusion in the HCP as Covered Species and are considered under CEQA Section 15380 to be threatened or endangered. However, the life history and/or habitat associations for such species may not be fully known. While these species will benefit from the broader community conservation provided for other Covered Species, sufficient information on their biology and management is not available to allow the federal agencies to make the necessary findings under the "No Surprises" assurances¹¹ that the proposed Conservation Program and Covered Activities will not appreciably reduce the likelihood of survival and recovery of the species in the wild. The Solano HCP is at the final administrative draft stage and a Public Draft is available at <http://www.scwa2.com/water-supply/habitat/solano-multispecies-habitat-conservation-plan>. Once adopted, permitting authority for the take of covered species would be largely transferred from the federal and State levels to the HCP participants, such as the City of Vacaville.

Section 4 – Regional Environmental Setting

The Proposed Project/Action would be located primarily in a rural area with a mix of existing agricultural, residential, and commercial uses in and around the area. Wildlife corridors in the vicinity of the Proposed Project/Action area include the Pacific Flyway, a common route of bird migration that extends along the west coast of North America from Alaska to South American, and from the Eastern Pacific to the Great Basin, as well as a terrestrial wildlife corridor consisting of a narrow band of riparian woodland bordering Alamo Creek adjacent to the northern boundary of the project site. Terrestrial habitat types within the Proposed Project/Action include: nonnative grassland, nonnative blackberry, agriculture, and ruderal/disturbed areas. Aquatic habitat types within the project site include: basins and roadside ditches. A description of the key wildlife habitats (including plant and wildlife species) found within the Planning Area is described in this section. This section provides a brief description of the key terrestrial and aquatic habitats.

4.1 Terrestrial Habitats

This section provides a brief description of the key terrestrial habitats.

Nonnative Grassland

Nonnative grassland occurs within portions of the Proposed Project/Action area site. The nonnative grassland is disked annually in the late spring to reduce fire hazards. Dominant vegetation observed in the nonnative grassland includes: winter vetch (*Vicia villosa*), purple wild radish (*Raphanus sativus*), plantain (*Plantago lanceolata*), alfalfa (*Medicago polymorpha*), yellow star thistle (*Centaurea solstitialis*), field mustard (*Brassica rapa*), common groundsel (*Senecio vulgaris*), wild oat (*Avena fatua*), and ripgut grass (*Bromus diandrus*). Two ground squirrel burrows were observed within the nonnative annual grassland on the southwestern portion of the project site.

Nonnative Blackberry

Nonnative blackberry occurs adjacent to roadside ditches throughout the Proposed Project/Action area and is comprised primarily of nonnative blackberry vegetation (*Rubus discolor*).

Agriculture

Agriculture occurs throughout the Proposed Project/Action area, within the proposed landscape buffer area. Sunflower (*Eriophyllum sp.*) was the crop observed growing within the project site.

Ruderal/Disturbed

Ruderal/disturbed areas include existing buildings and associated infrastructure, parking lots, graded areas, paved roads, concrete-lined aeration basins, polypropylene lined biosolid lagoons, paved bio-solid drying beds, and ornamental landscaping. Existing ornamental landscaping within and around the Proposed project/Action area includes ornamental trees and shrubs that have been planted around the existing administration building, parking lot, and access road.

4.2 Aquatic Habitats

This section provides a brief description of the key aquatic habitats.

Roadside Ditches

Roadside ditches occur along the perimeter of the Proposed Project/Action Area. Features observed along the bed and banks of the roadside ditches include approximately 1.5-foot wide defined bed and banks and distinct drainage patterns. Although the hydric soils necessary to meet the criteria of wetland features are not present, the features are considered roadside ditches because they contain defined beds and banks, in accordance with the U.S. Army Corps of Engineers (USACE) regulations identified in 33 CFR Part 328. roadside ditches receive water via direct precipitation during rain events and from runoff from Vaca Station Road, Fry Road, Lewis Road, and adjacent nonnative grassland and agricultural areas. These roadside ditches do not connect to potentially jurisdictional features through surface flow and drain only uplands.

4.3 Waters of the U.S.

This section provides a brief description of the potential of the proposed project/Action to affect Waters of the U.S.

Definition

Waters of the U.S. are defined as:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands; or
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use degradation of which could affect interstate or foreign commerce including any such waters (40 CFR 230.3).

Wetlands are defined as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (40 CFR 230.41). Wetlands that meet these criteria during only a portion of the growing season are classified as seasonal wetlands.

Wetlands and Other Water of the U.S. Delineation

In 2009, the City conducted a wetlands delineation of the Waters of the U.S. for the Easterly WWTP and surrounding area that mostly encompasses this Proposed Project/Action area. The purpose of the delineation was to identify whether wetlands and other waters of the U.S., as defined by the USACE under Section 404 of the Clean Water Act (CWA), occur within the project site/area as the City was proposing to upgrade the Easterly WWTP and place in the first phase of the recycled water pipeline system. All wetland and water features identified within the project area were assessed to determine whether these features would potentially be subject to USACE jurisdiction under Section 404 of the

CWA. Wetland features in the project site include the three existing man-made basins at the and roadside ditches.

The three basins within the project site do not have a significant federal nexus to a Water of the U.S. The three basins are engineered features that were dug wholly in uplands, receive artificial hydrology, and serve no connectivity for fish and wildlife species. Six roadside ditches occur within the project site. RGL 07-01 (2007) states that ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water are generally not waters of the U.S. because they are not tributaries and/or they do not have a significant nexus to downstream traditional navigable waters. In accordance with RGL 07-01, the roadside ditches are not likely to be considered jurisdiction by the USACE because they were dug wholly in uplands.

In conclusion, no potentially jurisdictional features were identified within the project site. On November 3, 2009, representatives of the USACE conducted a site visit with City representatives to review the results of the delineation and verified the findings. For this Proposed Project/Action, a field reconnaissance site visit was conducted on July 25, 2019 to determine the potential for the presence of federal and state special status species as well as the potential for the project to affect Waters of the U.S. Consistent with the 2009 study above, it was concluded that there is no potentially jurisdictional features were identified within the Proposed Project/Action area and the Proposed Project/Action would not affect these resources.

Section 5 – Effects on Special Status Species and Habitat

This section describes the potential effects on federal and state listed species and habitat as a result of implementing the Proposed Project/Action.

5.1 General Effects

Implementation of the Proposed Action has the potential to cause the following general effects on state and 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 Project/Action Area for several months. In addition, construction activities will cause an increase in noise and vibration in the Action Area, thereby potentially disturbing fish and 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.
- **Increase in Sedimentation and decrease in water quality.** The Proposed Project/Action may temporarily decrease water quality in the Proposed Project/Action Area and immediately downstream if sediments or chemicals are discharged from the construction site. A decrease in water quality may cause a decline in preferred food sources or reduce concentrations of available oxygen for fish and/or amphibian eggs or young.

5.2 Special Status Species in the Area

As provided in Attachment A, a record search of CDFW's California Natural Diversity Database (CNDDB) 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. In addition, a field visit of the pipeline alignment was conducted on July 25, 2019 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 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. No special-status species were observed during the field visits. Table 4 provides a summary of the potential for state and federal special status species to occur within the Proposed Project/Action Study Area. Figure 5 shows the location of known state and federal listed species within the Project/Action Area.

Table 4 Potential for Special-Status Species to Occur in the Proposed Project Study Area				
Species	Status	Habitat	Potential for Occurrence	Recommendations
Plants				
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	List 1B.2	Low ground, alkali flats, and flooded lands in annual grassland or in playas or vernal pools. 1-170 m.	Unlikely. Suitable habitat for this species does not occur in the Study Area.	No further actions are recommended for this species.

Table 4
Potential for Special-Status Species to Occur in the Proposed Project Study Area

Species	Status	Habitat	Potential for Occurrence	Recommendations
		Blooms March-June.		
<i>Atriplex cordulata</i> Heartscale	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>Atriplex parishii</i> Brittlescale	List 1B.2	Uncommon species of saltbush. Plant of saline and alkaline soils like in dry lakebeds and vernal pools.	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> Papoose tarplant	List 1B.2	Located in salt marshes with brackish water	Unlikely. Suitable habitat not present in Study Area.	No further actions are recommended for this species.
<i>Chloropyran molle</i> Hispid salty bird's-beak	List 1B.1	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>Delphinium recurvatum</i> Recurved larkspur	List 1B.2	Grasslands of the Central Valley have been mostly claimed for development and agriculture, so this species is now uncommon.	Unlikely. Suitable habitat not present in Study Area.	No further actions are recommended for this species.
<i>Downingia pusilla</i> dwarf downingia	List 2B.2	Vernal lake and pool margins in valley and foothill grasslands. 1-485 m. Blooms March-May.	Unlikely. No suitable habitat occurs within the Study Area.	No further actions are recommended for this species.
<i>Extriplex joaquiniana</i> San Joaquin spearscale	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>Fritillaria pluriflora</i> Adobe-lily	List 1B.2	A rare California species limited to northern California.	Unlikely. Suitable habitat for this species does not occur in the Study Area.	No further actions are recommended for this species.
<i>Isocoma arguta</i> <i>Carquinez golden bush</i>	List 1B.1	Rare and thrives on alkali flats and other mineral-rich soils.	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, List 1B.1	Mesic sites in cismontane woodland, alkaline playas, valley and foothill grassland. Vernal pools, swales, or low depressions. 1-445 m. Blooms March-June.	Moderate. Project Study Area overlaps known critical habitat.	Conduct pre-construction surveys to determine actual presence.
<i>Legenere limosa</i> legenere	List 1B.1	In beds of vernal pools. 1-880 m. Blooms April-June.	Unlikely. No suitable habitat occurs within the Study Area.	No further actions are recommended for this species.
<i>Navarretia leucocephala</i> Baker's navarretia	List 1B.1	An uncommon subspecies limited- <u>endemic</u> to California north of the Bay Area	Unlikely. No suitable habitat occurs within the Study Area.	No further actions are recommended for this species.
<i>Orcuttia inaequalis</i> <i>San Joaquin Valley Orcutt</i>	FT, SE List 1B.1	Occurs in vernal pools, which are wetlands that	Unlikely. No suitable habitat occurs within the	No further actions are recommended

<p>Table 4 Potential for Special-Status Species to Occur in the Proposed Project Study Area</p>				
Species	Status	Habitat	Potential for Occurrence	Recommendations
<i>Grass</i>		have standing water in the winter and early spring, and then progressively dry in the later spring and summer.	Study Area.	for this species.
<i>Northern Vernal Pool</i> Northern Vernal Pool	None	Are temporary pools of water that provide habitat for distinctive plants and animals. They are considered to be a distinctive type of wetland usually devoid of fish, and thus allow the safe development of natal amphibian and insect species unable to withstand competition or predation by fish.	Moderate. Project Study Area overlaps known critical habitat.	Conduct pre-construction surveys to determine actual presence.
<i>Plagiobothrys hystriculus</i> Bearded popcorn flower	List 1B.1	Annual herb that is believed to be extinct.	Unlikely. No suitable habitat occurs within the Study Area.	No further actions are recommended for this species.
<i>Puccinellia simplex</i> California alkaligrass	List 1B.2	Grows in mineral springs and other moist habitat with saline soils in the Central Valley	Unlikely. No suitable habitat occurs within 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 occurs within the Study Area.	No further actions are recommended for this species.
<i>Trifolium amoenum</i> Showy Indian Clover	FE, List 1B.1	Coastal bluff scrub, valley and foothill grassland, open sunny sites, swales. Sometimes on serpentine soils, roadsides, or eroding cliff face. 5-560 m. Blooms April-June.	Unlikely. Believed to be extirpated from Napa County (CNDDB 2008).	No further actions are recommended for this species.
<i>Trifolium depauperatum</i> var. <i>hydrophilum</i> saline clover	List 1B.2	Mesic, alkaline sites in valley and foothill grassland, vernal pools, marshes and swamps. 0-300 m. Blooms April-June.	Unlikely. No suitable habitat occurs within the Study Area.	No further actions are recommended for this species.
Mammals				
<i>Taxidea taxus</i> American Badger	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	Unlikely. No suitable habitat is present in the Study Area.	No further actions are recommended for this species.
Birds				
<i>Agelaius tricolor</i> Tricolored Blackbird	SSC	Usually nests over or near freshwater in dense cattails, tules, or thickets of willow,	Moderate. Proposed construction could extend into the	If construction does occur within the breeding/nesting

Table 4
Potential for Special-Status Species to Occur in the Proposed Project Study Area

Species	Status	Habitat	Potential for Occurrence	Recommendations
		blackberry, wild rose or other tall herbs.	breeding/nesting season (February 1 and August 31).	season (February 1 and August 31) conduct pre-construction surveys.
<i>Ammodramus savannarum</i> Grasshopper sparrow	List 1B.2	Forage on the ground in vegetation, mainly eating insects, especially grasshoppers and seeds.	Moderate. Proposed construction could extend into the breeding/nesting season (February 1 and August 31).	If construction does occur within the breeding/nesting season (February 1 and August 31) conduct pre-construction surveys.
<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.	Moderate. Proposed construction could extend into the breeding/nesting season (February 1 and August 31).	If construction does occur within the breeding/nesting season (February 1 and August 31) conduct pre-construction surveys.
<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.	Moderate. Proposed construction could extend into the breeding/nesting season (February 1 and August 31).	If construction does occur within the breeding/nesting season (February 1 and August 31) conduct pre-construction surveys.
<i>Elanus leucurus</i> White-tailed kite	FP	Common in the Central Valley and readily seen patrolling or hovering over lowland scrub or grassland looking for rodents.	Moderate. Proposed construction could extend into the breeding/nesting season (February 1 and August 31).	If construction does occur within the breeding/nesting season (February 1 and August 31) conduct pre-construction surveys.
<i>Rallus longirostris obsoletus</i> California Clapper Rail	FE, SE	Found in tidal salt marshes of the San Francisco Bay. Requires mudflats for foraging and dense vegetation on higher ground for nesting.	Moderate. Proposed construction could extend into the breeding/nesting season (February 1 and August 31).	If construction does occur within the breeding/nesting season (February 1 and August 31) conduct pre-construction surveys.
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 limited in the Study Area.	No further actions are recommended for this species.
<i>Clemmys marmorata</i> Western Pond Turtle	SSC	Occurs in perennial ponds, lakes, rivers and streams with suitable basking	Moderate. This species has the potential to occur within the Project	Conduct pre-construction survey.

Table 4
Potential for Special-Status Species to Occur in the Proposed Project Study Area

Species	Status	Habitat	Potential for Occurrence	Recommendations
		habitat (mud banks, mats of floating vegetation, partially submerged logs) and submerged shelter.	Study Area.	
<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. No suitable habitat occurs within the Study Area.	No further actions are recommended for this species.
<i>Rana boylei</i> Foothill yellow-legged frog	FSC, SCT, SSC	Occur in the Coast Ranges from the <u>Santiam River</u> in Marion County, <u>Oregon</u> south to the <u>San Gabriel River</u> in <u>Los Angeles County</u> and along the west slopes of the Sierra/Cascade mountain ranges in most of central and northern California.	Unlikely. No suitable habitat occurs within 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. No suitable habitat occurs within the Study Area.	No further actions are recommended for this species.
Invertebrates				
<i>Branchinecta conservancy</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.	Moderate. Project Study Area overlaps known critical habitat.	Conduct pre-construction surveys to determine actual presence.
<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 <u>Solano County, California</u> . Occupies <u>vernal pool</u> habitats, around which its <u>life cycle</u> is based.	Unlikely. Suitable vernal pool habitat is not present in the Study Area.	No further actions are recommended for this species.
<i>Lepidurus packardii</i> , Vernal pool tadpole shrimp	FE	Lives in the endangered vernal pool type of habitat, and other freshwater	Moderate. Project Study Area overlaps known critical habitat.	Conduct pre-construction surveys to

Table 4 Potential for Special-Status Species to Occur in the Proposed Project Study Area				
Species	Status	Habitat	Potential for Occurrence	Recommendations
		aquatic habitats including ponds, reservoirs, ditches, road ruts, and other natural and artificial temporary water bodies.		determine actual presence.
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.	Moderate. Suitable habitat is present in the Study Area.	Conduct pre-construction surveys to determine actual presence.
Key to status codes: FE Federal Endangered FT Federal Threatened FC Federal Candidate FD Federal De-listed FP Federal Proposed FPD Federal Proposed for De-listing FPT Federal Proposed Threatened FSC Federal Species of Concern 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 SP State Proposed SSC CDFW Species of Special Concern Draft SSC 4 April 2000 Draft CDFG Species of Special Concern CFP CDFW 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)				

5.3 Effects to Federal and State Listed Species and Habitat

This section describes the potential direct, indirect, and cumulative effects the Proposed Action may have to those species identified above as having a medium or higher potential to occur within the Action Area. Potential species and habitats deemed to be absent or unlikely to occur

Figure 5

are not discussed further below. Potential effects are defined as follows.

- **Direct Effect.** Those effects generated directly from the Proposed 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 Action and are later in time, such as the discharge of sediment or chemicals 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).

Direct and Indirect Effects

Construction of the Proposed Project/Action could likely have temporary direct and indirect effects to federal and state threatened and endangered species and habitat. The Proposed Project/Action could also incidentally take listed species if they are present in the Proposed Project/Action Area during construction activities. However, summarized below are mitigation measures that will be implemented during construction as necessary to reduce and/or avoid these potential adverse effects. Further, following construction, the Proposed Project/Action would not have any adverse effects on federal and state listed species and habitats.

Mitigation Measure BIO-1: Conduct Breeding and Nesting 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 white-tailed kite and golden eagle 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.
- 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.

Mitigation Measure BIO-2: Conduct A Preconstruction Survey for Special Status Wildlife Species. The City shall have a qualified biologist conduct a pre-construction survey for state and federal special status wildlife species no more than 10-days prior to construction. A combination of visual and trapping surveys may be performed with authorization from CDFW and/or USFWS. If a wildlife special species is found near any proposed construction areas, impacts on individuals and their habitat shall be avoided to the extent feasible. If occupied habitat can be avoided, an exclusion zone shall be established around the habitat and temporary suitable/authorized fencing shall be installed around the buffer area with "Sensitive Habitat Area" signs posted and clearly visible on the outside of the fence. If avoidance is not possible and the species is determined to be present in work areas, the biologist with approval from CDFW and/or USFWS may capture the wildlife special status species prior to construction activities and relocate them to nearby, suitable habitat a minimum of 300-feet from the work area. Exclusion fencing shall then be installed if feasible to prevent them from reentering the work area. For the duration of work in these areas, the biologist should conduct regular follow-up visits to monitor effectiveness.

Mitigation Measure BIO-3: Staging Areas and Access Routes. When possible, staging and access areas will be situated at the Easterly WWTP and/or in areas that are previously disturbed, such as developed areas, paved areas, parking lots, areas with bare ground or gravel, and areas clear of vegetation. When working on habitats that support state and/or federally listed species, disturbance to existing grades and vegetation will be limited to the actual site of the Proposed Project/Action and necessary access routes. Placement of all roads, staging areas, and other facilities will avoid and limit disturbance-sensitive habitats (e.g., riparian habitat, suitable habitats) as much as possible. All staging and material storage areas, including the locations where equipment and vehicles are parked overnight, will be placed outside of the flood zone of a watercourse, away from riparian habitat or wetland habitat, and away from any other sensitive habitats.

Mitigation Measure BIO-4: Environmental Awareness Training. All construction personnel shall be given environmental awareness training by the Proposed Project's environmental inspector or biological monitor before the start of construction. The training will familiarize all construction personnel with the federally listed species that may occur in the Action Area, their habitats, general provisions and protections afforded by the Endangered Species Act, measures to be implemented to protect these species, and the project boundaries. This training will be provided to any new worker before they are authorized to perform project work. As part of the environmental awareness training, construction personnel will be notified that no dogs or any other pets under control of construction personnel will be allowed in the Project/Action Area, and that no firearms will be permitted in the Action Area, unless carried by authorized security personnel or law enforcement.

Mitigation Measure BIO-5: Biological Monitor. As required, a CDFW and/or USFWS-approved Biological Monitor will be present on site for all construction activities that occur within 100-feet of any identified suitable habitats for state and/or federally listed species that may be present during the construction of the Proposed Project/Action. The City will submit the Biological Monitor's qualifications to the CDFW and the USFWS for approval 30-days prior to project construction. The Biological Monitor will ensure that all applicable avoidance and minimization measures are implemented during project construction. The Biological Monitor will also ensure that all vehicles entering the site are free of debris that may harbor organisms that could be introduced to the site, such as vegetation or mud from other areas. The Biological Monitor will also ensure that turbidity, sedimentation, and the release of materials such as dust or construction runoff are controlled, and that spill control measures are enacted properly. The Biological Monitor will oversee construction activities to ensure that no state or federally listed species and/or their habitats experience unintended effects. The Biological Monitor will have the authority to stop any work activities that could result in unintended adverse effects to covered species and/or their habitats.

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

Once constructed, the Proposed Project/Action would not adversely affect any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW and USFWS. No additional mitigation measures are required.

Cumulative Effects

The Proposed Project/Action would not have significant cumulative effects on biological resources. No other known development is currently planned in the Proposed Project/Action Area(s) that would adversely affect biological resources. In addition, the Proposed Project/Action would not have any long-term effects to biological resources in the region as once construction is complete.

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 and in Solano County and would not have any adverse interdependent and/or interrelated effects on biological resources.

Section 6 Determination of Effects

This section provides a summary and makes a determination as to the potential for the Proposed Project/Action to affect the federal and state listed species.

6.1 No Adverse Effect

Through the course of this study and analysis, it is our determination that the Proposed Project/Action, with the incorporation of the identified mitigation measures above, will not adversely affect the following federal and state species:

Plant Species

• <i>Astragalus tener</i> var. <i>tener</i>	alkali milk-vetch
• <i>Atriplex cordulata</i>	Heartscale
• <i>Atriplex parishii</i>	Brittlescale
• <i>Centromadia parryi</i>	Papoose tarplant
• <i>Chloropyran</i> mole	Hispid salty bird's-beak
• <i>Delphinium recurvatum</i>	Recurved larkspur
• <i>Downingia pusilla</i>	dwarf downingia
• <i>Extriplex joaquiniana</i>	San Joaquin spearscale
• <i>Fritillaria pluriflora</i>	Adobe-lily
• <i>Isocoma arguta</i>	<i>Carquinez golden bush</i>
• <i>Lasthenia conjugens</i>	Contra Costa goldfields
• <i>Legenere limosa</i>	legenere
• <i>Navarretia leucocephala</i>	Baker's navarretia
• <i>Orcuttia inaequalis</i>	<i>San Joaquin Valley Orcutt Grass</i>
• <i>Northern Vernal Pool</i>	Northern Vernal Pool
• <i>Plagiobothrys hystrix</i>	Bearded popcorn flower
• <i>Puccinellia simplex</i>	California alkaligrass
• <i>Symphyotrichum lentum</i>	Suisun Marsh aster
• <i>Trifolium amoenum</i>	Showy Indian Clover
• <i>Trifolium depauperatum</i> var. <i>hydrophilum</i>	saline clover

Mammals

• <i>Taxidea taxus</i>	American Badger
------------------------	-----------------

Birds

• <i>Agelaius tricolor</i>	Tricolored Blackbird
• <i>Ammodramus savannarum</i>	<i>Grasshopper sparrow</i>
• <i>Athene cunicularia</i>	Burrowing Owl
• <i>Buteo swainsoni</i>	Swainson's Hawk
• <i>Elanus leucurus</i>	White-tailed kite
• <i>Rallus longirostris obsoletus</i>	California Clapper Rail

Fish

• <i>Hypomesus transpacificus</i>	Delta smelt
-----------------------------------	-------------

Amphibians

- | | |
|----------------------------------|-----------------------------|
| • <i>Ambystoma californiense</i> | California Tiger Salamander |
| • <i>Clemmys marmorata</i> | Western Pond Turtle |
| • <i>Rana aurora draytoni</i> | California Red-legged Frog |
| • <i>Rana boylei</i> | Foothill yellow-legged frog |

Crustaceans

- | | |
|--|----------------------------------|
| • <i>Branchinecta conservatoria</i> | Conservancy fairy shrimp |
| • <i>Branchinecta lynchi</i> | Vernal pool fairy shrimp |
| • <i>Desmocerus californicus dimorphus</i> | Elderberry longhorn beetle |
| • <i>Elaphrus viridis</i> | <i>Delta Green Ground beetle</i> |
| • <i>Lepidurus packardii</i> | Vernal pool tadpole shrimp |

Reptiles

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

Section 7 Bibliography

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

- California Department of Forestry and Fire Protection. *Fire Severity Mapping*. August 2019.
- California Natural Diversity Database. 2019. <http://www.dfg.ca.gov/biogeodata/cnddb>
- California Department of Toxic Substances. *Envirostor database and GIS System*. 2019.
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- City of Vacaville. *General Plan*. 2015.
- City of Vacaville. Draft Recycled Water Master Plan. 2020.
- Federal Emergency Management Agency. *100-Year Flood Zone Maps*. 2019.
- Solano County Water Resources Agency. Solano County Multispecies Habitat Conservation Plan. 2019. <http://www.scwa2.com/water-supply/habitat/solano-multispecies-habitat-conservation-plan>
- U. S. Fish and Wildlife Service species list database and Wetland Tracker. 2019. <http://www.fws.gov/>

Attachment A

Federal and State Species Lists



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad IS (Elmira (3812138) OR Allendale (3812148))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Agelaius tricolor</i> tricolored blackbird	ABPBXB0020	None	Candidate Endangered	G2G3	S1S2	SSC
<i>Ambystoma californiense</i> California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
<i>Ammodramus savannarum</i> grasshopper sparrow	ABPBXA0020	None	None	G5	S3	SSC
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	PDFAB0F8R1	None	None	G2T1	S1	1B.2
<i>Athene cunicularia</i> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<i>Atriplex cordulata</i> var. <i>cordulata</i> heartscale	PDCHE040B0	None	None	G3T2	S2	1B.2
<i>Atriplex depressa</i> brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
<i>Bombus occidentalis</i> western bumble bee	IIHYM24250	None	None	G2G3	S1	
<i>Branchinecta conservatio</i> Conservancy fairy shrimp	ICBRA03010	Endangered	None	G2	S2	
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
<i>Branchinecta mesoallensis</i> midvalley fairy shrimp	ICBRA03150	None	None	G2	S2S3	
<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>hispidum</i> hispid salty bird's-beak	PDSCR0J0D1	None	None	G2T1	S1	1B.1
<i>Delphinium recurvatum</i> recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
<i>Downingia pusilla</i> dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
<i>Elanus leucurus</i> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
<i>Elaphrus viridis</i> Delta green ground beetle	IICOL36010	Threatened	None	G1	S1	
<i>Emys marmorata</i> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<i>Extriplex joaquinana</i> San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2



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>Fritillaria pluriflora</i> adobe-lily	PMLIL0V0F0	None	None	G2G3	S2S3	1B.2
<i>Hydrochara rickseckeri</i> Ricksecker's water scavenger beetle	IICOL5V010	None	None	G2?	S2?	
<i>Isocoma arguta</i> Carquinez goldenbush	PDAST57050	None	None	G1	S1	1B.1
<i>Lasthenia conjugens</i> Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
<i>Legenere limosa</i> legenere	PDCAM0C010	None	None	G2	S2	1B.1
<i>Lepidurus packardii</i> vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G4	S3S4	
<i>Linderiella occidentalis</i> California linderiella	ICBRA06010	None	None	G2G3	S2S3	
<i>Navarretia leucocephala ssp. bakeri</i> Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
<i>Northern Claypan Vernal Pool</i> Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
<i>Orcuttia inaequalis</i> San Joaquin Valley Orcutt grass	PMPOA4G060	Threatened	Endangered	G1	S1	1B.1
<i>Plagiobothrys hystriculus</i> bearded popcornflower	PDBOR0V0H0	None	None	G2	S2	1B.1
<i>Puccinellia simplex</i> California alkali grass	PMPOA53110	None	None	G3	S2	1B.2
<i>Rana boylei</i> foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
<i>Symphyotrichum lentum</i> Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2
<i>Taxidea taxus</i> American badger	AMAJF04010	None	None	G5	S3	SSC
<i>Trifolium amoenum</i> two-fork clover	PDFAB40040	Endangered	None	G1	S1	1B.1
<i>Trifolium hydrophilum</i> saline clover	PDFAB400R5	None	None	G2	S2	1B.2
<i>Valley Needlegrass Grassland</i> Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	

Record Count: 38



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

Phone: (916) 414-6600 Fax: (916) 414-6713



In Reply Refer To:

April 01, 2019

Consultation Code: 08ESMF00-2019-SLI-1540

Event Code: 08ESMF00-2019-E-04945

Project Name: City of Vacaville Recycled Water 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(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2019-SLI-1540

Event Code: 08ESMF00-2019-E-04945

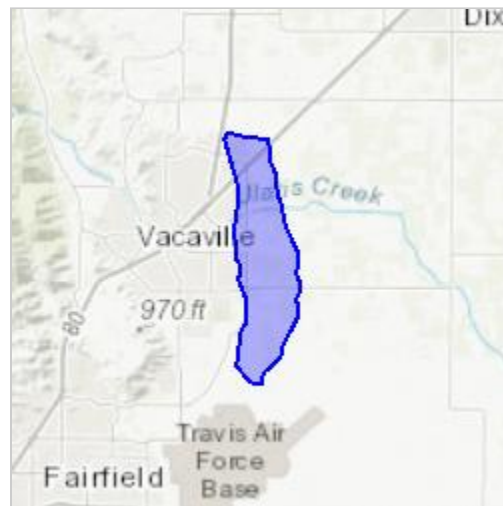
Project Name: City of Vacaville Recycled Water Project

Project Type: WATER SUPPLY / DELIVERY

Project Description: Recycled Water Pipeline System

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/38.34850290315879N121.92268909471274W>



Counties: Solano, CA

Endangered Species Act Species

There is a total of 13 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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

Birds

NAME	STATUS
California Clapper Rail <i>Rallus longirostris obsoletus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4240	Endangered

Reptiles

NAME	STATUS
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Delta Green Ground Beetle <i>Elaphrus viridis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2319	Threatened
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850 Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp <i>Branchinecta conservatio</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is final critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Contra Costa Goldfields <i>Lasthenia conjugens</i> There is final critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7058	Endangered
San Joaquin Orcutt Grass <i>Orcuttia inaequalis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5506	Threatened
Showy Indian Clover <i>Trifolium amoenum</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6459	Endangered

Critical habitats

There are 3 critical habitats wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Contra Costa Goldfields <i>Lasthenia conjugens</i> https://ecos.fws.gov/ecp/species/7058#crithab	Final
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> https://ecos.fws.gov/ecp/species/498#crithab	Final
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> https://ecos.fws.gov/ecp/species/2246#crithab	Final

Appendix C

Cultural Resources Investigation Report

Cultural Resources Investigation Report

City of Vacaville Recycled Water Project

Prepared by:



SMB Environmental, Inc.

September 2020

CONFIDENTIALITY NOTICE: The contents of this document are confidential due to the sensitive nature and non-renewable value of cultural resources. The legal authority to restrict cultural resource information can be found in California Government Code sections 6254.10 and 6254(r); California Code of Regulations Section 15120(d); and Section 304 of the National Historic Preservation Act of 1966.

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Attachment A.....	AB 52/Native American Correspondence
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Section 1 - Introduction

This document is a cultural resources inventory study on the City of Vacaville's (City) proposed Recycled Water Project (Proposed Project/Action). This report presents the Project Location and Background, Proposed Project/Action Description, Area of Potential Effect, Regulatory Framework, Environmental Setting, 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:

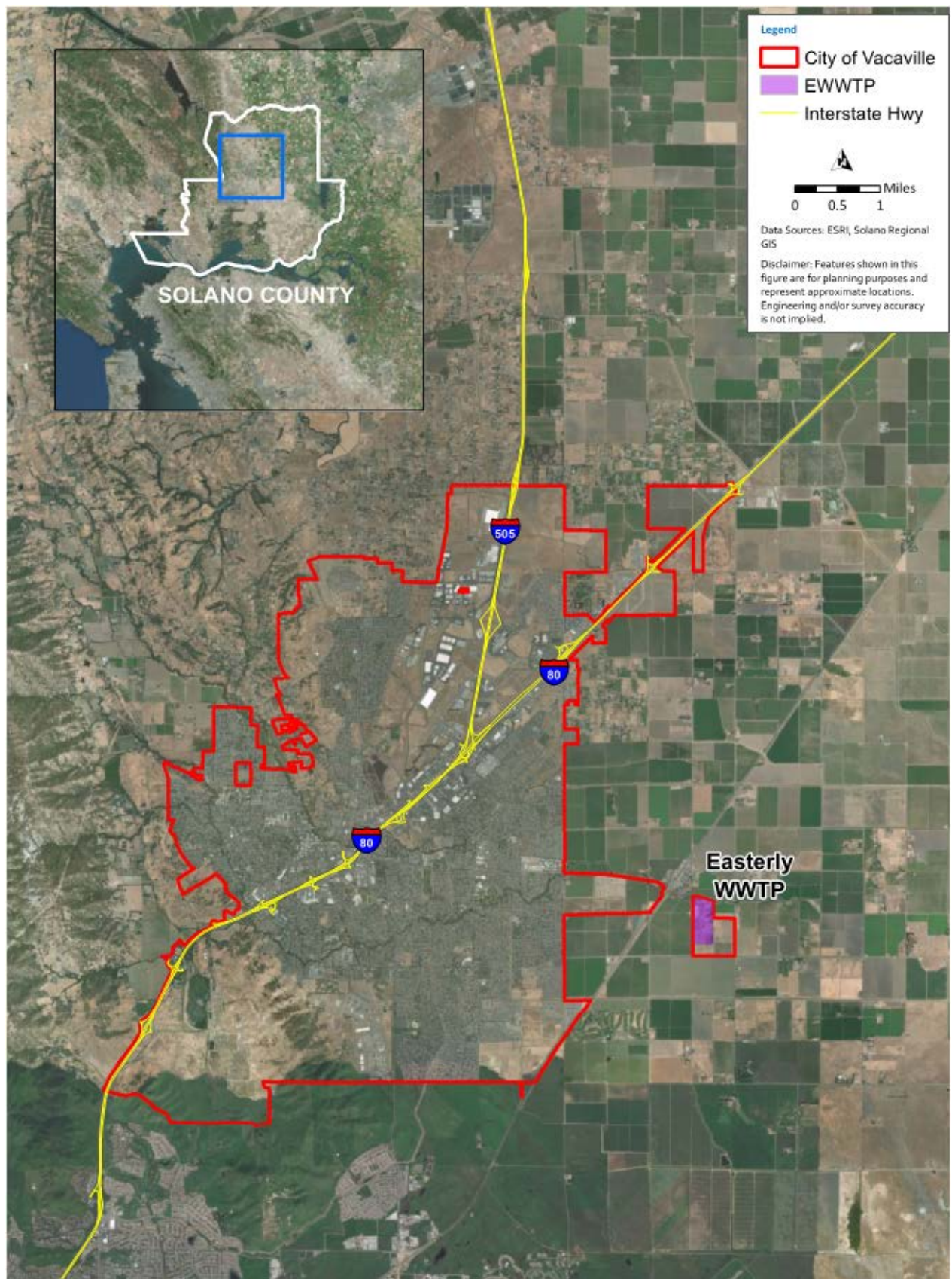
- **Historic Resources:** Historic resources are associated with the recent past. In California, historic resources are typically associated with the Spanish, Mexican, and American periods in the State's history and are generally less than 200 years old.
- **Archaeological Resources:** Archaeology is the study of prehistoric human activities and cultures. Archaeological resources are generally associated with indigenous cultures.
- **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 (SRF) 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) as well as the requirements of California's Assembly Bill 52 (AB 52) for Tribal Cultural Resources.

1.1 Project Location and Background

As shown on Figure 1, the City is located in northern Solano County, midway between San Francisco and Sacramento. The City of Vacaville, incorporated in 1892 and currently comprising just under 27 square miles, has a beautiful setting bordered by rolling hillsides, fruit orchards and fertile farmland. With an elevation ranging from 90- to 300-feet, Vacaville enjoys warm summers and mild winters, with an average summer high of 94 degrees and an average winter low of 36 degrees. Annual rainfall averages about 24 inches. The City's rich history has transformed the community from a small agricultural town into a thriving and progressive city; now a diverse population of 97,446 residents call Vacaville home. While the City's population history and demographics show its rapid growth, Vacaville remains a "small town at heart," whose residents pride themselves on the high level of community involvement.

The City owns and operates the Easterly Wastewater Treatment Plant (EWWTP or Easterly WWTP), which serves approximately 97,000 people throughout the City of Vacaville, the Community of Elmira, the California Medical Facility, and most of the Vaca Valley Industrial Park. The Easterly WWTP, located at 6040 Vaca Station Road, Elmira, CA 95625. The Easterly WWTP discharges wastewater to Old Alamo



Creek, which is a tributary to New Alamo Creek, which is a tributary to Ulati Creek, which eventually outlets to Cache Slough and the Sacramento-San Joaquin River Delta (Delta).

Since its construction in 1959, treated effluent from the Easterly WWTP has been discharged into Old Alamo Creek. The contributing watershed to Old Alamo Creek upstream of the Easterly WWTP was dramatically reduced in the early 1960s when New Alamo Creek, a larger, man-made conveyance channel, was constructed as part of a federal flood control project. As part of the flood control project, Old Alamo Creek downstream of the Easterly WWTP was partially realigned to flow into New Alamo Creek.

Old Alamo Creek originally shared the beneficial uses assigned to the Delta since it is a tributary to the Delta. However, in 2005, the Central Valley Regional Water Quality Control Board (CVRWQCB), amended the Basin Plan for the Sacramento and San Joaquin River Basins to remove certain beneficial uses from those initially assigned to Old Alamo Creek. Specifically, the CVRWQCB concluded that drinking water supply is not an existing beneficial use for Old Alamo Creek and that beneficial use probably cannot be feasibly attained in the future. This is due to the ephemeral, intermittent, or low flows associated with Alamo Creek, and the release of additional treated sewage effluent from the Easterly WWTP as the City of Vacaville grew.

In 2006, the State Water Resources Control Board (SWRCB), declared Old Alamo Creek was an exception to the Sources of Drinking Water Policy. The exception did not modify the beneficial uses of New Alamo Creek, which meant that the flow in Old Alamo Creek must meet or exceed the water quality requirements of New Alamo Creek at the convergence of Old Alamo Creek and New Alamo Creek. Since the Easterly WWTP discharge dominates the flow in Old Alamo Creek during most periods, its effluent must meet requirements similar to those that apply to New Alamo Creek.

Today, the Easterly WWTP operates 24 hours, seven days a week (24/7) and treats an average of 7.5 million gallons of wastewater per day and has an average dry weather treatment capacity of 15 MGD. The plant operates under a National Pollutant Discharge Elimination System (NPDES) permit issued and regulated by the Central Valley Regional Water Quality Control Board (Regional Board) to provide Title 22 tertiary level treatment. The Easterly WWTP is a state-of-the-art wastewater treatment plant that utilizes many complex processes to produce treated wastewater and Title 22 recycled water. Wastewater undergoes primary, secondary and tertiary treatment and disinfection before being released into Alamo Creek, where it travels to Cache Slough, and eventually out to the Delta.

1.2 Goal and Objective and Purpose and Need

The purpose of the Proposed Project is to provide a variety of beneficial recycled water uses including agricultural irrigation, urban irrigation, and industrial reuse of Easterly WWTP tertiary treated recycled water, consistent with the recommended project identified in the *City of Vacaville, Draft Recycled Water Master Plan, April 2020*.

Section 2 – Proposed Project/Action Description

This section provides a summary of the City’s proposed Recycled Water Project and construction considerations and commitments.

2.1 Proposed Project/Action Project

The purpose of the Proposed Project is to provide approximately 2,830 acre-feet of tertiary treated recycled water from the Easterly WWTP for a variety of beneficial recycled water uses including agricultural irrigation, urban irrigation, and industrial reuse - consistent with the recommended project identified in the *City of Vacaville, Draft Recycled Water Master Plan, April 2020*.¹

As shown on Figure 2, the Proposed Project/Action includes approximately 9-miles (48,000 linear feet) of new recycled water distribution pipelines that would connect with the approximately 20-miles of the City’s existing recycled water pipelines. Table 1 provides a summary of the proposed pipeline lengths and diameter. The proposed distribution system has two pipeline branches ranging in size from 6-inch to 20-inches in diameter. One branch extends southeast of Easterly WWTP to serve the planned athletic fields adjacent to the City’s Easterly WWTP, one direct agricultural parcel, and Cypress Lakes Golf Course. The other branch extends west from Easterly WWTP and then branches to both the north and the south along Leisure Town Road. This northwest branch utilizes an abandoned sewer line to cross the railroad tracks between Fry Road and Elmira Road and also utilizes existing recycled water lines installed within some of the new developments and along Leisure Town Road. The northwest distribution branch serves urban irrigation customers in new developments along Leisure Town Road, one direct agricultural customer south of Elmira Road and west of the railroad, and a few industrial reuse customers in the Vaca Valley Business Park located between I-80 and I-505. Implementation of the distribution pipelines is phased into immediate, near-, and long-terms.

Table 1 Proposed Project/Action Pipeline Facilities			
Phase	Diameter (in)	Total Pipeline Length ⁽¹⁾ (ft)	New Pipeline Length (ft)
Immediate	6 ⁽²⁾	400	400
	8	29,700	0
	12	22,900	500
	14	2,400	1,400
	20	5,700	5,700
Immediate Phase Total:		61,100	8,000
Near	12	13,300	10,100
	14 ⁽³⁾	16,100	16,100
	16	1,800	1,800
Near Phase Total:		31,200	28,000

¹ Please note that the City would like to provide additional Easterly WWTP effluent discharges to downstream users for diversions via water transfer agreements along Alamo Creek and Cache Slough prior to discharge to the Delta. However, at the time of this publication, these specific plans and details are not known in sufficient detail to support a thorough and complete environmental analysis. As such, this environmental document does not cover these activities and additional project specific environmental analysis will be required once these specific water transfer plans and details become known including, but not limited to, the specific place of use(s), quantities, and intended uses of the tertiary treated recycled water effluent.

Table 1 Proposed Project/Action Pipeline Facilities			
Phase	Diameter (in)	Total Pipeline Length ⁽¹⁾ (ft)	New Pipeline Length (ft)
Long	12	4,100	4,100
	16	7,900	7,900
Long Phase Total:		12,000	12,000
Overall Total:		104,300	48,000
Notes:			
(1) Length includes existing and planned development recycled water line lengths.			
(2) Assumes 6-inch connection to existing 3W line to serve Athletic Fields in immediate phase.			
(3) Includes 700-feet of 14-inch pipeline at Easterly from diversion wet well to new storage.			

Table 2 lists individual customer average day and peak day demands. Demands are assumed to continue without change from one phase into the following phase (e.g. all immediate term demands are included in the near- and long-term phases). Table 3 presents the annual demands of all customers categorized by the type of use.

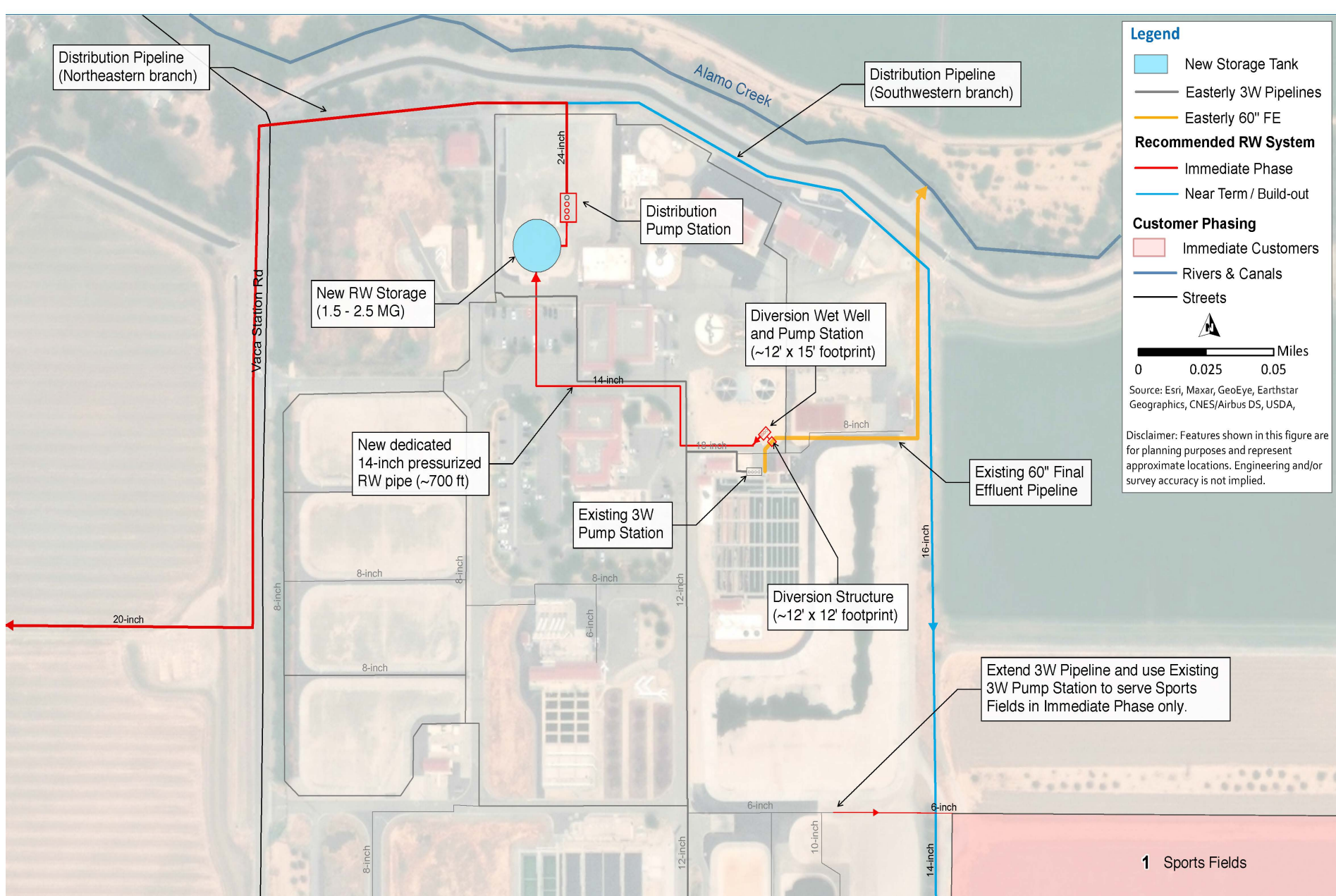
Table 2 Customer Demands by Phase					
ID	Customers	Type of Use (1)	Avg Day Demand (mgd)	Avg Day Demand (afy)	Peak Day Demand (mgd)
Immediate Term					
1	New City Athletic Fields	UrbIrr	0.10	110	0.29
3	Vanden Meadows Development	UrbIrr	0.09	100	0.26
4	Southtown Development	UrbIrr	0.12	130	0.33
5	Southtown Commons / Moody	UrbIrr	0.02	20	0.05
7	Roberts Ranch	UrbIrr	0.13	145	0.38
8	Brighton Landing	UrbIrr	0.10	115	0.30
9	The Farm at Alamo Creek	UrbIrr	0.11	125	0.32
19	Elmira	Direct Ag	0.20	230	0.55
Immediate Term Subtotal			0.87	975	2.48
Near Term					
2	Cypress Lakes Golf Course	UrbIrr	0.30	340	0.88
6	East of Leisure Town Road Development (South)	UrbIrr	0.07	75	0.19
10	East of Leisure Town Road Development (North)	UrbIrr	0.22	245	0.63
11	Green Tree Development	UrbIrr	0.07	75	0.19
17C	Agricultural Customer	Direct Ag	0.39	435	1.04
Near Term Subtotal			1.04	1,170	2.94
Long Term					
13	North Village	UrbIrr	0.33	370	0.96
15	Genentech	Industrial	0.14	155	0.14
16A	Vaca Valley Business Park (excluding Genentech)	Industrial	0.14	160	0.14
Long Term Subtotal			0.61	2,525	5.91
TOTAL			2.52	2,830	6.66
Notes:					
(1) Urb Irr = Urban Irrigation, DD = Downstream Diversions, Direct Ag = Direct Agricultural Reuse					

Table 3 Annual Demand Summary by Reuse Type			
Phase	Urban Irrigation (afy)	Direct Agriculture (afy)	Industrial (afy)
Immediate	745	230	0
Near	735	435	0
Long	370	0	315
Total	1,850	665	315

As shown on Figure 3, the Proposed Project/Action also includes other facilities including a new diversion structure and wet well, a new 2.5MG recycled water storage tank, a new pump station, and a water truck filling station at the Easterly WWTP. In addition, and as shown in Figures 2 and 4, the Proposed Project/Action also includes an off-site recycled water storage tank and booster pump station, located adjacent to the Green Tree Development on the east side of Leisure Town Road. Each are discussed below.

- New Easterly WWTP Diversion Structure and Wet Well.** The Proposed Project/Action includes a new diversion structure and wet well at the Easterly WWTP to divert recycled water flows from the final effluent outfall pipeline downstream of the 3W system pump station. Diverting at this location would not interfere with plant 3W demands or operations. The diversion structure is sized to meet Easterly WWTP's peak hour wet weather flow of 55-mgd, and allow for the full effluent to discharge to Alamo Creek if needed. The structure would also allow for flow to the creek year-round, if required. Diverted recycled water would flow into a wet well and pump station and be conveyed via a new 700-foot dedicated 14-inch pressurized pipeline to storage.
- New Easterly WWTP Recycled Water Storage.** The Proposed Project/Action includes a new 1.5- to 2.5-MG recycled water storage tank at the Easterly WWTP to mitigate the risk of not having enough storage capacity during wet weather events and to provide a long-term recycled water storage solution.
- New Easterly WWTP Pump Stations.** The Proposed Project/Action includes one (1) new 300-hp pump station and a new 20-inch diameter pipeline located at Easterly WWTP to serve the immediate phase needs of the northwest distribution branch. In the immediate phase the new City Athletic Fields will be served via the existing 3W pumps and distribution system at Easterly WWTP. A new 6-inch pipeline extension off the existing system will be built to connect the athletic fields (Shown in Figure 3). In the future, these pump stations will be upsized to 625-hp and a southeast branch of the distribution system will be added to serve the City athletic fields and other customers in the southeast. It is assumed that the pump stations, sized for peak hour demand flows will serve the northwest and southeast pipeline branches on a continuous basis.
- Water Truck Filling Station.** The Proposed Project/Action also includes a recycled water truck filling station located at Easterly WWTP. The filling station would tie in to the City's existing Recycled Water System (3W) at the Easterly WWTP and require limited additional infrastructure. This filling station would provide recycled water for City services such as dust control, street cleaning, sewer flushing, and use in construction, among others. This would provide a community benefit and help the City defer water costs. There would also be potential to expand





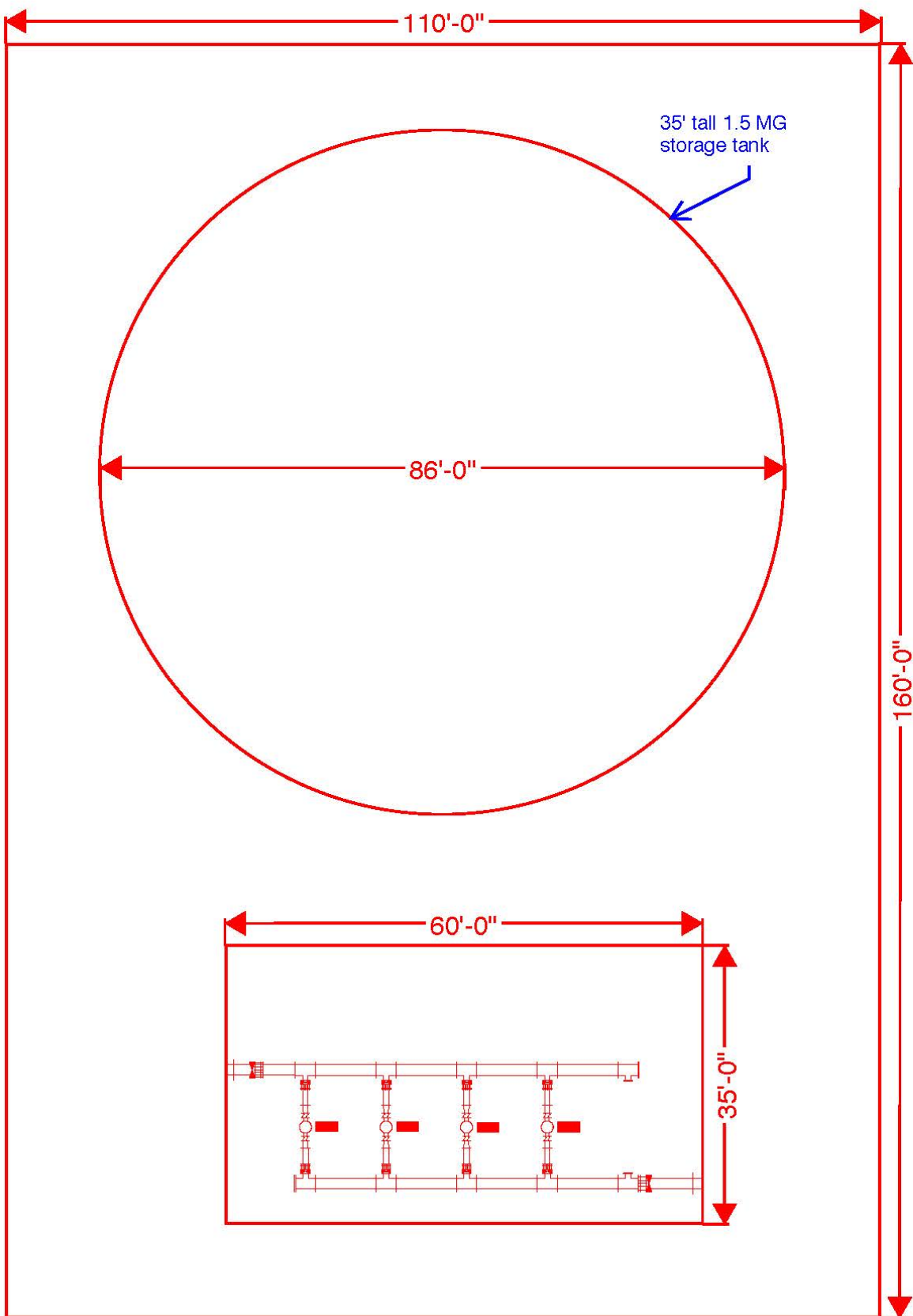


Figure 4
Off-Site Water Storage Tank and
Booster Pump Station Layout

access to the truck filling station to other commercial entities within the City and possibly to the general public. The exact site of the filling station at Easterly WWTP is to be determined, but would be located such that interaction with other plant traffic would be minimized and it would not disrupt any part of plant operations.

- **New Off-Site Recycled Water Storage Tank and Booster Pump Station.** In the immediate and near-term phases, the Proposed Project/Action will use a new storage tank located at the Easterly WWTP to store up to 2.5-MG of recycled water prior to distribution. However, as shown on Figure 4, the Proposed Project/Action includes a new 1.5-MG storage tank and booster pump station for the long-term phase and would be located on an approximately 110- by 160-foot parcel adjacent to the Green Tree Development on the east side of Leisure Town Road and would deliver recycled water flows to customers north of I-80. The Proposed storage tank would be an above ground steel tank located on a parcel with approximate dimensions of 35-feet high and 86-feet in diameter and would store water for long-term phase customers located north of I-80. The new 150-hp booster pump station will be used to help minimize overall pumping energy costs and serve customers in the long-term phase.

2.2 Project Construction

The Proposed Project is expected to begin in the summer of 2021 and continue over approximately a 2-year period and ending in 2023. Construction work will typically be done within normal working hours, weekdays between the hours of 7 a.m. and 7 p.m., and possibly on Saturdays between the hours of 8 a.m. and 5 p.m. The Proposed Project/Action would be constructed primarily within existing paved and unpaved roadways and any damages occurring during construction will be returned to the pre-construction condition or better. Detailed below is a summary of the construction techniques and activities.

- The majority of the pipelines would be installed using conventional cut and cover construction techniques and installing pipe in open trenches. It is assumed that up to a 12-foot wide construction corridor would be used to help maximize the efficiency during construction. However, in most places a 3-to-5-foot construction corridor could be realized, especially for the smaller diameter pipelines. It is anticipated that excavation would typically be no more than 3-5 feet wide and 3-to-6-feet deep.
- All creeks, drainages, wetlands, and/or riparian areas will be avoided and/or will be crossed using trenchless construction techniques². All construction activities will occur will not occur during rainy weather and during the months between October 15 and through April 1.

² Trenchless technology is a type of subsurface construction work that requires few trenches or no continuous trenches. It is a rapidly growing sector of the [construction](#) and [civil engineering](#) industry. Trenchless technology can be defined as "a family of methods, materials, and equipment capable of being used for the installation of new or replacement or rehabilitation of existing underground infrastructure with minimal disruption to surface traffic, business, and other activities." Trenchless construction includes such construction methods as [tunneling](#), [micro-tunneling](#) (MTM), horizontal [directional drilling](#) (HDD) also known as [directional boring](#), [pipe ramming](#) (PR), [pipe jacking](#) (PJ), [moling](#), horizontal auger [boring](#) (HAB) and other methods for the installation of pipelines and cables below the ground with

- Dewatering of the pipeline as a result of hydrostatic testing during construction as well as any dewatering as a result of operations and maintenance activities shall be discharged to land and not into any creeks, drainages, or waterways and shall require prior approval from the Central Valley Regional Water Quality Control Board (Central Valley RWQCB).

Construction activities for this kind of project will typically occur with periodic activity peaks, requiring brief periods of significant effort followed by longer periods of reduced activities. In order to characterize and analyze potential construction impacts, the City has assumed that each phase of the project would be constructed by two (2) crews of 10-to-15 workers each and would proceed at a rate of approximately 500-1,000 feet per day. However, specific details may change or vary slightly. Staging areas for storage of pipe, construction equipment, and other materials would be placed at locations that would minimize hauling distances and long-term disruption.

Excavation and grading activities would be necessary for construction of the Proposed Project/Action. Excavated materials resulting from site preparation would either be used on-site during construction or disposed of at a fill area authorized by the City. It is not anticipated that any soils would be imported for this project. Additional truck trips would be necessary to deliver materials, equipment, and asphalt-concrete to the site. During peak excavation and earthwork activities, the Proposed Project/Action could generate up to 40 round-trip truck trips per day. In support of these activities and for the assumptions for this document, the types of equipment that may be used at any one-time during construction may include, but not limited to:

- Track-mounted excavator
- Backhoe
- Grader
- Crane
- Dozer
- Compactor
- Trencher/boring machine
- End and bottom dump truck
- Front-end loader
- Water truck
- Flat-bed delivery truck
- Forklift

minimal excavation. Large diameter [tunnels](#) such as those constructed by a [tunnel boring machine](#) (TBM), and [drilling and blasting](#) techniques are larger versions of subsurface construction. The difference between trenchless and other subsurface construction techniques depends upon the size of the passage under construction. Trenchless construction requires considering soil characteristics and the loads applied to the surface. In cases where the soil is sandy, the water table is at shallow depth, or heavy loads like that of urban traffic are expected, the depth of excavation has to be at a depth such that the pressure of the load on the surface does not affect the bore, otherwise there is danger of surface caving in.

- Compressor/jack hammer
- Asphalt paver & roller
- Street sweeper

It is recognized that details of the construction activities and methods may change slightly as the specific details will be developed during final design and by the selected contractor. However, this description provides sufficient information to base the conclusions to probable environmental impacts associated with construction activities for this kind of project. Therefore, as long as the construction methods are generally consistent with these methods and do not conflict with any of the City's design standards or established ordinances, and does not create any new potential environmental impacts that are not described within this document, then no new environmental analyses will likely be required for any minor change in construction activities, timing, and/or schedule.

2.3 Facility Operations and Maintenance

The recycled water treatment and conveyance system will be operated by existing City operations and maintenance staff. The system will operate 24 hours per day and 7 days per week and produce an average of 2,830 afy. It is anticipated that the irrigation schedule for urban irrigation users will occur 8 hours a day, from 9 PM to 5 AM and direct agricultural and industrial users will receive water on a 24 hours per day schedule. Operation and maintenance of the proposed facilities are not anticipated to increase the number of permanent workers or employees.

2.4 Compliance with CCR Title 22 and State Board's Recycled Water Policy

The Proposed Project/Action will be designed and operated in accordance with the applicable requirements of CCR Title 22 and any other state or local legislation that is currently effective or may become effective as it pertains to recycled water. The State Board adopted a Recycled Water Policy (RW Policy) in 2009 to establish more uniform requirements for water recycling throughout the State and to streamline the permit application process in most instances. As part of that process, the State Board prepared an Initial Study and Mitigated Negative Declaration for the use of recycled water. The newly adopted RW Policy includes a mandate that the State increase the use of recycled water over 2002 levels by at least 1,000,000 afy by 2020 and by at least 2,000,000 afy by 2030. Also included are goals for storm water reuse, conservation and potable water offsets by recycled water. The onus for achieving these mandates and goals is placed both on recycled water purveyors and potential users. The State Board has designated the Regional Water Quality Control Boards as the regulating entities for the Recycled Water Policy. In this case, the Central Valley Regional Water Quality Control Board (Central Valley RWQCB) is responsible for permitting recycled water projects throughout the Central Valley Area, including the City of Vacaville.

The Proposed Project will provide high quality unrestricted use tertiary treated recycled water and make it available to users within the City. All irrigation systems will be operated in accordance with the requirements of Title 22 of the CCR, the State Board Recycled Water Policy, and any other local legislation that is effective or may become effective as it pertains to recycled water and any reclamation permits issued by the Central Valley RWQCB. Reclamation permits typically require the following:

- Irrigation rates will match the agronomic rates of the plants being irrigated;
- Control of incidental runoff through the proper design of irrigation facilities;
- Implementation of a leak detection program to correct problems within 72 hours or prior to the release of 1,000 gallons whichever occurs first;
- Management of ponds containing recycled water to ensure no discharges; and
- Irrigation will not occur within 50-feet of any domestic supply wells, unless certain conditions have been met as defined in Title 22.

2.5 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. As shown in Figures 2 and 3 above, the APE includes the City’s Easterly WWTP and the proposed pipelines to the customer service areas. Trenching for installing of replacement of pipelines would typically require a width of 3- to 5-feet and a vertical depth of approximately 3-to 6-feet deep. Therefore, the vertical APE would be typically no more than 6-feet.

Section 3 - 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.

3.1 Federal Regulations

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

National Historic Preservation Act. The National Historic Preservation Act of 1966 (NHPA) established the National Register of Historic Places (NRHP) as the official list of the Nation’s historic places deserving of preservation. Buildings, structures, districts, archaeological sites, or objects evaluated for listing on the NRHP should be at least 50 years old (barring exceptional circumstances), and should meet at least one of the following criteria:

- A. Associated with events that have made a significant contribution to the broad patterns of our history;
- B. Associated with the lives of persons significant in our past;
- C. Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic values, represent a significant and distinguishable entity whose components may lack individual distinction;
- D. Have yielded, or may be likely to yield, information important in prehistory or history. Criterion D is usually reserved for archaeological and paleontological resources.

To be eligible, a property must also retain sufficient integrity of location, design, setting, materials, workmanship, feeling, or association to convey its significance. Definitions and procedures for the NRHP are established at Title 36 Code of Federal Regulations (CFR) Parts 60 and 63.

Section 106 of the NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties. Local governments that receive grants or require permits from Federal Agencies may be required to determine whether a project has the potential to affect historic properties; if it does, the property must be evaluated for its eligibility to the NRHP. If a property is found eligible, and it is likely to be adversely affected by a Federal undertaking, mitigation measures are usually required. Section 106 procedures are outlined at Title 36 Code of Federal Regulations (CFR) Part 800.

American Indian Religious Freedom Act and Native American Graves and Repatriation Act. The American Indian Religious Freedom Act recognizes that Native American religious practices, sacred sites, and sacred objects have not been properly protected under other statutes. It establishes as national policy that traditional practices and beliefs, sites (including right of access), and the use of sacred objects shall be protected and preserved.

The Native American Graves and Repatriation Act of 1990 establishes procedures for the disposition of Native American burials and burial-associated artifacts that may be discovered during Federal undertakings or on Federal lands. The act provides for repatriation of human remains, funerary objects, or sacred objects to an appropriate tribal descendant.

3.2 State Regulations

The relevant state regulations are discussed below.

California Environmental Quality Act (CEQA). CEQA requires that lead agencies determine whether their projects may cause a substantial adverse change to a historical resource or unique archaeological resource, which is considered to be a significant effect on the environment (Public Resources Code §21084.1). CEQA defines “historical resource” as a property determined eligible for the National Register of Historic Places (NRHP), the California Register of Historic Resources (CRHR), or local registers by a lead agency (14 Code of California Regulations §15064.5). The CRHR eligibility criteria are modeled on those for the NRHP and include:

1. Association with events that have made a significant contribution to the broad patterns of our history;
2. Association with the lives of persons significant in our past;
3. Embodiment of the distinctive characteristics of a type, period, or method of construction, represents the work of a master, possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
4. Has yielded, or is likely to yield, information important to prehistory or history.

Resources determined eligible for the NRHP are automatically listed on the CRHR. In addition, historic landmark designations by cities and counties are also presumptively eligible for the CRHR. A property that has been determined eligible to the CRHR or NRHP is considered a historical resource for the purposes of CEQA, whether or not it has been formally listed on the CRHR.

A “unique archaeological resource” is defined in CEQA statute §15064.5(g) as an archaeological artifact, object, or site that “without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

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

These eligibility criteria mirror that of the CRHR, so that practically speaking any resource meeting the definition of a unique archaeological resource will also meet the eligibility criteria of the CRHR.

A “substantial adverse change” under CEQA can include physical demolition, destruction, relocation, or alteration of a historical resource or its immediate surroundings in a way that “materially impairs” its significance in such a way as to make it ineligible for the CRHR.

CEQA emphasizes avoidance of archaeological and historical resources as the preferred means of reducing potential significant environmental effects resulting from projects. If avoidance is not feasible, an excavation program or some other form of mitigation must be developed to mitigate the impacts. In most cases, whenever a project adversely impacts historic resources, a mitigated Negative Declaration or EIR is required under CEQA. The following are steps typically taken to assess and mitigate potential impacts to cultural resources for the purposes of CEQA:

- Identify cultural resources,
- Evaluate the significance of the cultural resources found,
- Evaluate the effects of the project on cultural resources, and
- Develop and implement measures to mitigate the effects of the project on cultural resources that would be significantly affected.

California PRC Section 5097.5. California PRC Section 5097.5 prohibits excavation or removal of any “vertebrate paleontological site...or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands.” Public lands are defined to include lands owned by or under the jurisdiction of the state or any city, county, district, authority or public corporation, or any agency thereof. Section 5097.5 states that any unauthorized disturbance or removal of archaeological, historical, or paleontological materials or sites located on public lands is a misdemeanor.

State Laws Pertaining to Human Remains. Section 7050.5 of the California Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission. CEQA Guidelines (Section 15064.5) specify the procedures to be followed in case of the discovery of human remains on non-Federal land. The disposition of Native American burials falls within the jurisdiction of the Native American Heritage Commission.

Native American Consultation. Prior to the adoption or amendment of a general plan, Government Code Sections 65352.3 and 65352.4 require a city or county to consult with local Native American tribes that are on the contact list maintained by the Native American Heritage Commission. The purpose is to preserve

or mitigate impacts to places, features, and objects described in PRC Sections 5097.9 and 5097.993 (Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine located on public property) that are located within a city or county's jurisdiction.

In addition, Assembly Bill 52 (e.g. 2014) (AB 52), as codified in PRC Sections 5097, 21073, 21074, 21080, 21082, 21083, and 21084, will:

- Establish a new classification of resources called Tribal Cultural Resources (TCRs) which considers the value of a resource to tribal cultural traditions, heritages, and identifies;
- Establish potential mitigation options for TCRs; and
- Recognize that California Native American tribes have expertise concerning their tribal history and practices.

AB 52 is intended to help identify impacts to TCRs as early as possible during the CEQA process so that appropriate mitigation measures may be developed. Under this legislation, when a project is initiated, the lead agency must formally notify interested tribes that have requested to be on the agency's consultation list. AB 52 consultation should inform the need for a ND, MND, or EIR and must be initiated prior to the release of an ND, MND, or EIR, so it is important to build AB 52 consultation into project schedules.

Tribes must be given written notification by the lead agency within 14 days of the decision by the lead agency themselves to undertake a project or the lead agency's determination that a project application is complete for a private project. If a tribe does not respond to a request within a 30-day timeframe, the agency may move forward with the project having made a good faith effort to open consultation.

However, if the tribe(s) responds after 30 days, the lead agency may elect to begin consultation with the tribe(s), despite the passing of the legal deadline. The lead agency can and should make follow-up calls after the consultation letters are sent to try to get responses as soon as possible. Note, however, that if the tribes do not respond to follow-up telephone calls, they must still be afforded the 30-day window to respond.

3.3 Local Regulations

The relevant local regulations are discussed below.

Municipal Code: Historic Preservation Chapter 14.09.105 Historic Preservation Overlay District

The City of Vacaville established the Historic Preservation Overlay District (Municipal Code Chapter 14.09.105) to provide for "the identification of historically significant buildings and areas and the adoption of standards to ensure the preservation of such areas." The objectives of the Historic Preservation Overlay District are:

- A. To implement the policies of the General Plan regarding the preservation and adaptive reuse of historic buildings;
- B. To foster awareness of and interest in the heritage of the City of Vacaville through the designation of historic buildings and districts;
- C. To provide for the preservation of buildings which exhibit varied architectural styles reflecting the cultural, social, and economic phases of the City's history; and

D. To enhance property values, stimulate economic activity, and provide for the stabilization of commercial and neighborhood areas.

The relevant chapter of the Code establishes provisions for the designation of historic buildings and historic districts and provides guidance related to the modification, maintenance, and demolition of historic buildings.

City of Vacaville – 2015 Vacaville General Plan

The City of Vacaville’s General Plan contains the following relevant goal and policy for the preservation of cultural resources:

Goal COS-6: Protect and enhance cultural resources for their aesthetic, scientific, educational, and cultural values

Policies

- Policy COS-P6.1: Consult with those Native American Tribes with ancestral ties to the Vacaville city limits regarding proposed new development projects and land use policy changes.
- Policy COS-P6.2: Require that a records search of the California Historical Resources Information System be conducted and reviewed by a cultural resources professional for proposed development areas to determine whether the site contains known prehistoric or historic cultural resources and the potential for as-yet-undiscovered cultural resources.
- Policy COS-P6.3: Require that areas found to contain significant historic or prehistoric artifacts be examined by a qualified consulting archaeologist or historian for appropriate protection and preservation.
- Policy COS-P6.4: Require that if cultural resources, including archaeological or paleontological resources, are uncovered during grading or other on-site excavation activities, construction shall stop until appropriate mitigation is implemented.
- Policy COS-P6.5: Require that any archaeological or paleontological resources on a development project site be either preserved in their sites or adequately documented as a condition of removal. When a development project has sufficient flexibility, avoidance and preservation of the resource shall be the primary mitigation measure, unless the City identifies superior mitigation. If resources are documented, coordinate with descendants and/or stakeholder groups, as warranted.
- Policy COS-P6.6: Treat human remains discovered during implementation of public and private projects within the city with respect and dignity.
- Policy COS-P6.7: Continue to preserve historic resources by delineating historic preservation districts in the Land Use and Development Code and requiring design review of proposals affecting historic buildings.

Policy COS-P6.8: Continue to require new buildings in historic districts to be complementary to the character of the existing buildings.

Actions

Action COS-A6.1: Consult with Native American Tribes with ancestral ties to Vacaville to discuss tribal cultural resources and to create agreed upon parameters defining what type of projects will be routinely referred to the Tribes (e.g. project types, projects located in specific geographic locations).

Section 4 – 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.

What follows is a discussion of the prehistoric, ethnographic, and historic setting and an overview of the previously known cultural, historic and prehistoric resources and sites.

4.1 Prehistoric Setting

The section provides a discussion of the Prehistory.

Early and Middle Holocene

The cultural prehistory of central California spans more than 12,000 years. The earliest evidence for occupation of the region comes from archaeological assemblages attributed to the regional expression of the Fluted Point Tradition (FPT) and Western Stemmed Tradition. Commonly referred to as the Clovis culture, the FPT is generally associated with hunting of large, now extinct, megafauna such as mammoth, mastodon, sloth, camel, etc. In the far West, however, archaeological sites with FPT components suggest that these highly nomadic people were practicing a more broad-spectrum subsistence strategy. FPT assemblages in California have not been firmly dated because most finds have

been made on the surface, precluding the possibility of correlating the artifacts to datable features. On the Plains and in the Southwest, Clovis assemblages have been dated to between 11,500–10,900 years before present (B.P.) (Haynes 1991), which corresponds to the terminal Pleistocene.

Although the FPT is generally assumed to represent a highly specialized subsistence strategy focused on hunting megafauna, (Chartkoff and Chartkoff 1984) a growing body of evidence suggests that a much wider range of habitats and resources were being exploited (Willig and Aikens 1988). Furthermore, archaeological evidence suggests that people of the FPT practiced a high degree of residential mobility. This fact is attested to by the presence of exotic raw materials in tool assemblages (sometimes representing sources located hundreds of miles from the point of discovery) and the technological organization inferred from assemblages. The Post Pattern is the regional manifestation of the widespread FPT. It is characterized by the use of Clovis-like fluted points and stone crescents. Based on landscape associations, the Post Pattern is presumed to represent a subsistence economy focused on lacustrine environments, such as those found on the margins of Clear Lake.

Sites attributed to the middle Holocene (7,500 – 4,500) are few in number. At the onset of this period the climate shifted to warm and dry conditions, which led to an expansion of the San Joaquin – Sacramento Delta. Regional sites that date to this period include CA-COL-247 (ca. 5,970 B.P.), CA-SJO-68 (ca. 5,000 B.P.), as well as CA-CCO-548 and -637 (ca. 5,000 and 6,900 B.P., respectively). Sites dating to this period suggest greater use of nut crops such as acorn and pine nuts, although groundstone assemblages dating to this period are dominated by millingstones and handstones.

Late Holocene

Archaeological sites dated to the latter half of the Holocene have been documented in much greater numbers and detail in the Central Valley and North Coast Ranges compared to the preceding periods. The following discussion focuses on regional prehistory between 4,500 B.P. to Spanish contact. Early efforts to describe the cultural prehistory of the Central Valley focused on archaeological sites with burial features located in close proximity to the Sacramento / San Joaquin Delta and its surrounding tributaries (Meredith 1900; Schenck and Dawson 1929; Lillard et al 1939; Lillard and Purves 1936; Heizer and Fenenga 1939; Beardsley 1954; Heizer 1949). Investigations undertaken in the Central Valley in the first half of the Twentieth Century culminated in the development of a tripartite cultural sequence that came to be known as the Central California Taxonomic System (CCTS). Since its inception, the CCTS has been revised to accommodate new data, most notably by D. Fredrickson (1974) and J. Bennyhoff (1994). The following discussion retains the original terminology of periods that are distinguished on the basis of adaptive strategies, technology, and chronology.

Central California Taxonomic System

Beginning in the 1930s, before the advent of the 14C dating technique, archaeologists in central California attempted to order the succession of changes they encountered at archaeological sites into a comprehensive, sequential framework that would facilitate better understanding and interpretation of the temporal, spatial, and cultural changes that had taken place throughout prehistory in the Central Valley. The focus was on archaeological sites located in the vicinity of the rivers and tributaries that flowed into the Sacramento-San Joaquin Delta region. The result of these early efforts culminated with

the recognition and naming of a tripartite sequence, that at the time was a popular theme throughout much of North America. This sequence would be subdivided into the Early, Middle, and Late Periods. The sequence was based on literally a dozen sites that were reported in several publications (Lillard and Purves 1936; Lillard, Heizer and Fenenga 1939; Heizer and Fenenga 1939). Key among these dozen sites was the Windmill mound (CA-SAC-107), located on the Cosumnes River, which appeared to contain three separate and distinct stratified components. In addition, CA-SAC-107 also contained a post-Contact period component (Heizer and Fenenga 1939).

The identification of these components and their associated artifacts represented the beginning of analysis and interpretation of prehistory in the Central Valley. Furthermore, these interpretations would have a profound and lingering effect on analysis in adjoining sub-regions as they were outwardly applied to the San Francisco Bay, Southern Coast Ranges, Sierra Foothills, and the San Joaquin Valley. The following discussion introduces the CCTS and illuminates the strengths of the original interpretations as well as the limitations that some of these interpretations created as they were liberally applied to other sites within the Central Valley and adjoining sub-regions.

Early Period (ca. 4,500 – 2,500 B.P.)

As initially conceived, artifact assemblages that typified Early Period components include Haliotis beads, projectile points and blades, charmstones, Olivella beads, Haliotis ornaments, bone implements, quartz crystals, and red ochre. These were funerary objects observed in the Early Period components at the principle sites of CA-SAC-107, CA-SJO-56, -68, and -142. Mortuary practices at these sites are characterized by extended interments oriented in a westerly direction. The majority of burials were ventrally extended, although some were dorsal extensions. Burials within this component exhibit a high incidence of associated artifacts. At CA-SAC-107, 54 burials were excavated and identified as belonging to this Early component. Within these burials, 64.8 percent contained Haliotis shell beads, 40.7 percent contained what Heizer referred to as flaked stone implements, 35.1 percent had charmstones, 31.5 percent contained Olivella beads and Haliotis ornaments, 29.6 percent contained bone and antler implements, 20.4 percent had quartz crystals and 11 percent contained red ochre (Heizer 1948:41). There were of course other artifact types found in these defined Early Period components, however, their occurrence was not a constant. Artifacts found sporadically included baked clay objects, artifacts of human bone, trident harpoon tips, and pipes. The near absence of plant processing artifacts in the initial inventories that were to characterize the Early Horizon Culture type is noteworthy, as these were essentially burial mounds.

Middle Period (ca. 2,500 – 940 B.P.)

Artifact assemblages that characterize the Middle Period component include, most notably, a large and varied assemblage of bone and antler objects such as sweat scrapers or “ceremonial wands,” beaver mandibles, tubes, whistles, incised game pieces, perforated needles, atlatl spurs, barbless harpoon tips, ground sturgeon mouth plates and wedges. Other typical artifacts related to the Middle Period include Haliotis beads, large obsidian and chert concave and stemmed-based projectile points, charmstones, Olivella beads, Haliotis ornaments, quartz crystals, millingsstones and handstones, red ochre, asphaltum, chrysolite asbestos splinters, steatite tubes and earplugs, slate pendants and baked clay spools, net weights and occasional mortars and pestles. While many of these artifacts continued to be found as

mortuary items, they were no longer exclusively so and were found in other contexts within Middle Period components at the principle sites of CA-SAC-60, -107, -66, -99, 1, CA-SJO-139 and -142. Mortuary practices at these sites are characterized by flexed burials with variable orientation. The incidence of high numbers of interments with associated artifacts and the quantity of those offerings declines considerably during this time. The Middle Period components clearly mark a florescence of artifact types and the materials used in their manufacture.

Late Period (ca. 940 – 150 B.P.)

Late Period artifact assemblages and characteristics include Haliotis beads, small chert and obsidian arrow points, with an emphasis on “Stockton Serrated” types. Other artifacts characteristic of this period include charmstones, Olivella beads, Saxidomus nuttalli beads and other species of clam, Haliotis ornaments, magnesite and steatite beads, ear spools and tubes, whole Haliotis shells, mammal bone tubes, incised bird bone whistles, barbed harpoon tips, antler arrow shaft straighteners, baked clay objects, wooden fishhooks, netting and basketry items, mortars and pestles. As observed in Middle Period components, many of the artifacts that typify this period were not in exclusive burial association.

The components at some of the early sites that defined this period were at CA-CCO-138, CA-SAC-107, -1, -120, -126, -127 and -6. Mortuary practices at these sites were variable, with both flexed interments and cremations were present. Also characteristic of this component is the number of burials found intermingled in the midden deposits within the village site and often in the floor of house structures. This highly variable practice was first observed in the Middle Period.

Soon after Heizer’s initial articulation of this tripartite sequence, interpretive problems began to develop as the scheme was applied as a comparative tool to the growing number of sites being excavated in the Central Valley and adjoining sub-regions. The recognition of sub-regional cultural variation would eventually lead to many regional and sub-regional cultural chronological schemes based on specific artifact types and/or assemblages (Beardsley 1954; Kowta 1988; Moratto 1972; Olsen and Payen 1969; Ragir 1972; Sundahl 1982; White 2002). David Fredrickson (1974), while recognizing unique subregional cultural assemblages, sought to understand cultural changes in California from the perspective of broader characteristics. Despite refinements made by Fredrickson and others, many aspects of the CCTS proved to have relatively accurate temporal resolution despite a lack of cultural affinity.

4.2 Ethnography

Ethnographic literature indicates that at the time of historic contact, the project site was within the territory of the Patwin-speaking people. Sources on the ethnographic Patwin include Johnson (1978), Kroeber (1925), McKern (1922, 1923), Powers (1976), and the testimony of Princess Isidora, wife of Chief Solano (Sanchez 1930). Synonymous names for the Patwin include Copeh and Southern Wintun.

The core Patwin territory included lands in the southern Sacramento Valley west of the Sacramento River from the town of Princeton, north of Colusa, south to San Pablo and Suisun bays. Distinction is made between the River Patwin, who resided in large villages near the Sacramento River, especially between Colusa and Knights Landing, and the Hill Patwin, whose villages were situated in the Long, Bear, Indian, Capay, Pope, and Cortina valleys. The term “Patwin” refers to the people belonging to the many

small contiguous independent political entities in this area who shared linguistic and cultural similarities. Hill and River Patwin dialects are grouped into Northern Patwin language, separate from southern Patwin, spoken by people that occupied present-day Knight's Landing and Suisun. Together, they are classified as southern Wintuan and belong to the Penutian language family.

Dialects might encompass several tribelets and territories were vaguely defined. Villages were often located near major drainages, inhabited mainly in the winter as it was necessary to go out into the hills and higher elevations to establish temporary camps during food gathering seasons (i.e. spring, summer, and fall). Villages typically consisted of several bark houses, numbering from four or five to several dozen in larger villages, each house containing a single family of three to seven people.

The Patwin economy was based on fishing, hunting, and gathering, with tribelet members moving to various places within their territory to take full advantage of different resources as they became available. Game was hunted either by the individual or in community drives. Salmon runs and other food resources available along the Sacramento River and its delta tributaries also contributed significantly to Patwin economy. Acorns represented one of the most important staples of Patwin subsistence and were particularly abundant within oak woodland along both sides of the Sacramento River and delta margins. Some Patwin tribelets defended their territory against trespassers, but land was not considered privately owned (Johnson, 1978). The closest documented ethnographic village to the study area was hesa'ia, depicted as being located within the general area just north of Suisun City (Barrett, 1908:293). Beginning around 1800, Patwin culture was significantly disrupted through missionization and Euroamerican settlement.

As elsewhere in northern California, only fragmentary evidence of Patwin material cultural remains, due in part to a lack of preservation and impacts from historic-period land use. Based on the results of previous work in this portion of Sacramento Valley (Heizer and Fenega, 1939), a range of prehistoric site types is known to be present, including middens with associated surface scatters, small surface features such as rock rings and circles, petroglyphs, food processing stations including bedrock mortars, and isolated lithic flakes and tools.

4.3 History

Following the settlement of San Diego in 1769, the Spanish made steady progress in the exploration and settlement of the coastal regions of Alta California. By 1776 the Spaniards established the Presidio of San Francisco, and by 1798, the Mission San Jose. The Central Valley would remain largely uncharted in the first decades of Spanish settlement. Early in the colonial period, Spaniards made occasional forays into the Central Valley in pursuit of stolen livestock or natives who had fled the forced labor imposed at coastal missions. In addition, diseases introduced by Spanish settlers and other foreigners inflicted a heavy toll on native populations in California. The Measles epidemic of 1806 struck Missions Santa Clara, San Jose, and San Francisco particularly hard and, while it is known to have spread to remnant villages, its effect on populations inhabiting the Sacramento Valley is less understood.

Between 1804 and 1823' the Spanish made numerous trips into the Central Valley prospecting for new mission sites, attempting to recover stolen horses and cattle, or making punitive raids on the local natives believed responsible for the theft of livestock. Chief among the earliest Spanish explorers in the

Central Valley was Pedro Fages, who led at least 46 explorations into the interior between 1805 and 1820. During his many expeditions he named the San Joaquin, Mariposa, Merced, and Sacramento Rivers (Caughey 1940). Gabriel Moraga is credited with leading the first documented Spanish expedition into the Sacramento Valley in 1808. In 1810, Moraga led a military expedition across the Carquinez Strait to attack Patwin-speaking Suisuns that harbored some coast Miwok refugees from the missions. As a result, by 1820 most southern Patwin-speaking people such as the Suisuns, Tolenas from the Rockville area, and Malacas from the Fairfield area were brought into the mission system, particularly Mission San Francisco (Milliken 2005).

Secularization of the missions of California was initiated in 1813, and formally declared in 1821 (Caughey 1940). That same year, Mexican forces prevailed in their struggle for independence and declared California part of the Mexican empire. This event marked the beginning of the short-lived Mexican Period in California history. In 1833, the formal process of secularizing the missions began and the land holdings were divided among the Californios. The grants, known as ranchos, enriched those individuals fortunate enough to receive one, while effectively subjugating the native tribes as an indentured labor force. Among the first land grants issued in the area were Rancho Suisun, granted to Francisco Solano in 1837, and Rancho Tolenas, granted to Jose Armijo in 1840 (Hoover et al., 1990:463). The nearby town of Fairfield sat on the border of these two grants.

John Sutter obtained the first land grant in the Sacramento Valley, and in 1839, constructed a fort in present day Sacramento, then the edge of tribal frontier. After gold was discovered and the rush of foreigners began arriving in California, from 1849 until well into the 1950s, California Indians suffered from harassment, marginalization, displacement, and murder. Sacramento Valley tribes, including Patwin-speaking Colus and Willays signed a series of treaties granting them lands within the Sacramento Valley. None of these treaties were ratified by the U.S. Government.

In the late 1840s and 1850s, former gold seekers and pioneers began settling Solano County where they raised livestock and cultivated fruit orchards, vineyards, wheat, barley, and oats. Produce and livestock were transported overland by wagons to the many sloughs throughout the county for transportation to the mines and northern Valley cities like Sacramento. Two of these settlers, Dr. John Baker and Curtis Wilson sailed up what is now called Suisun Slough in 1850 to a bit of hard upland rising from the marsh and landed on the present site of Suisun City (Hoover et al., 1990:417). In that same year Captain Josiah Wing began to run a watercraft to the island and erected a warehouse there in 1852 that transported produce from the Valley and supplies to the mines. As this business grew Captain Wing and John Owen, who later became a merchant there, laid out the town of Suisun west of their wharf and just below the boundary line of the Suisun grant.

Twelve townships were established in Solano County between 1850 and 1871. Although the largest towns were adjacent to San Pablo and Suisun Bays, the majority of towns were situated at the ends of sloughs and channels that primarily ran through the eastern portion of the county. In 1868, the completion of the California Pacific Railroad through Solano County allowed goods to reach ships bound for the East Coast, significantly bolstering economic development, agricultural production, and population growth.

In 1850, Don Manuel Vaca deeded nine square miles of Rancho Los Puntos to William McDaniel to lay out a town that was to be named after him (Hoover et al., 1990:472). The fruit industry around the area of present Vacaville began in the late 1850s when Ansel Putman and John Dolan, local nursery owners, along with William and Simpson Thomas constructed a road from Pleasants Valley to Suisun City. This roadway, which was later known as Pleasants Valley Road, provided access for the shipment of fragile fruit from the Vaca, Pleasant, and Laguna Valleys to major markets (Hoover et al., 1990). This important transportation route spurred the development of land for commercial fruit and vegetable farming in the area. The construction of two major rail lines by 1870 broadened the market even further by providing access of shipment overland across the country. By the 1890s, Vaca Valley and the foothills to the west were covered with orchards encompassing almost all of the available non-irrigated land (Gregory, 1912).

East of Vacaville, Stephen Hoyt laid out a 40-acre town, Vaca Station, prior to the 1868 completion of the California Pacific Railroad. The town took its name from its western neighbor; however, two train stops with similar names became problematic. Town members met and decided to change Vaca Station to Elmira, after the town in New York where a local respected teacher and lawyer were born. Elmira soon became the transportation center for the Vaca and Pleasants Valley's agricultural crop and was one of the original townships in Solano County (Gregory, 1912). After major roads and highways, such as Interstate 80, bypassed the area, Elmira's growth has been slow and it has remained a small town. Historic use of the project area has included agriculture and more recently the development of the Easterly WWTP that began in 1956.

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 April 11, 2019, the Northwest Information Center completed a record search (NWIC File No.: 18-1921 for the proposed project area. The NWIC, an affiliate of the State of California Office of Historic Preservation, is the official state repository of archaeological and historic records and reports for a 16-county area that includes Solano County.

The records search and literature review for this study were done to (1) determine whether known cultural resources have been recorded within or adjacent to the study area and determine if the project site has been subject to survey in the past; (2) assess the likelihood of unrecorded cultural resources based on archaeological, ethnographic, and historical documents and literature; and (3) to review the distribution of nearby archaeological sites in relation to their environmental setting.

Sources reviewed include the California Inventory of Historical Resources (California Office of Historic Preservation), the California Office of Historic Preservation's Five Views: An Ethnic Historic Site Survey for California, California Historical Landmarks, California Points of Historical Interest, and the Historic Properties Directory Listing for Solano County. The Historic Properties Directory includes the National Register of Historic Places, the California Register of Historical Resources, and the most recent listings of the California Historical Landmarks and California Points of Historical Interest.

The records search revealed that Most of the Proposed Project/Action area have been previously subject to a cultural resources study. Specifically, fifteen previous cultural resources studies have examined most of the Proposed project/Action area. However, it appears that Leisure Town Road between Elmira Road and Orange Drive have not been previously surveyed. The records search revealed that five cultural resources are present within the Project Area:

- **P-48-000178** is Leisure Town Road, which forms the eastern boundary of Vacaville along much of its length. The road was found ineligible for the National Register in 1997 (Corbett and Minor 1996).
- **P-48-000409** (SOL-362H) is a historic-period trash deposit discovered during investigations for the EIR for Kaiser Vacaville Medical Center in 1992 (Derr and Washington 1992). The deposit is not eligible to NRHP.
- **P-48-000549** (CA-SOL-499H) is the Southern Pacific Railroad Sacramento to Benicia line. The proposed project will not affect this railroad line, which is now operated by the Union Pacific.
- **P-48-001025** is the Vaca Valley Railroad Route historic district, which includes the route of the Vaca Valley Railroad (1870-1877), later the Vaca Valley & Clear Lake Railroad (1878-1886) before being acquired by the Southern Pacific in 1886. This resource was found ineligible for NRHP due to its lack of integrity (Far Western 2014, 2017).

- **P-48-001852** is the Byrnes Canal, an offshoot of the Putah South Canal. Completed in 1962, it is an earth-lined drainage channel with concrete sluice gates. It was found ineligible for NRHP in 2017 (Webb and Algaier 2017).

The records search also revealed that in 1997, a pedestrian survey of approximately 40-acres was conducted as part of the environmental review of the Vacaville Easterly Wastewater Treatment Plant Expansion Project. The study was confined to the existing Easterly WWTP facilities and resulted in the identification of a single isolated obsidian flake (P-419) located on the north bank of the Solano Irrigation District Canal, outside of the current project area. Based upon the location and condition of the isolated artifact, it was concluded that the specimen had been removed from its original place of deposition by modern ground disturbing activities associated with the construction of the canal and motor vehicle operation. No other cultural resources were identified. In addition, the Easterly WWTP site was surveyed again in 2009 as part of the Easterly WWTP Tertiary Project and No archeology, cultural, and/or tribal resources were identified.

Given the environmental setting, it is considered possible that prehistoric archaeological deposits could be found as part of the construction of the Proposed Project/Action. However, it is highly unlikely due to the high level of ground disturbance within the project area resulting from construction and operation of the EWWTP, disking, as well as historic and modern agricultural practices of the surrounding area.

5.2 Survey Methods

Due to the fact that the Easterly WWTP is a highly disturbed site which has been studied numerous times and previous construction and operations have not revealed anything of substance, the focus of this cultural resource investigation was focused on the areas not previously surveyed. Specifically, a pedestrian archaeological survey of the pipeline alignment and facilities was conducted on January 29th and 30th, 2020. The archaeological survey began at the Easterly WWTP and both sides of the roads in which the proposed pipeline will be placed, and the three proposed storage tank and pump station locations were surveyed. Special emphasis was placed on the area(s) along Leisure Town Road, which has not been previously surveyed.

The Proposed Project/Action area includes a variety of soils, the largest units of which are the Capay silty clay loam, Capay Clay, and Yolo Loam, all of which are moderately well-drained alluvial soils formed in the early to middle Holocene era (11,700-3,000 years ago). Two perennial creeks run through the project area: Alamo Creek crosses the project area at Leisure Town Road south of Elmira Road in an artificial channel that is over ½ mile south of its historic stream course. Ulatis Creek crosses the project area at Leisure Town Road between Hawkins and Maple Roads. Areas of Holocene soils near creeks can be considered generically sensitive for buried archaeological resources; the area around Ulatis Creek meets this definition.

All proposed facility locations were surveyed in 10-meter transects. 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. Surface visibility varied between little ground surface, due to dense grasses and pavement (WWTP), to complete surface

visibility in areas of bare soil (disked landscaping perimeter and southern field on the property). The ground surface was examined for archaeological remains, while rodent burrow backdirt piles and road cuts were examined for indicators of buried archaeological deposits. The survey found that the project site has been subject to significant historic and modern disturbances including past agricultural use in open areas, landscaping, paving, and installation of underground infrastructure. No archeology, cultural, and/or tribal resources were discovered during the January 2020 survey. A more complete analysis is provided in Appendix C.

5.3 Native American Heritage Commission Record Search and Outreach

On March 27, 2019, a letter was sent to the Native American Heritage Commission (NAHC), requesting a listing of local Native American tribes in the area and any information regarding sacred lands within the area in order to be compliant with Assembly Bill 52 (AB52). On April 15, 2019 NAHC sent the District a list of the Native American Tribes to request a government-to-government consultation to determine the potential of the Proposed Project to affect Tribal Cultural Resources. On April 24, 2019 the City then sent a government-to-government letter to each Native American Tribe requesting consultation regarding how the Proposed Project could potentially affect any known tribal cultural resources. To date, none of the tribes have formally responded to the government-to-government consultation request and the 30-day AB-52 consultation has been completed. On May 3, 2019 one Tribe (Yocha Dehe Winton Nation) did call and requested the shape files for the Proposed Project/Action's Pipeline Alignment. The shape files were sent to them on May 7, 2019. No other requests were made and the 30-day AB-52 consultation was completed on May 16, 2019. Please see Attachment A.

5.4 Conclusions and Recommendations

This investigation was conducted in compliance with CEQA, AB 52 and 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 any cultural resources. Specifically, the Proposed Project/Action would have:

- ***No Effect on any known Historical Resources or Properties;***
- ***No Effect on any known Archeological Resources;***
- ***No Effect on any Known Tribal Cultural Resources, and***
- ***No Effect on any known Burial Sites.***

However, as with all construction projects, the construction of the Proposed Project/Action could uncover unidentified or known buried cultural resources (i.e. Historical, archeological, Tribal, and/or human remains). To further reduce the potential to affect any of these resources, the following several 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 City 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 City 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 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 City.
- **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 California Historical Resources Information System, the following literature was reviewed and/or referenced:

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Attachment A

Native American Correspondence



March 27, 2019

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

**Subject: Sacred Land Files and Native American Contact List Request for the City of Vacaville's
Proposed Recycled Water Project, Solano County**

To Whom It May Concern:

SMB Environmental, Inc. (SMB) is assisting the City of Vacaville (City) prepare environmental documentation for its proposed Recycled Water Project. The Proposed Project consists of approximately 9.4-miles of recycled water pipeline ranging in size from 16 to 8 inches in diameter from the City's Wastewater Treatment Plant to serve approximately 990 acres of agricultural and urban landscape irrigation lands within the Solano County. The Proposed Project is located on the Elmira, California USGS 7.5 Minute Topographic Map and generally located at Section 21, Township 6 North, and Range 1 West (S21 T16N R1W). Please see attached request form.

We would appreciate your checking 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 in the 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 written over a light blue horizontal line.

Steve Brown
Principal

NATIVE AMERICAN HERITAGE COMMISSION

Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691 Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: <http://www.nahc.ca.gov>



April 15, 2019

Steve Brown

VIA Email to: Steve@smbenvironmental.com

RE: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, City of Vacaville-Recycled Water Project. Solano County.

Dear Mr. Brown:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:
 - A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
 - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
 - Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
 - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.
2. The results of any archaeological inventory survey that was conducted, including:
 - Any report that may contain site forms, site significance, and suggested mitigation measures.

All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.
3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was negative.
4. Any ethnographic studies conducted for any area including all or part of the APE; and
5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: katy.sanchez@nahc.ca.gov.

Sincerely,



KATY SANCHEZ
Associate Environmental Planner

**Native American Heritage Commission
Tribal Consultation List
04/12/2019**

Cortina Rancheria - Kletsel Dehe Band of Wintun Indi
Charlie Wright. Chairperson
P.O. Box 1630 Wintun / Patwin
Williams, CA 95987
(530) 473-3274 Office

United Auburn Indian Community of the Auburn Rancheria
Gene Whitehouse. Chairperson
10720 Indian Hill Road Maidu
Auburn, CA 95603 Miwok
bauth@auburnrancheria.com
(530) 883-2390 Office

Yocha Dehe Wintun Nation
Anthony Roberts. Chairperson
P.O. Box 18 Wintun (Patwin)
Brooks, CA 95606
aroberts@yochadehe-nsn.gov
(530) 796-3400

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 Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable only for consultation with Native American tribes under Public Resources Code Sections 21080.1, 21080.3.1, and 21080.3.2 for proposed: City of Vacaville-Recycled Water Project, Solano County.



ESTABLISHED 1850

CITY OF VACAVILLE

650 MERCHANT STREET
VACAVILLE, CALIFORNIA 95688-6908
www.cityofvacaville.com
707-449-5100

RON ROWLETT
Mayor

DILENNA HARRIS
Vice Mayor

NOLAN SULLIVAN
Councilmember

MITCH MASHBURN
Councilmember

RAYMOND BEATY
Councilmember

April 24, 2019

Yocha Dehe Wintun Nation
Mr. James Kinter
Tribal Secretary/Tribal Historic Preservation Officer
P.O. Box 18
Brooks, CA 95606

**Subject: Request for Government-to-Government Consultation under
Assembly Bill 52 (AB-52) for the City of Vacaville's Recycled Water
Project**

Dear Kinter:

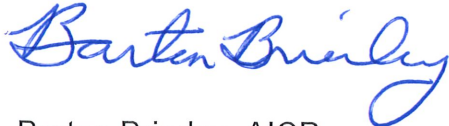
The City Vacaville (City) is requesting a formal government-to-government consultation with the Yocha Dehe Wintun Nation to discuss the City's Proposed Recycled Water Project (Proposed Project) and the potential that the Proposed Project could have on tribal and/or cultural resources in the area. The Proposed Project consists of approximately 9.4-miles of recycled water pipeline ranging in size from 16-8 inches in diameter from the City's Wastewater Treatment Plant as well as storage and pump station facilities to serve approximately 990 acres of agricultural and urban landscape irrigation lands within Solano County. Please see attached Figure.

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 tribal and/or cultural resources in the Project Area as part of the AB52 requirements. As a result, we are requesting that you 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.

In addition, we conducted a records search of the entire project area with the Northwest Information Center (NWIC) and determined that there have been 15 previous cultural resources studies conducted which covers approximately 95 percent of the Project area. Only the portion of Leisure town road between Elmira Road and Orange Drive has not been previously surveyed. Based on our review of the information from NWIC, the Project area does not contain any known eligible cultural or tribal resources. However, unknown buried resources may exist in the project area.

Thank you for your cooperation and assistance. I look forward to your earliest possible reply. If we do not receive a request from you (or your organization) within 30 days, we will assume that you do not want to have a formal consultation and agree that the Proposed Project would not have any impacts to known Tribal Cultural Resources that you are aware of. If you have any questions, please feel free to contact me by phone at (707) 449-5361 or by email at Barton.Brierley@cityofvacaville.com.

Sincerely,

A handwritten signature in blue ink that reads "Barton Brierley". The signature is written in a cursive, flowing style.

Barton Brierley, AICP
Community Development Director



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Mr. James Kinter
Tribal Secretary/Tribal Historic Preservation Officer
P.O. Box 18
Brooks, CA 95606

**Subject: Request for Government-to-Government Consultation under
Assembly Bill 52 (AB-52) for the City of Vacaville's Recycled Water
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Dear Kinter:

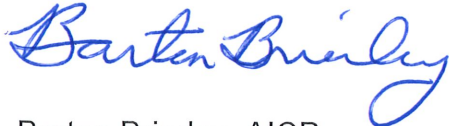
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In addition, we conducted a records search of the entire project area with the Northwest Information Center (NWIC) and determined that there have been 15 previous cultural resources studies conducted which covers approximately 95 percent of the Project area. Only the portion of Leisure town road between Elmira Road and Orange Drive has not been previously surveyed. Based on our review of the information from NWIC, the Project area does not contain any known eligible cultural or tribal resources. However, unknown buried resources may exist in the project area.

Thank you for your cooperation and assistance. I look forward to your earliest possible reply. If we do not receive a request from you (or your organization) within 30 days, we will assume that you do not want to have a formal consultation and agree that the Proposed Project would not have any impacts to known Tribal Cultural Resources that you are aware of. If you have any questions, please feel free to contact me by phone at (707) 449-5361 or by email at Barton.Brierley@cityofvacaville.com.

Sincerely,

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Barton Brierley, AICP
Community Development Director



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Councilmember

RAYMOND BEATY
Councilmember

April 24, 2019

Cortina Rancheria - Kletsel Dehe Band of Wintun Indians
Attn: Charlie Wright, Chairperson
P.O. Box 1630
Williams 95987

Subject: Request for Government-to-Government Consultation under Assembly Bill 52 (AB-52) for the City of Vacaville's Recycled Water Project

Dear Mr. Wright:

The City Vacaville (City) is requesting a formal government-to-government consultation with the Cortina Rancheria - Kletsel Dehe Band of Wintun Indians to discuss the City's Proposed Recycled Water Project (Proposed Project) and the potential that the Proposed Project could have on tribal and/or cultural resources in the area. The Proposed Project consists of approximately 9.4-miles of recycled water pipeline ranging in size from 16-8 inches in diameter from the City's Wastewater Treatment Plant as well as storage and pump station facilities to serve approximately 990 acres of agricultural and urban landscape irrigation lands within Solano County. Please see attached Figure.

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Thank you for your cooperation and assistance. I look forward to your earliest possible reply. If we do not receive a request from you (or your organization) within 30 days, we will assume that you do not want to have a formal consultation and agree that the Proposed Project would not have any impacts to known Tribal Cultural Resources that you are aware of.

If you have any questions, please feel free to contact me by phone at (707) 449-5361 or by email at Barton.Brierley@cityofvacaville.com.

Sincerely,

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Barton Brierley, AICP
Community Development Director



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Councilmember

MITCH MASHBURN
Councilmember

RAYMOND BEATY
Councilmember

April 24, 2019

United Auburn Indian Community of the Auburn Rancheria
Attn: Gene Whitehouse, Chairperson
10720 Indian Hill Road
Auburn, CA 95603

Subject: Request for Government-to-Government Consultation under Assembly Bill 52 (AB-52) for the City of Vacaville's Recycled Water Project

Dear Mr. Whitehouse:

The City Vacaville (City) is requesting a formal government-to-government consultation with the United Auburn Indian Community of the Auburn Rancheria to discuss the City's Proposed Recycled Water Project (Proposed Project) and the potential that the Proposed Project could have on tribal and/or cultural resources in the area. The Proposed Project consists of approximately 9.4-miles of recycled water pipeline ranging in size from 16-8 inches in diameter from the City's Wastewater Treatment Plant as well as storage and pump station facilities to serve approximately 990 acres of agricultural and urban landscape irrigation lands within Solano County. Please see attached Figure.

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If you have any questions, please feel free to contact me by phone at (707) 449-5361 or by email at Barton.Brierley@cityofvacaville.com.

Sincerely,

A handwritten signature in blue ink that reads "Barton Brierley". The signature is fluid and cursive, with the first name "Barton" and last name "Brierley" clearly distinguishable.

Barton Brierley, AICP
Community Development Director



Figure 2

Proposed Project/Action Overview