INITIAL STUDY/PROPOSED
MITIGATED NEGATIVE DECLARATION

Water Treatment Plant Chlorine Gas to Hypochlorite Conversion Project

APRIL 2019

PREPARED FOR:
The City of Benicia

PROPOSED MITIGATED NEGATIVE DECLARATION

PROJECT: WATER TREATMENT PLANT CHLORINE GAS TO HYPOCHLORITE CONVERSION PROJECT

Lead Agency: City of Benicia

Under CEQA, the lead agency is the public agency with primary responsibility over approval of the project. The City of Benicia is the CEQA lead agency because it is responsible for construction and operation of the Water Treatment Plant (WTP) modifications proposed under the Water Treatment Plant Chlorine Gas to Hypochlorite Conversion Project (Project).

Project Description Summary

The City of Benicia (City) constructed a conventional surface water treatment plant (WTP) in 1970 that used chlorine gas as its primary disinfectant. The WTP continues to operate in this manner. Since its construction and as a result of regulations enacted surrounding the use of chlorine gas, a Risk Management Plan has been prepared and the City implemented a rigorous training program in Process Safety Management. The requirements for the plan and training program are extensive and costly and the City has decided to change the disinfectant process at the WTP to reduce costs primarily associated with the regulatory burden of using chlorine gas. The City proposes to convert the WTP from using chlorine gas to using sodium hypochlorite (commonly called bleach) as its primary disinfectant.

The project would be located at the existing WTP, which is at 100 Water Way in Benicia, California, and would be located wholly within areas that have already been disturbed either through facility construction, storage areas, or existing roadways at the WTP site.

The WTP currently employs a chlorine gas delivery system utilizing chlorinators under vacuum and chemical introduction through hydraulic injectors. The system consists of two secondary containment systems (TGO Chlortainers) and two additional 1-ton chlorine containers stored in the Operations Building. The existing system will be left in place while the City begins operation of the new system. In the future, when the new system is operating consistently, the old system would be removed from the site.

The new sodium hypochlorite system would be constructed in the existing Chemical Building and Chemical Tank Farm, adjacent to and east of the existing tanks. The new sodium hypochlorite system would include:

- two new 10,000-gallon sodium hypochlorite chemical storage tanks and one new 10,000-gallon sodium hydroxide chemical storage tank located in a new secondary chemical-spill-containment structure with a sump and drains to the WTP's waste containment tank;
- a pump recirculation system that provides mixing of hypochlorite solution and dilution water and transfer the hypochlorite solutions from one storage tank to the other;
- three diaphragm chemical metering pumps (two duty pumps and one stand-by pump);
- a chemical delivery and tank fill station and piping from the new fill station to the new storage tanks;
- new sodium hypochlorite and sodium hydroxide piping from the new chemical spill containment spill structure to the Chemical Building, Operations Building, and Flash Mixer Structure;

- demolition of and replacement of an existing 13,000-gallon alum storage tank;
- demolition of several abandoned storage tanks;
- an ion exchange (IX) water softening system to provide water to dilute the sodium hypochlorite solution; and
- emergency eyewash stations.

All activities would occur within the already disturbed areas of the WTP. The site is currently disturbed, does not contain trees, and has minimal weedy grasses and vegetation; thus, only minor site preparation activities would be required. The project would not increase the capacity of the WTP. Operational activities would largely be the same as current operations, though approximately four truck trips per year would be required to service the IX water softening system. Existing employees would continue to operate the WTP; no additional employees would be needed.

Findings

An Initial Study has been prepared to assess the project's potential effects on the environment and the significance of those effects. Based on the Initial Study, it has been determined that the project would not have any significant effects on the environment once mitigation measures are implemented. The conclusion is supported by the following findings:

1. The project would have no impact related to agriculture and forestry, land use, mineral resources, population and housing, public services, recreation, and tribal cultural resources.

2. The project would have a less-than-significant impact on aesthetics, air quality, cultural resources, geology and soils, greenhouse gases and energy, hazards and hazardous materials, hydrology and water quality, noise and vibration, traffic and transportation, and utilities and service systems.

3. Mitigation is required to reduce potentially significant impacts related to biological resources to less-than-significant levels.

BIOLOGICAL RESOURCES

Mitigation Measure Bio-1: Avoid or minimize effects to nesting birds.

The following measures shall be implemented to avoid or minimize loss of active bird nests:

- To minimize the potential for loss of active bird nests, project activities (e.g., ground disturbance, demolition, use of heavy equipment, presence of construction crews) shall commence during the nonbreeding season (September 1-January 31). If all project activities are completed during the nonbreeding season, no further mitigation would be required.

- Prior to commencing project activities between February 1 and August 31, a qualified biologist shall conduct preconstruction surveys for nests on any tree, other vegetation, or structure within 500 feet of the project footprint. The surveys shall be conducted no more than 14 days before construction begins. If no active nests are found during focused surveys, no further action under this measure will be required. If active nests are observed during the preconstruction surveys, the biologist shall notify California Department of Fish and Wildlife (CDFW). If necessary, modifications to the project design to avoid removal of occupied habitat while still achieving project objectives shall be evaluated and implemented to the extent feasible. If avoidance is not feasible or conflicts with project objectives, construction shall be prohibited within a minimum of 100 feet of the nest to avoid disturbance until the nest is no longer active. These recommended buffer areas may be reduced through consultation with CDFW.

Significance after Mitigation
Implementation of Mitigation Measure Bio-1 would ensure that the project would not result in disturbance to or loss of nesting birds through either undertaking activities outside of nesting bird season or implementing buffers around active nests during the nesting bird season. Therefore, this impact would be reduced to a **less-than-significant level with mitigation**.

Mitigation Measure Bio-2: Apply for Tree Removal Permit from the City of Benicia

The following measures shall be implemented to avoid conflict with City of Benicia municipal code:

- A certified arborist shall conduct inventory of protected trees in the project area that are planned for removal. The inventory will include a map of tree locations in the project area, tree species, approximate height, and trunk diameter measured at 48 inches above the ground.
- If trees planned for removal are not considered to be protected trees (e.g., less than 8 inches in diameter), then further mitigation is not required.
- If the tree planned for removal in the project area is determined to be a protected tree, the project applicant will submit a tree removal permit application to the City of Benicia Parks and Community Services Department. Approval of the tree removal permit is at the discretion of the City of Benicia Parks and Community Services Department.
- Upon review of the tree removal permit, the City arborist may determine that replacement of the removed tree with a new tree is necessary, at an appropriate replacement value (the actual cost of replacing the same tree size and canopy removed or destroyed).
- An applicable fee will be required upon approval for tree removal.

Significance after Mitigation
Implementation of Mitigation Measure Bio-2 would ensure that the project would not result in a conflict with the City's tree protection ordinance. Therefore, this impact would be reduced to a less-than-significant level with mitigation.

CULTURAL RESOURCES

Mitigation Measure Cult-1: Inadvertent Discovery of Historical and Archaeological Resources Protocol

If any prehistoric or historic-era subsurface archaeological features or deposits are discovered during construction, all ground disturbing activities shall be stopped, and a qualified professional archaeologist shall be retained to assess the significance of the find. If the find is determined to be significant by the qualified archaeologist (i.e., because it is determined to constitute either a historical resource or a unique archaeological resource), the archaeologist shall develop appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected. Procedures could include but would not necessarily be limited to preservation in place, archival research, subsurface testing, or contiguous bock unit excavation and data recovery. If a prehistoric archaeological feature is discovered, the City shall notify the Yocha Dehe Wintun Nation. The archaeologist shall consider input from the Yocha Dehe Wintun Nation when determining the significance of the find and when developing protective procedures.

Significance after Mitigation
Implementation of Mitigation Measure Cult-1 would reduce impacts associated with archaeological resources to a less-than-significant level because the measures would require the implementation of professionally accepted procedures for the discovery of previously undocumented archaeological resources.

Mitigation Measure Cult-2: Paleontological Worker Awareness Training

The City or contractor shall retain a qualified paleontologist to conduct an on-site training that will alert all construction personnel and operational staff involved in equipment training about the possibility of encountering fossils in previously-undisturbed strata. The appearance and types of fossils likely to be seen during construction will be described. Construction personnel shall be trained about the proper notification procedures should fossils be encountered, including halting operations and notifying the City, which shall then retain a qualified paleontologist for identification and salvage of fossils.

Significance after Mitigation

Implementation of Mitigation Measure Cult-2 would reduce impacts associated with paleontological resources to a less-than-significant level because construction workers and operational personnel would be alerted to the possibility of encountering paleontological resources and professionally accepted procedures for the discovery of paleontological resources would be implemented in the event of a find.

TRIBAL CULTURAL RESOURCES

Mitigation Measure Cult-1: Inadvertent Discovery of Historical and Archaeological Resources Protocol

If any prehistoric or historic-era subsurface archaeological features or deposits are discovered during construction, all ground disturbing activities shall be stopped, and a qualified professional archaeologist shall be retained to assess the significance of the find. If the find is determined to be significant by the qualified archaeologist (i.e., because it is determined to constitute either a historical resource or a unique archaeological resource), the archaeologist shall develop appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected. Procedures could include but would not necessarily be limited to preservation in place, archival research, subsurface testing, or contiguous bock unit excavation and data recovery. If a prehistoric archaeological feature is discovered, the City shall notify the Yocha Dehe Wintun Nation. The archaeologist shall consider input from the Yocha Dehe Wintun Nation when determining the significance of the find and when developing protective procedures.

Significance after Mitigation

Implementation of Mitigation Measure Cult-1 would reduce impacts associated with tribal cultural resources to a less-than-significant level because the measures would require the implementation of professionally accepted procedures for the discovery of previously undocumented archaeological resources, including those that may be tribal cultural resources.

Pursuant to Section 21082.1 of the California Environmental Quality Act, the City of Benicia has independently reviewed and analyzed the Initial Study and Mitigated Negative Declaration for the project and finds that the Initial Study and Mitigated Negative Declaration reflects the independent judgment of the City of Benicia. The City of Benicia further finds that the project mitigation measures shall be implemented as stated in the Mitigated Negative Declaration.

I hereby approve this project:

_____

Name/Title
City of Benicia
(to be signed upon approval of the project after the public review period is complete)

Initial Study/Proposed Mitigated Negative Declaration

For the

Water Treatment Plant Chlorine Gas to Hypochlorite Conversion Project

PREPARED FOR:

City of Benicia
250 East L Street
Benicia, California 94510
707/746-4240

Contact: Laura M. Pate, P.E.

PREPARED BY:

Ascent Environmental, Inc.
1111 Broadway, Suite 3-163
Oakland, California 94607
408/507-6435

Contact: Kristi Black

April 2019

TABLE OF CONTENTS

Appendices (included in a CD on back cover)

Figures

Tables

ACRONYMS AND ABBREVIATIONS

BAAQMD	Bay Area Air Quality Management District
BMC	Benicia Municipal Code
BMP	best management practices
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
City	City of Benicia
CMP	Congestion Management Plan
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	ozone, carbon monoxide
CO_2	carbon dioxide
CRHR	California Register of Historical Resources
dB	decibels
DPM	diesel particulate matter
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
FTA	Federal Transit Administration
GHG	greenhouse gases
IS/Proposed MND	Initial Study/Proposed Mitigated Negative Declaration
L_{dn}	Day-Night Noise Level
L_{eq}	Equivalent Noise Level
L_{max}	Maximum Noise Level
LOS	Level of Service
MT CO_2e/yr	metric tons of CO_2 equivalents per year
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
PM_{10} and $PM_{2.5}$, respectively	respirable and fine particulate matter
ppm	parts per million
ROG	reactive organic gases
SO_2	sulfur dioxide
Solano HCP	Solano Habitat Conservation Plan
TAC	toxic air contaminants
USGS	U.S. Geological Survey

VdB	vibration decibels
VMT	vehicle miles traveled
WTP	Water Treatment Plant

1 INTRODUCTION

1.1 INTRODUCTION AND REGULATORY GUIDANCE

This Initial Study/Proposed Mitigated Negative Declaration (IS/Proposed MND) has been prepared by the City of Benicia to evaluate potential environmental effects resulting from the Water Treatment Plant Chlorine Gas to Hypochlorite Conversion Project. Section 2, "Project Description" presents the detailed project information.

This document has been prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Section 15000 et seq.). An IS is prepared by a lead agency to determine if a project may have a significant effect on the environment (State CEQA Guidelines Section 15063[a]), and thus to determine the appropriate environmental document. In accordance with State CEQA Guidelines Section 15070, a "public agency shall prepare…a proposed negative declaration or mitigated negative declaration…when: (a) The Initial Study shows that there is no substantial evidence…that the project may have a significant impact on the environment, or (b) The Initial Study identifies potentially significant effects but revisions to the project plans or proposal are agreed to by the applicant and such revisions would reduce potentially significant effects to a less-than-significant level." In this circumstance, the lead agency prepares a written statement describing its reasons for concluding that the project would not have a significant effect on the environment and, therefore, does not require the preparation of an Environmental Impact Report (EIR). By contrast, an EIR is required when the project may have a significant environmental impact that cannot clearly be reduced to a less-than-significant effect by adoption of mitigation or by revisions in the project design.

As described in the environmental checklist (Chapter 3), the project would not result in any unmitigated significant environmental impacts. Therefore, an IS/Proposed MND is the appropriate document for compliance with the requirements of CEQA. This IS/Proposed MND conforms to these requirements and to the content requirements of State CEQA Guidelines Section 15071.

Under CEQA, the lead agency is the public agency with primary responsibility over approval of the project. The City of Benicia is the CEQA lead agency because they are responsible for constructing and operating the Water Treatment Plant (WTP) modifications. The purpose of this document is to present to decision-makers and the public information about the environmental consequences of implementing the project. This disclosure document is being made available to the public for review and comment. After comments are received from the public and reviewing agencies, the City of Benicia may (1) adopt the MND and approve the project; (2) undertake additional environmental studies; or (3) abandon the project. If the project is approved and funded, the City of Benicia may proceed with the project.

1.2 SUMMARY OF FINDINGS

Chapter 3 of this document contains the analysis and discussion of potential environmental impacts of the project.

Based on the issues evaluated in that chapter, it was determined that the project would have either no impact or a less-than-significant impact related to most of the issue areas identified in the Environmental Checklist, included as Appendix G of the State CEQA Guidelines. These include the following issue areas:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Geology and Soils
- Mineral Resources
- Noise
- Population and Housing
- Public Services

- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Recreation
- Transportation and Traffic
- Utilities and Service Systems

Potentially significant impacts were identified for biological resources, cultural resources, and tribal cultural resources; however, mitigation measures included in the IS/Proposed MND would reduce all impacts to a less-than-significant level.

1.3 DOCUMENT ORGANIZATION

This IS/Proposed MND is organized as follows:

Chapter 1: Introduction. This chapter introduces the environmental review process. It describes the purpose and organization of this document as well as presents a summary of findings.

Chapter 2: Project Description. This chapter describes the purpose of and need for the project, identifies project objectives, and provides a detailed description of the project.

Chapter 3: Environmental Impacts and Mitigation Measures. This chapter presents an analysis of a range of environmental issues identified in the CEQA Environmental Checklist and determines if project actions would result in no impact, a less-than-significant impact, a less-than-significant impact with mitigation incorporated, or a potentially significant impact. If any impacts were determined to be potentially significant, an EIR would be required. For this project, however, none of the impacts were determined to be significant after implementation of mitigation measures.

Chapter 4: References. This chapter lists the references used in preparation of this IS/Proposed MND.

Chapter 5: List of Preparers. This chapter identifies report preparers.

2 PROJECT DESCRIPTION

2.1 PROJECT BACKGROUND AND OBJECTIVES

The City of Benicia (City) constructed a conventional surface water treatment plant (WTP) in 1970 that used chlorine gas as its primary disinfectant. The WTP continues to operate in this manner. Since its construction and as a result of regulations enacted surrounding the use of chlorine gas, a Risk Management Plan has been prepared and the City implemented a rigorous training program in Process Safety Management. The requirements for the plan and training program are extensive and costly, and the City has decided to change the disinfectant process at the WTP to reduce costs primarily associated with the regulatory burden of using chlorine gas. The City proposes to convert the WTP from using chlorine gas to using sodium hypochlorite (commonly called bleach) as its primary disinfectant. The project objectives are to:

- reduce costs associated with the regulatory burden of using chlorine gas for water treatment, and
- convert the WTP from a chlorine gas disinfectant system to a sodium hypochlorite disinfectant system.

2.2 PROJECT LOCATION

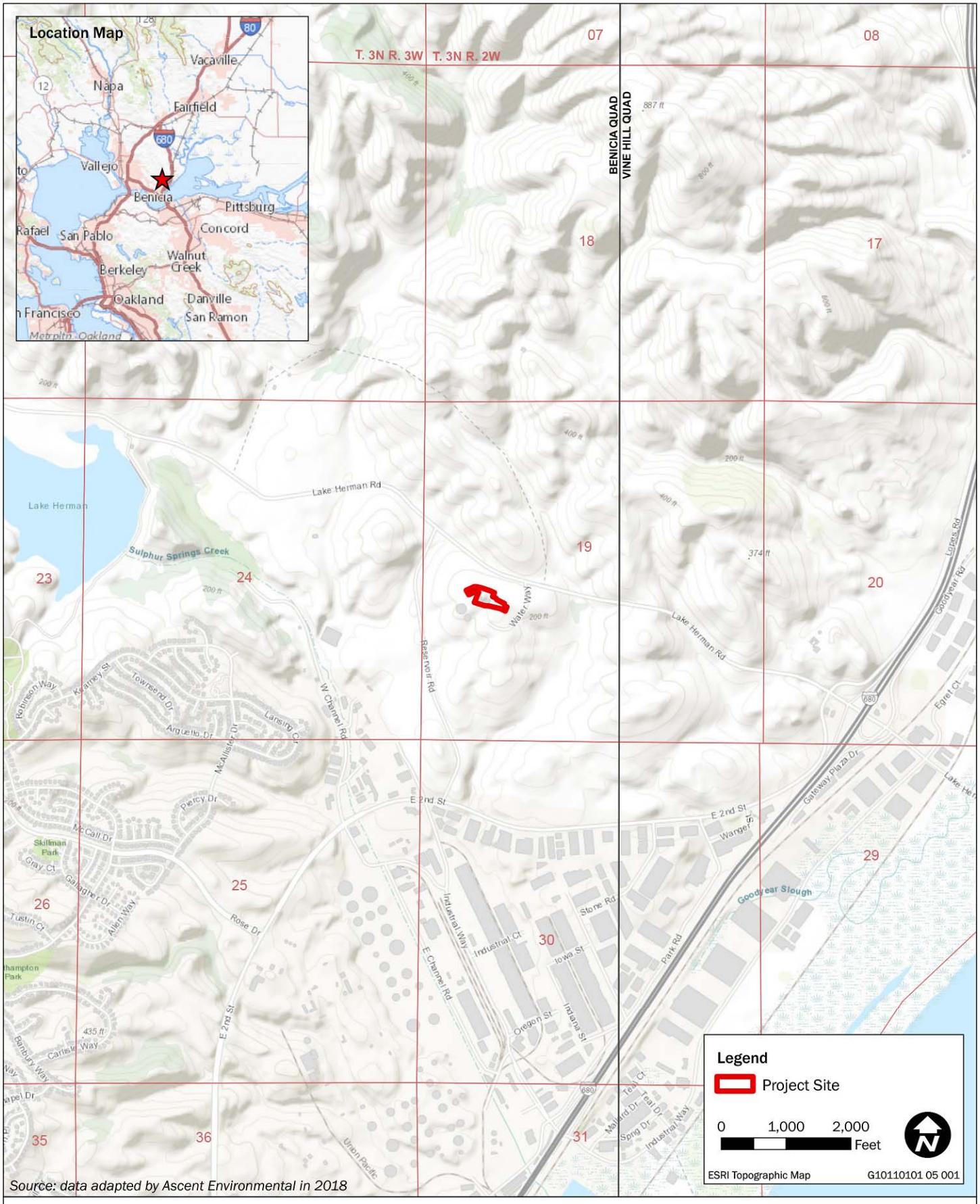
The project would be located at the existing WTP, which is at 100 Water Way in Benicia, California (Figure 2-1), and would be located wholly within areas that have already been disturbed either through facility construction, storage areas, or existing roadways at the WTP site.

2.3 CHARACTERISTICS

The WTP currently employs a chlorine gas delivery system utilizing chlorinators under vacuum and chemical introduction through hydraulic injectors. The system consists of two secondary containment systems (TGO Chlortainers) and two additional 1-ton chlorine containers stored in the Operations Building. The existing system will be left in place while the City begins operation of the new system. In the future, when the new system is operating consistently, the old system would be removed from the site.

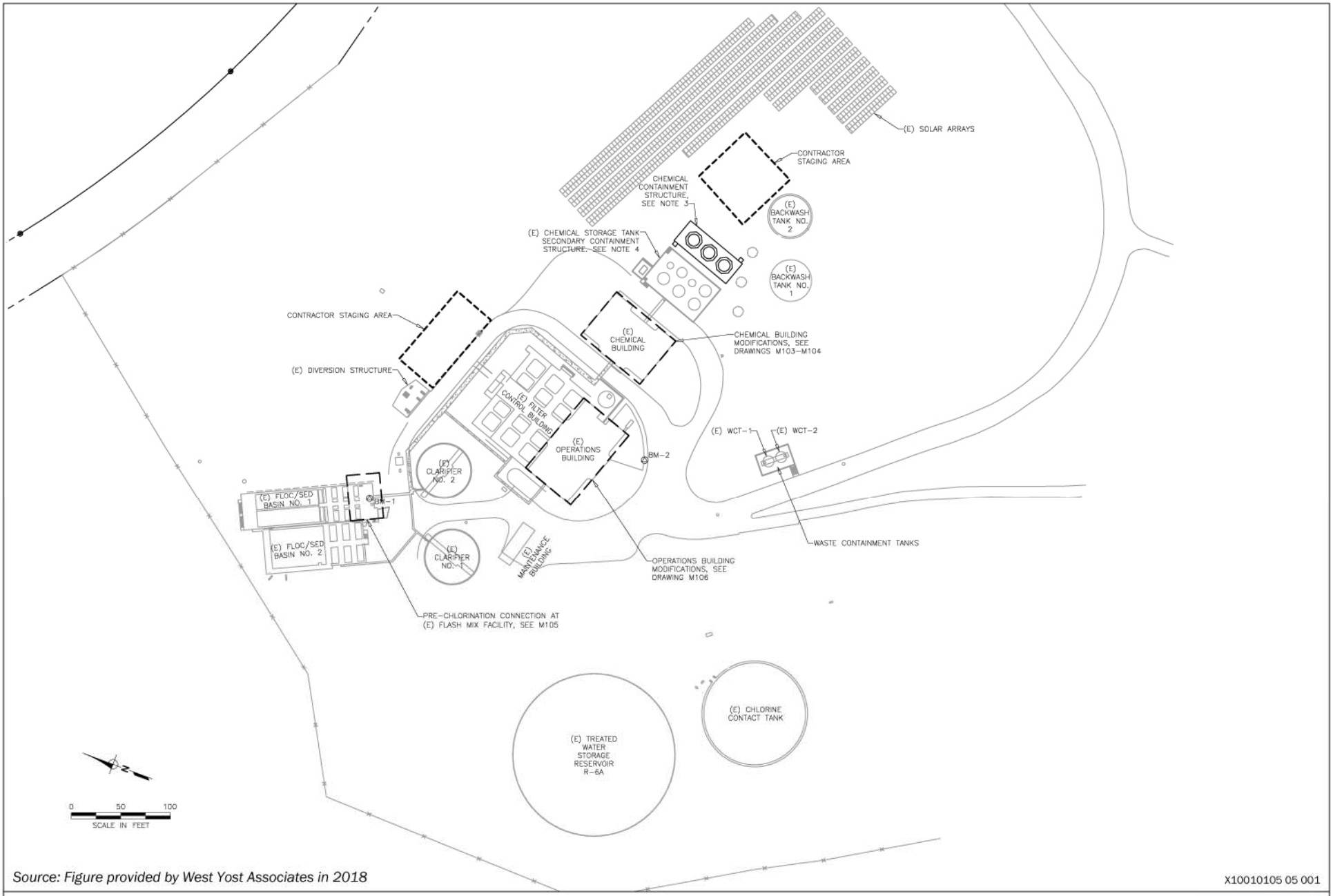
The new sodium hypochlorite system would be constructed in the existing Chemical Building and Chemical Tank Farm area, adjacent to and east of the existing tanks (Figure 2-2). The new sodium hypochlorite system would include:

- two new 10,000-gallon sodium hypochlorite chemical storage tanks and one new 10,000-gallon sodium hydroxide chemical storage tank located in a new secondary chemical-spill-containment structure in the Chemical Tank Farm area with a sump and drains to the WTP's waste containment tank;
- a pump recirculation system that provides mixing of hypochlorite solution and dilution water and transfer the hypochlorite solutions from one storage tank to the other;
- three diaphragm chemical metering pumps (two duty pumps and one stand-by pump);
- a chemical delivery and tank fill station and piping from the new fill station to the new storage tanks;
- new sodium hypochlorite and sodium hydroxide piping from the new chemical spill containment spill structure in the Chemical Tank Farm Area to the Chemical Building, Operations Building and Flash Mix Facility;



Source: data adapted by Ascent Environmental in 2018

Figure 2-1 **Regional Location**



Source: Figure provided by West Yost Associates in 2018

X10010105 05 001

Figure 2-2

Water Treatment Plant Proposed Layout

ASCENT ENVIRONMENTAL

- demolition of and replacement of an existing 13,000-gallon alum storage tank;
- demolition of several abandoned storage tanks;
- an ion exchange (IX) water softening system to provide water to dilute the sodium hypochlorite solution; and
- emergency eyewash stations.

The project would not increase the capacity of the WTP.

2.4 CONSTRUCTION

2.4.1 Site Preparation and Demolition

The proposed locations of the staging areas and the new secondary chemical-spill-containment structure in the Chemical Tank Farm have been selected in part to avoid impacts to vegetation. The site is currently disturbed, contains few landscape trees, and has minimal weedy grasses and vegetation; thus, only minor site preparation activities would be required. It is anticipated that less than 0.5 acre of grading would be required to accommodate construction staging areas, and construction of the building and the fill station as shown in Figure 2-3.

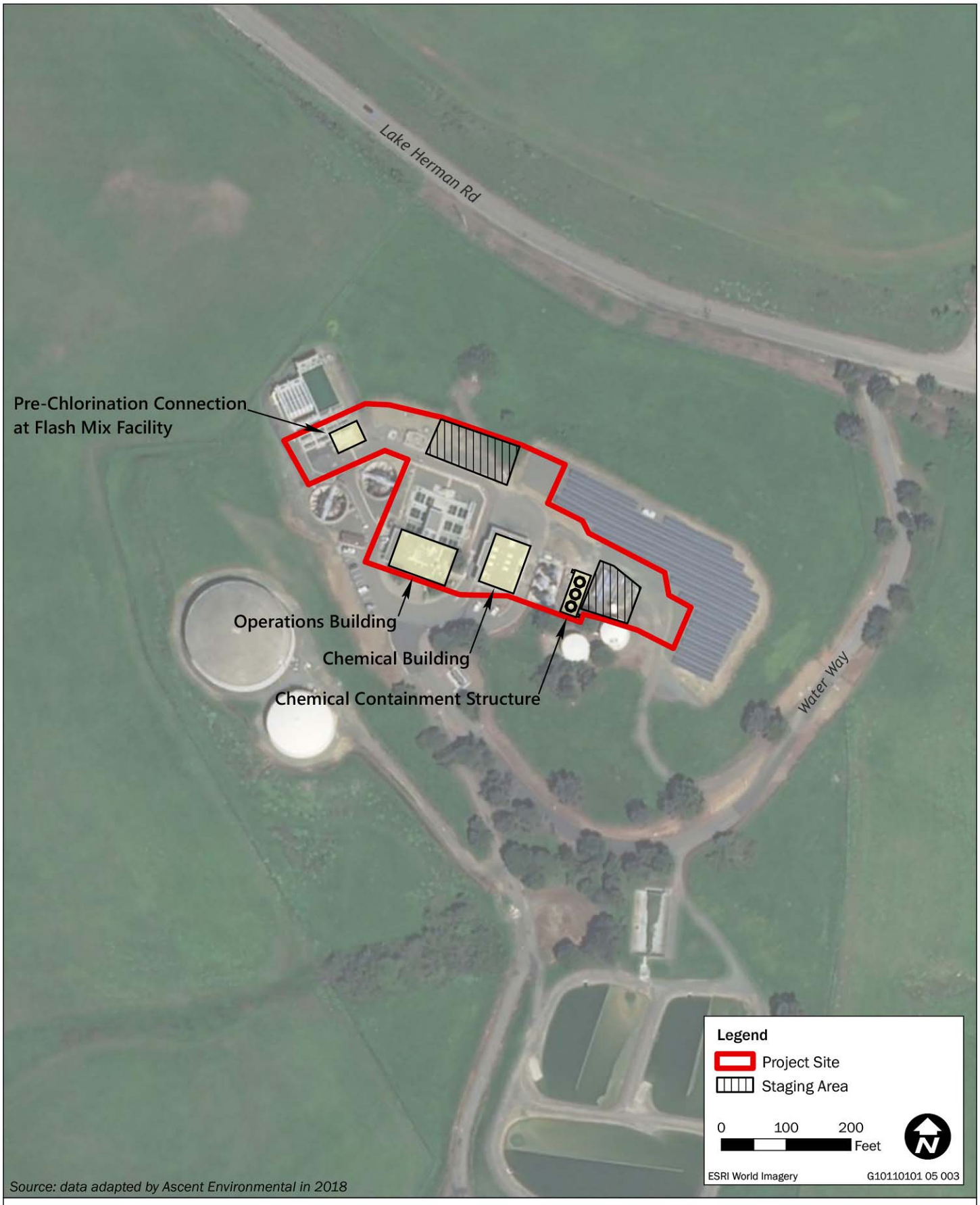
The following existing structures would be demolished and removed from the Chemical Tank Farm and project site:

- Sodium hydroxide storage tank, abandoned fiberglass reinforced plastic and plastic tanks, and associated piping materials: these elements would be removed intact or demolished on site and hauled to a landfill. Fewer than ten truck trips would be needed to remove demolished materials from the site.
- Abandoned buried reinforced concrete chemical storage tank in the existing chemical spill containment area: The buried reinforced concrete chemical storage tank is a below-grade concrete tank that is approximately 17 feet wide, 17 feet long, and 8.5 feet deep. The floor slab is 9 inches thick, and the roof and wall slabs are 8 inches thick. Three walls, the floor, and the roof of this tank would be demolished. The western wall would remain in place, as it is an integral portion of the eastern wall of the existing chemical storage tanks' containment structure. There are structural concerns related to demolishing the tank because the eastern wall of the containment structure was designed with less reinforcement. The area around the abandoned chemical storage tank would be inspected for contamination. The tank was briefly used to store potassium permanganate, which could be hazardous if encountered or combined with other chemicals.

The project would not require the relocation of any utility lines. An existing tree may need to be removed from just south of the area where the new chemical storage tanks would be installed.

2.4.2 Tank Installation and Existing System Removal

Three new 10,000-gallon chemical storage tanks would be delivered to the site pre-constructed and ready for installation in the new secondary chemical-spill containment structure. The secondary chemical-spill containment structure would be constructed through excavating an area of sufficient size and then pouring concrete to be cast in place. The tanks would be installed on new reinforced concrete pedestals, with tie-down cables for seismic restraint designed to a seismic importance factor (a risk level assigned to the facility) of 1.5. Drain piping from a sump would be installed and connected to an existing 4-inch drain pipe that discharges to the WTP's waste containment tank. The drain pipe would have a maximum depth of 4 feet and width of 2 feet. A new chemical pipe chase would be constructed to route new chemical and utility pipes



Source: data adapted by Ascent Environmental in 2018

Figure 2-3 **Construction Work Areas and Staging Areas**

from the Chemical Building. The chemical pipe chase would have a maximum depth of 4 feet and maximum width of 4 feet. Some asphalt between the Chemical Tank Farm and Chemical Building would be demolished to construct the new chemical pipe chase. New piping between the Chemical Building, Operations Building, and Flash Mix Facility would be routed in existing chemical pipe chases. The existing Alum Storage Tank would be replaced in-kind with a new 13,000-gallon tank. Additional, existing tanks not currently used would be demolished. Excavated material would be used to backfill the trench, or engineered fill would be imported. A maximum of 40 trucks of imported fill could be needed for site preparation.

Eventually, the existing disinfection system would be removed. Removal of the system would require demolition of the steel containers. No other demolition would be necessary.

2.4.3 Access

Access to the project site would be from Lake Herman Road and Water Way. No new temporary or permanent access roads would be constructed. Access to the WTP would be preserved during construction.

2.4.4 Staging Areas

Two areas have been identified north and east of the WTP that would be used for equipment and material storage and crew staging. Both locations are flat and composed of gravel. Grading and vegetation removal would not be required. The eastern staging area houses several old pipes and a small tank (approximately 10,000 gallons). The pipes would be temporarily relocated within the WTP site and the tank would be demolished. The staging areas are shown on Figure 2-3.

2.4.5 Equipment and Crews

At maximum, 8 construction workers would be on the construction site each day. Typical construction equipment would be employed at the site and would include a backhoe, a water truck, an excavator, and a grader.

2.4.6 Construction Practices

The following construction activities would be implemented by the construction contractor and would be identified as requirements in the construction contract:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) would be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site would be covered.
- All visible mud or dirt track-out onto adjacent public roads would be removed using wet power vacuum street sweepers at least once per day.
- All vehicle speeds on unpaved roads would be limited to 15 mph.
- Idling times would 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 would be provided for construction workers at all access points.

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

- A publicly visible sign would be posted with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person would respond and take corrective action within 48 hours. The Bay Area Air Quality Management District's phone number shall also be visible to ensure compliance with applicable regulations.

2.5 OPERATION

The two hypochlorite storage tanks would be operated in an alternating lead-lag fashion, with one tank actively supplying neat or dilute hypochlorite solution to the three metering pumps at all times. The other storage tank would be empty and ready to receive a delivery of neat hypochlorite solution, and after delivery and dilution the tank would be full and ready for service as the lead tank. When the lead tank reaches the designated low level, operation would be switched to the other tank. Hypochlorite solution delivery would occur via tanker trucks. The number and frequency of the sodium hypochlorite deliveries would be similar to current delivery of chlorine gas because the WTP's treatment capacity would not change and a truckload of bulk hypochlorite solution contains the same amount of chlorine equivalents delivered in two one-ton chlorine gas containers in one truckload.

The ion exchange softening system would contain three high-pressurized containers. Water would flow through the units, which would soften the water. When the ion exchange media in the self-contained units is fully consumed, the tanks are removed and replaced with new tanks. The spent media is contained within the containers. Replacement of the three units would occur about four times per year, resulting in 8 additional one-way truck trips per year compared to existing operations.

The three new metering pumps would be approximately ½- to ¾-horsepower, with two of the three pumps running continuously at a time. The new metering pumps would replace existing equipment that consume approximately the same amount of power. The pump recirculation system would require a new 1-horsepower recirculation pump that would operate approximately 12 hours per month.

The new sodium hydroxide tank would replace an existing sodium hydroxide tank and would operate similar to the existing one.

Existing employees would continue to operate the WTP; no additional employees would be needed.

2.6 SCHEDULE

Construction is anticipated to begin in June 2019 and is anticipated to last for 9 months. Construction would occur 5 days per week, generally from 7 a.m. to 5 p.m. The City intends to complete the project by March 2020.

2.7 POTENTIAL PERMITS AND APPROVALS REQUIRED

The following permits and approvals are anticipated for the project:

- Grading Permit, City of Benicia
- Tree Removal Permit, City of Benicia
- Building Permit, City of Benicia
- Administrative Design Review, City of Benicia

This page intentionally left blank.

3 ENVIRONMENTAL CHECKLIST

PROJECT INFORMATION

1. Project Title: Water Treatment Plant Chlorine Gas to Hypochlorite Conversion Project

2. Lead Agency Name and Address: City of Benicia
250 East L Street
Benicia, CA 94510

3. Contact Person and Phone Number: Laura M. Pate, P.E., Project Manager – Utilities at the Public Works Department, 707.746.4386

4. Project Location: The project is located at 100 Water Way in Benicia, California.

5. Project Sponsor's Name and Address: City of Benicia
250 East L Street
Benicia, CA 94510

6. General Plan Designation: Refer to Section 3.10, "Land Use and Planning."

7. Zoning: Refer to Section 3.10, "Land Use and Planning"

8. Description of Project:

The City of Benicia proposes to convert the water treatment plant (WTP) from using chlorine gas to sodium hypochlorite (commonly called bleach) as its primary disinfectant. The project would construct a new sodium hypochlorite system in the existing Chemical Building and Chemical Tank Farm area, adjacent to and east of the existing on-site tanks. Construction activities would disturb less than 0.5 acre of land and excavation activities would have a maximum depth of 4 feet. Construction is anticipated to begin in June 2019 and last for 9 months. Refer to Chapter 2, Project Description, for additional detail.

9. Surrounding Land Uses and Setting: The project area is located within the existing WTP facility in the northeastern area of the City of Benicia. Surrounding land uses include General Open Space to the north, and Limited Industrial to the east, south, and west.

10. Other public agencies whose approval is required: (e.g., permits, financing approval, or participation agreement) None

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun? *Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.*

Refer to Section 3.17, "Tribal Cultural Resources."

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forest Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology / Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☐ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☐ Transportation / Traffic	☐ Tribal Cultural Resources	☐ Utilities / Service Systems
☐ Mandatory Findings of Significance		☒ None With Mitigation

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

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

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

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

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

Shawna Brekke-Read, Community Development Planning Director – Community Development Department

March 27, 2019.

Date

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
   a) the significance criteria or threshold, if any, used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

3.1 AESTHETICS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. Aesthetics. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

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

Less-than-significant impact. The City of Benicia is rich with attractive views and vistas, including views of the water, surrounding hillsides, and community features. Scenic vistas at the Water Treatment Plant (WTP) include views of the Rolling Hills to the north and Boundary Hills to the northwest (City of Benicia 1999:112). The project would construct a new hypochlorite system within the existing footprint of the WTP facility. The new infrastructure would be visually consistent in scale and character as existing infrastructure at the facility and would not obstruct publicly accessible views of the scenic vistas. Therefore, the impact would be less than significant.

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

Less-than-significant impact. There are no eligible or officially-listed State Scenic Highways in the vicinity of the project area (Caltrans 2018). However, the City of Benicia General Plan designated several scenic streets and gateways, including Lake Herman Road, which is approximately 330 feet north of the WTP site. Scenic resources viewed along Lake Herman Road include the Boundary Hills, rocky ridges, grassy slopes, and riparian vegetation. The WTP is only visible from Lake Herman Road during an approximately 300-foot-long portion of the road located about 1,800 feet from the WTP site. Views are brief and consist of metal fencing, grassy slopes, scattered trees, and rooftop structures. All project activities would occur on the WTP site within and adjacent to the developed footprint of the existing facility. The project would not substantially expand the developed footprint as viewed from offsite areas and would not lengthen the time the site would be visible by motorists passing on Lake Herman Road. Overall, views of the site from off-site area would be unchanged, and activities would likely be unnoticeable to motorists because of the scale of the activities. Therefore, the impact would be less than significant.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less-than-significant impact. The WTP is located within an undeveloped area in the City of Benicia. Visibility of the site from public areas is generally low; public views of the WTP site include a short portion of Lake Herman Road (see criterion (b)), Old Lake Herman Road (from which the western part of the WTP is visible), and Addinson Road (which is in an industrial area). Therefore, viewer sensitivity as it relates to changes at the WTP is low. The site is an existing WTP and has an industrial visual character. Construction activities would introduce construction vehicles, ground disturbance, and other similar activities to the site. Visibility of these activities to the public would be low, and construction activities would be visually consistent with the

existing industrial nature of the site. All new permanent structures would be installed within the existing footprint of the WTP facility and would be visually consistent with existing tanks and infrastructure at the site. Therefore, the project would have a less-than significant impact on the existing visual character and quality of the site and its surroundings.

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

No impact. Nighttime construction activities are not anticipated, and no new sources of on-site lighting or reflective materials are proposed as part of the project. Therefore, no impact would occur.

3.2 AGRICULTURE AND FORESTRY RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II. Agriculture and Forestry Resources. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997, as updated) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

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?

No impact. The statewide Farmland and Monitoring Program designates the project area as Urban and Built-Up Land. The project area does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (DOC 2017). Therefore, the project would not convert Farmland to a non- agricultural use. No impact would occur.

b) Conflict with existing zoning for agricultural use or a Williamson Act contract?

No impact. There are no lands under a Williamson Act contract at or in the vicinity of the project area (DOC 2013). According to the Title 17, "Zoning," of the Benicia Municipal Code there are no lands within the City zoned for agricultural use. Therefore, the project would not conflict with existing zoning for agricultural use or a Williamson Act contract. No impact would occur.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No impact. The project area is not zoned as forest land or timberland and does not include any timberland resources (CAL FIRE 2006). Therefore, no impact would occur.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No impact. There is no forest land on the project area or in the project vicinity (CAL FIRE 2006). No impact would occur.

e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

No impact. As discussed in criteria (a) and (d) above, the project area is not located within proximity to any land zoned or utilized for farmland or forest land. Therefore, the project would not involve changes to the existing environment that would convert farmland to non-agricultural use or convert forest land to non-forest uses. No impact would occur.

3.3 AIR QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. Air Quality.				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the following determinations.				
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

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

No impact. The Bay Area Air Quality Management District (BAAQMD) attains and maintains air quality conditions in the Bay Area, including the project area. It does so through a comprehensive program of monitoring, permitting, adopting rules and regulations, developing plans for the attainment of ambient-air quality standards, and implementing other programs and regulations required by the Clean Air Act and California Clean Air Act. On April 19, 2017, BAAQMD adopted the *2017 Clean Air Plan: Spare the Air, Cool the Climate* (BAAQMD 2017b). The plan aims to lead the region to a post-carbon economy, to continue progress toward attaining all State and Federal air quality standards, and to eliminate health risk disparities from exposure to air pollution among Bay Area communities. It includes a wide range of proposed "control measures"—actions to reduce combustion-related activities, decrease fossil fuel combustion, improve energy efficiency, and decrease emissions of potent greenhouse gases.

The emission inventories used to develop a region's air quality attainment plans are based primarily on projected population growth and vehicle miles traveled (VMT) for the region, which are based, in part, on the planned growth identified in regional and community plans. Therefore, projects that would result in increases in population or employment growth beyond that projected in regional or community plans could result in increases in VMT above that planned in the attainment plan, further resulting in mobile source emissions that could conflict with a region's air quality planning efforts. Increases in VMT beyond that projected in area plans generally would have a significant adverse incremental effect on the region's ability to attain or maintain state and federal ambient air quality standards.

Temporary construction activities would result in slight increases in vehicle trips associated with worker commute, materials delivery, and haul truck trips (see Section 3.16, Transportation and Traffic). However, these additional trips would only occur during the 9-month construction period. During the operational phase, up to 8 additional one-way truck trips per year would be required. However, the project does not include residential development, nor would it require any new permanent employees. Therefore, the project would not change the amount of development projected for Solano County and would be consistent with the population growth and VMT projections contained in the BAAQMD's air quality attainment plan (*2017 Clean Air Plan: Spare the Air, Cool the Climate* (BAAQMD 2017b)). There would be no impact.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less-than-significant impact. The U.S. Environmental Protection Agency (EPA) has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the federal CAA. The CAA required EPA to establish the National Ambient Air Quality Standards (NAAQS) for ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable and fine particulate matter (PM_{10} and $PM_{2.5}$, respectively), and lead. The California Air Resources Board (CARB) is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the CCAA. The CCAA required CARB to establish its own California Ambient Air Quality Standards (CAAQS). CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. In most cases, the CAAQS are more stringent than the NAAQS.

Concentrations of emissions from criteria air pollutants (the most prevalent air pollutants known to be harmful to human health) are used to indicate the quality of the ambient air. Criteria air pollutants include ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. Fuel combustion, evaporation of chemical solvents and fuels, vehicle exhaust, and construction are common sources of criteria air pollutants. Criteria air pollutants can cause both acute and chronic health effects. For example, short-term exposure to high concentrations of NO_2 can lead to acute effects such as coughing, difficulty breathing, headache, and chest pain; while long-term exposure to lower, ambient concentrations could lead to chronic bronchitis and decreased lung function. Short-term exposure to high concentrations of particulate matter can lead to acute effects such as breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, and premature death; while long-term exposure to lower, ambient concentrations could lead to alternations to the immune system and carcinogenesis (EPA 2018).

In May 2017, BAAQMD updated its CEQA Guidelines, which may inform environmental review for development projects in the Bay Area, but do not commit local governments or BAAQMD to any specific course of regulatory action (BAAQMD 2017a). For the purposes of this project, the following BAAQMD thresholds of significance are used to determine if an impact on air quality would be significant. The project would result in a significant air quality impact if it would result in an exceedance of any of the following average daily levels of criteria air pollutants:

- reactive organic gases (ROG): 54 lbs/day;
- nitrogen oxides (NO_X): 54 lbs/day;
- PM_{10}, exhaust: 82 lbs/day;
- $PM_{2.5}$, exhaust: 54 lbs/day; and
- particulate matter, fugitive dust ($PM_{2.5}/PM_{10}$): Implementation of BAAQMD's Basic Construction Mitigation Measures during project construction.

Construction and operation of the project would result in additional criteria air pollutant emissions.

Construction

Construction of the project would include minor site preparation, tank removal, demolition of the concrete chemical storage tank, trenching, and tank installation. These activities would involve the use of heavy-duty construction equipment that would generate short-term emissions of ROG, NO_x, PM_{10}, $PM_{2.5}$, and fugitive dust. Air pollutant emissions would also be generated by worker commute, equipment delivery, and haul truck trips.

Project air pollutant emissions were calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 computer program. Modeling was based on project-specific information (e.g., number and type of equipment, hours of use per day, and construction phase schedule) when such information was available; reasonable assumptions based on typical construction activities; and default values in CalEEMod that are based on location. Construction air pollutant emissions are presented in Table 3.3-1 below. For detailed modeling and assumptions, see Appendix A.

Table 3.3-1 Short-term Emissions of Criteria Air Pollutants

Construction Activity	Daily Emissions (lb/day)				
	ROG	NO_x	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)	Fugitive Dust
Construction[1]	1	12	1	1	1 + BMPs
Threshold of Significance[2]	54	54	82	54	BMPs
Exceeds Threshold?	No	No	No	No	No

Notes: ROG = reactive organic gases; NO_x = nitrogen oxides; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; BMP = best management practice

1. Construction emissions are given in maximum daily emissions.

2. BAAQMD's Thresholds of Significance are for average daily emissions.

Source: Appendix A

Given that project maximum daily emissions are below the thresholds of significance, as shown in Table 3.3-1, project average daily emissions would not exceed BAAQMD's thresholds of significance for ROG, NO_x, PM_{10} (exhaust), or $PM_{2.5}$ (exhaust) as well. The project also incorporates the BAAQMD-recommended fugitive dust best management practices (BMPs) and, therefore, would comply with BAAQMD's fugitive dust emissions threshold. Project construction would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Construction impacts would be less than significant.

Operation

During the operational phase, project maintenance would be comparable to maintenance of the existing WTP with a few exceptions. Four times per year, three high-pressurized containers in the ion exchange softening system would be removed and replaced with new tanks, resulting in up to 8 additional one-way truck trips per year compared to existing operations. A new 1-horsepower recirculation pump operating approximately 12 hours per month would be added. These are minor sources of air pollutant emissions, which would generate emissions far below the average daily emissions generated during project construction listed in Table 3.3-1. Operational impacts would be less than significant.

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)?

Less-than-significant impact. By its very nature, air pollution is largely a cumulative impact, and past, present, and future development projects contribute to the region's adverse air quality impacts. No single project results in substantial enough emissions to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions can contribute to cumulatively significant adverse air quality impacts.

In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. The Solano County portion of the SFBAAB is currently designated as nonattainment for ozone and $PM_{2.5}$ with respect to the NAAQS and for ozone, $PM_{2.5}$, and PM_{10} with respect to the CAAQS. As discussed in the analysis under criterion (b) above, project-generated emissions would not exceed applicable BAAQMD thresholds, including those for NO_X and ROG (ozone precursors), $PM_{2.5}$, and PM_{10} and therefore, would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under the CAAQS or NAAQS. As a result, project-generated emissions of criteria air pollutants and precursors would not be cumulatively considerable. Impacts would be less than significant.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less-than-significant impact. According to the *California Almanac of Emissions and Air Quality* (CARB 2013), most health risks from toxic air contaminants (TACs) can be attributed to relatively few compounds, the most important being diesel particulate matter (DPM). DPM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although DPM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used. Existing sources of DPM in the project areas are exhaust from occasional trucks and construction equipment with diesel engines.

Sensitive receptors are generally considered to include those land uses where exposure to pollutants could result in health-related risks to sensitive individuals, such as children or the elderly. Residential dwellings, schools, hospitals, playgrounds, and similar facilities are of primary concern because of the presence of individuals particularly sensitive to pollutants and/or the potential for increased and prolonged exposure of individuals to pollutants. The WTP is in a rural area surrounded largely by open space and industrial uses. The nearest sensitive receptors are single-family residences located over 3,000 feet to the west of the WTP on Smith Court in Benicia. Construction of the project would result in the short-term generation of CO and TACs, which are discussed below.

Carbon Monoxide

The single largest source of CO is motor vehicle engines. CO concentration near roadways is a direct function of vehicle idling time and, thus, traffic flow conditions. According to BAAQMD's screening methodology, if project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour, impacts would be less than significant. Although there would be a temporary and periodic increase in vehicle trips related to worker commute, equipment delivery, and haul truck trips, the project would generate far below 44,000 vehicles per hour during construction and operation: the project would generate up to 96 one-way daily trips on area roadways spread out throughout the workday during the construction period, and 8 additional one-way truck trips per year during operation. The project would not increase traffic on the roadways or intersections in the project vicinity to levels that would exceed the 1-hour CAAQS of 20 parts per million (ppm) or the 8-hour CAAQS of 9 ppm. Therefore, CO impacts would be less than significant.

Toxic Air Contaminants

The project would result in short-term diesel exhaust emissions from mechanical equipment and haul truck trips. However, the nearest sensitive receptor is more than 3,000 feet away from the WTP. The dose to which receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards), which is a function of the concentration of a substance and duration of exposure. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual. According to the OEHHA, health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70- or 30-year exposure period. However, such assessments should be limited to the period/duration of activities that generate TAC emissions (OEHHA 2015). Although construction would last 9 months, the majority of DPM-emitting activities associated with the project would last for less than 60 days,

which is a short exposure period relative to the 30- or 70-year exposure timeframe recommended for health risk assessments. In addition, studies show that DPM is highly dispersive and that concentrations of DPM decline with distance from the source (e.g., 500 feet from a freeway, the concentration of diesel PM decreases by 70 percent) (Roorda-Knape et al. 1999 and Zhu et al. 2002, as cited in CARB 2005:9). Therefore, considering the lack of sensitive receptors near the project area, highly dispersive properties of DPM, and relatively short duration of construction activities, the construction-related TACs would not expose sensitive receptors to a substantial concentration of TACs. Impacts would be less than significant.

e) Create objectionable odors affecting a substantial number of people?

Less-than-significant impact. Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). Odor sources of concern include wastewater treatment plants, sanitary landfills, composting facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food processing facilities (BAAQMD 2017a). Water treatment plants, which remove contaminants from raw water to make it safe for drinking, are not considered an odor source.

The project would not introduce new, permanent odor-generating facilities, nor would it place receptors substantially closer to existing sources of odors. Minor odors from the use of onsite equipment during construction activities would be intermittent, temporary, and would dissipate rapidly from the source with an increase in distance. The closest sensitive receptor is 3,000 feet from the WTP and would not be able to perceive construction-generated odors. As a result, this impact would be less than significant.

3.4 BIOLOGICAL RESOURCES

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

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 or the U.S. Fish and Wildlife Service?

Less-than-significant impact with mitigation incorporated. To identify special-status species with the potential to occur in the project area, the following databases were queried:

- California Natural Diversity Database (CNDDB) within a five-mile radius of the project for sensitive natural communities, special-status plants, and special-status wildlife.
- California Native Plant Society (CNPS) database within four U.S. Geological Survey (USGS) quadrangles (Cordelia, Benicia, Vine Hill, and Fairfield South quadrangles) for special-status plant species. The plant species search was limited to four quadrangles due to the completely developed nature of the project area, and because a wider search would likely return rare plants associated with serpentine and other sensitive habitats present in the San Francisco Bay area, but not present on the project area.

Based on a review of these search results (CNDDB 2018, CNPS 2018), 20 special-status wildlife species and 27 special-status plant species have potential to occur on the project area (Appendix B). Species ranges and habitat requirements were examined for these species. The project area does not contain suitable habitat for any of the species and/or is not within range of the species. Therefore, it was determined that no special-status wildlife or plant species are expected to occur on the project area. Refer to Appendix A for additional detail. The project area does, however, contain and is adjacent to potentially suitable habitat (landscape trees) for native migratory bird species that do not have a special-status designation but are afforded protection under state law.

Plants

As previously explained, special-status plants are not expected to occur on the project area. Therefore, the project would have no impact on special-status plant species.

Wildlife

As previously explained, special-status wildlife species are not expected to occur on the project area. However, the project area does contain and is adjacent to potential habitat for migratory bird species protected under state law. Destruction of any bird nest or take of the nest or eggs of any bird is a violation of Section 3503 of the California Fish and Game Code. Project construction could include removal of one of the landscape trees and therefore has the potential to result in direct removal of bird nests. Additionally, construction activities occurring during nesting season (between approximately September 1 and January 31), such as demolition, ground disturbance, and presence of construction equipment and crews, could generate noise and visual stimuli that may result in disturbance to active bird nests, if present, potentially resulting in nest abandonment. Nest abandonment may result in death of chicks or loss of eggs if the adult bird does not return to the nest. This would be a significant impact. Implementation of the following mitigation measure would reduce the project's impacts to nesting birds to a less-than-significant level.

Mitigation Measure Bio-1: Avoid or minimize effects to nesting birds.

The following measures shall be implemented to avoid or minimize loss of active bird nests:

- To minimize the potential for loss of active bird nests, project activities (e.g., ground disturbance, demolition, use of heavy equipment, presence of construction crews) shall commence during the nonbreeding season (September 1-January 31). If all project activities are completed during the nonbreeding season, no further mitigation would be required.

- Prior to commencing project activities between February 1 and August 31, a qualified biologist shall conduct preconstruction surveys for nests on any tree, other vegetation, or structure within 500 feet of the project footprint. The surveys shall be conducted no more than 14 days before construction begins. If no active nests are found during focused surveys, no further action under this measure will be required. If active nests are observed during the preconstruction surveys, the biologist shall notify California Department of Fish and Wildlife (CDFW). No tree shall be removed if an active bird nest is present. If necessary, modifications to the project design to avoid removal of occupied habitat while still achieving project objectives shall be evaluated and implemented to the extent feasible. If avoidance is not feasible or conflicts with project objectives, construction shall be prohibited within a minimum of 100 feet of the nest to avoid disturbance until the nest is no longer active. These recommended buffer areas may be reduced through consultation with CDFW.

Significance after Mitigation

Implementation of Mitigation Measure Bio-1 would ensure that the project would not result in disturbance to or loss of nesting birds through either undertaking activities outside of nesting bird season or implementing buffers around active nests during the nesting bird season. Therefore, this impact would be reduced to a less-than-significant level with mitigation.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

No impact. The project area does not contain riparian or other sensitive natural habitat, as the project area is developed. All project activities would take place within previously developed areas. Therefore, there would be no impact to riparian habitat or other sensitive natural communities.

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?

No impact. The project area does not contain any wetland, stream, or other aquatic habitat that could be considered jurisdictional waters of the United States of state, as the project area is developed. All project activities would take place within previously developed areas. Therefore, there would be no impact to wetlands or other waters of the United States or state.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No impact. A search of CDFW's California Essential Habitat Connectivity data did not identify any designated essential habitat connectivity areas on the project area or within the immediate project vicinity. Additionally, the project area does not contain any known wildlife nursery sites. The project area is located completely within the existing Benicia WTP site, and all project activities, including staging, will occur within the Benicia WTP site. The project would not expand the site footprint. Therefore, there would be no impact.

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

Less-than-Significant Impact with Mitigation Incorporated. The City of Benicia municipal code includes measures to protect certain trees, including "City Property Trees" which include any tree maintained by the city on any property owned in fee by the City of Benicia that is greater than 8 inches in diameter measured 48 inches above the ground. Project implementation could result in removal of a tree which may qualify as a protected tree under City of Benicia municipal code. Removal of a tree designated as protected by City of Benicia municipal code without proper permitting and mitigation would result in conflict with the municipal code. This would be a significant impact. Implementation of the following mitigation measure would reduce the project's impacts to protected trees to a less-than-significant level.

Mitigation Measure Bio-2: Apply for Tree Removal Permit from the City of Benicia

The following measures shall be implemented to avoid conflict with City of Benicia municipal code:

- A certified arborist shall conduct inventory of protected trees in the project area that are planned for removal. The inventory will include a map of tree locations in the project area, tree species, approximate height, and trunk diameter measured at 48 inches above the ground.
- If trees planned for removal are not considered to be protected trees (e.g., less than 8 inches in diameter), then further mitigation is not required.
- If the tree planned for removal in the project area is determined to be a protected tree, the project applicant will submit a tree removal permit application to the City of Benicia Parks and Community Services Department. Approval of the tree removal permit is at the discretion of the City of Benicia Parks and Community Services Department.

- Upon review of the tree removal permit, the City arborist may determine that replacement of the removed tree with a new tree is necessary, at an appropriate replacement value (the actual cost of replacing the same tree size and canopy removed or destroyed).

- An applicable fee will be required upon approval for tree removal.

Significance after Mitigation

Implementation of Mitigation Measure Bio-2 would ensure that the project would not result in a conflict with the City's tree protection ordinance. Therefore, this impact would be reduced to a less-than-significant level with mitigation.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No impact. The project area is within the plan area of the proposed Solano Habitat Conservation Plan (Solano HCP). The Solano HCP has not been adopted. There is no adopted HCP in effect in the project area, and there would be no impact.

3.5 CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. Cultural Resources. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

a, b) Cause a substantial adverse change in the significance of a historical resource or an archaeological resource as defined in Section 15064.5?

Less-than-significant impact with mitigation incorporated. A cultural resources literature search was conducted on December 5, 2018 by the Northwest Information Center (NWIC) of California Historical Resources Information System at Sonoma State University in Rohnert Park. The records search was conducted to determine if cultural resources had been previously recorded on the project area and within a 0.25-mile radius of the project area. The records search also included a review of the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), California Inventory of Historic Resources (1976), and the Directory of Properties in the Historic Properties data file for Solano County. The records search found no architectural or archaeological resources within the project area. Construction activities associated with the project would occur within already disturbed areas of the existing WTP facility and would involve relatively shallow excavations of up to 4 feet with a maximum width of up to 4 feet near the existing Chemical Building; therefore, the potential for the unearthing previously undiscovered buried archaeological materials within the project area is low. However, the potential exists that unidentified archaeological resources could be discovered during construction. Damage to an unknown unique archaeological resource or historical resource would be a potentially significant impact. Implementation of the following mitigation measure would reduce the project's impacts to a less-than-significant level.

Mitigation Measure Cult-1: Inadvertent Discovery of Historical and Archaeological Resources Protocol

If any prehistoric or historic-era subsurface archaeological features or deposits are discovered during construction, all ground disturbing activities shall be stopped, and a qualified professional archaeologist shall be retained to assess the significance of the find. If the find is determined to be significant by the qualified archaeologist (i.e., because it is determined to constitute either a historical resource or a unique archaeological resource), the archaeologist shall develop appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected. Procedures could include but would not necessarily be limited to preservation in place, archival research, subsurface testing, or contiguous bock unit excavation and data recovery. If a prehistoric archaeological feature is discovered, the City shall notify the Yocha Dehe Wintun Nation. The archaeologist shall consider input from the Yocha Dehe Wintun Nation when determining the significance of the find and when developing protective procedures.

Significance after Mitigation

Implementation of Mitigation Measure Cult-1 would reduce impacts associated with archaeological resources to a less-than-significant level because the measures would require the implementation of professionally accepted procedures for the discovery of previously undocumented archaeological resources.

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

Less-than-significant impact with mitigation incorporated. Construction activities associated with the project would involve soil disturbance through grading and excavation. However, excavation would be limited to 4 feet below the surface, and excavation would be limited to a maximum width of up to 4 feet near the existing Chemical Building. Therefore, construction activities are unlikely to unearth significant paleontological resources or sites. Additionally, no known unique geological features are located within the project area. However, the potential exists that ground disturbing activities could affect the integrity of undiscovered paleontological resources. This would be a potentially significant impact. Implementation of the following mitigation measure would reduce the project's impacts to a less-than-significant level.

Mitigation Measure Cult-2: Paleontological Worker Awareness Training

The City or contractor shall retain a qualified paleontologist to conduct an on-site training that will alert all construction personnel and operational staff involved in equipment training about the possibility of encountering fossils in previously-undisturbed strata. The appearance and types of fossils likely to be seen during construction will be described. Construction personnel shall be trained about the proper notification procedures should fossils be encountered, including halting operations and notifying the City, which shall then retain a qualified paleontologist for identification and salvage of fossils.

Significance after Mitigation

Implementation of Mitigation Measure Cult-2 would reduce impacts associated with paleontological resources to a less-than-significant level because construction workers and operational personnel would be alerted to the possibility of encountering paleontological resources and professionally accepted procedures for the discovery of paleontological resources would be implemented in the event of a find.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less-than-significant impact. Proposed construction activities would occur within already disturbed areas of the existing WTP facility. There are no known humans remains or known cemeteries within the vicinity of the project area. The location of grave sites and Native American remains can occur outside of identified cemeteries or burial sites; however, it is extremely unlikely a burial would be located during excavation due to the limited and shallow nature of proposed excavation near the existing Chemical Building. Nonetheless, in compliance with California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097, all construction activities would cease if human remains are unearthed during construction, and the Solano County coroner and Native American Heritage Commission (NAHC) would be notified immediately. Compliance with these statutes would provide an opportunity to avoid or minimize the disturbance of human remains, and to appropriately treat any remains that are discovered. Therefore, impacts would be less than significant.

3.6 GEOLOGY AND SOILS

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

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to California Geological Survey Special Publication 42.)

No impact. The project is not in an Alquist-Priolo Fault Zone, and no known active faults are mapped as crossing or projecting toward the project area (DOC 2015a, DOC 2015b). Project activities would not exacerbate fault rupture hazards. No impact would occur.

ii) Strong seismic ground shaking?

Less-than-significant impact. The project area is located within an area susceptible to high ground shaking (City of Benicia 1999:147). Consistent with the seismic importance factor assigned to the existing WTP facility, the tanks would be installed on new reinforced concrete pedestals, with tie-down cables for seismic restraint. The project would also be constructed consistent with the California Building Code and the City of Benicia building permit requirements, which include standards intended to protect structures from earthquake related and seismic activity. Furthermore, project activities would not exacerbate existing seismic conditions. Impacts related to seismic hazards or ground shaking would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

No impact. The project area is not located within an area susceptible to ground failure or liquefaction (City of Benicia 1999:149). Project activities would not exacerbate liquefaction hazards. Therefore, no impact would occur.

iv) Landslides?

Less-than-significant impact. The project area is located within an area susceptible to potential landslide hazards (City of Benicia 1999:149). However, facilities would be placed on disturbed, level areas of the existing WTP facility. Therefore, project activities would not result in modifications to the surrounding undeveloped hillsides that would exacerbate existing landslide hazards. Impacts would be less than significant.

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

Less-than-significant impact. Construction activities associated with the project would involve soil disturbance through grading and excavation, which could increase soil erosion. Construction activities would occur within already disturbed areas of the WTP facility and grading activities would disturb less than 0.5 acre. Pursuant to Section 15.28.070[C] of the Benicia Municipal Code, an erosion control plan would be required for the project, and the contractor would implement measures to prevent erosion during construction and post-construction. No additional ground disturbance would occur during operation. Impacts would be less than significant.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less-than-significant impact. The City of Benicia is underlain by soils with a high shrink-swell potential. Shrink-swell soils contain large amounts of clay that swell when wet and shrink when dry (Solano County 2008:HS-29). This can result in potential damage to structures. Disturbed areas would be backfilled with excavated material; if needed for structural support, fill would be imported. In addition, the project would be constructed consistent with the California Building Code and the City of Benicia building permit requirements, which include standards intended to protect structures from unstable soils. Therefore, impacts related to unstable geologic units and soils would be less then significant.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?

Less-than-significant impact. The City of Benicia is underlain by soils with a high shrink-swell potential. Shrink-swell soils contain large amounts of clay that swell when wet and shrink when dry (Solano County 2008:HS-29). This can result in potential damage to structures. Disturbed areas would be backfilled with excavated material; if needed for structural support, fill would be imported. In addition, the project would be constructed consistent with the California Building Code and the City of Benicia building permit requirements, which include standards intended to protect structures from unstable soils. Therefore, impacts related to expansive soils would be less than significant.

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

No impact. The project does not include the construction of a septic tank or alternative wastewater disposal system. No impact would occur.

3.7 GREENHOUSE GAS EMISSIONS AND ENERGY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. Greenhouse Gas Emissions. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐
c) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
d) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

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

Less-than-significant impact. Certain gases in the earth's atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the earth's surface temperature. GHGs are responsible for "trapping" solar radiation in the earth's atmosphere, a phenomenon known as the greenhouse effect. Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The quantity of GHGs in the atmosphere that ultimately result in climate change is not precisely known but is enormous; no single project alone would measurably contribute to an incremental change in the global average temperature, or to global, local, or micro climates. From the standpoint of the California Environmental Quality Act (CEQA), GHG impacts relative to global climate change are inherently cumulative. Scientists have identified several ways in which global climate change could alter the physical environment in California (CNRA 2012, DWR 2006, IPCC 2007). These include:

- increased average temperatures;
- modifications to the timing, amount, and form (rain vs. snow) of precipitation;
- changes in the timing and amount of runoff;
- reduced water supply;
- deterioration of water quality; and
- elevated sea level.

In California, Assembly Bill 32 mandates that emissions of GHGs must be capped at 1990 levels by the year 2020 (Health and Safety Code Section 38530). In August 2016, Governor Brown signed Senate Bill 32 and Assembly Bill 197, which serve to extend California's GHG reduction programs beyond 2020 to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. Executive Order S-3-05, signed by Governor Arnold Schwarzenegger in 2005, established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

On December 14, 2017, CARB approved the *2017 Climate Change Scoping Plan* (2017 Scoping Plan). The 2017 Scoping Plan lays out the framework for achieving the mandate of SB 32 of 2016 to reduce statewide GHG emissions to at least 40 percent below 1990 levels by the end of 2030 (CARB 2017). On July 11,

2018, CARB announced that California has met its target of reducing GHG emissions to below 1990 levels by 2020 (CARB 2018).

The Bay Area Air Quality Management District (BAAQMD) attains and maintains air quality conditions in the Bay Area, including the project area. BAAQMD also recommends methods for analyzing project-generated GHGs in CEQA analyses. BAAQMD developed thresholds of significance to provide a uniform scale to measure the significance of GHG emissions from land use and stationary source projects in compliance with CEQA and AB 32. However, since the passage of SB 32 and AB 197 and the associated adoption of a revised statewide emissions target of 40 percent below 1990 levels by 2030, BAAQMD has not yet adopted new thresholds in compliance with this target.

BAAQMD's approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions needed to move us towards climate stabilization. If a project would generate GHG emissions above the threshold level, it would be considered to contribute substantially to a cumulative impact and would be considered significant. BAAQMD's threshold of significance for operational GHG emissions is 1,100 metric tons of CO_2 equivalents per year (MT CO_2e/yr). With respect to construction activities, BAAQMD has not developed significance thresholds for GHG emissions emitted during project construction. However, BAAQMD recommends that lead agencies quantify and disclose construction-related GHG emissions and make a significance determination of these emissions (BAAQMD 2017). Thus, the 1,100 MT CO_2e/yr threshold is used to evaluate construction and operational emissions.

Construction and operation of the project would generate GHG emissions.

Construction

Construction of the project would include minor site preparation, tank removal, demolition of the concrete chemical storage tank, trenching, and tank installation. These activities would result in the generation of GHG emissions from the use of heavy-duty off-road construction equipment, haul trucks associated with materials transport, and vehicle use during worker commute.

Project GHG emissions were calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 computer program. Modeling was based on project-specific information (e.g., number and type of equipment, hours of use per day, and construction phase schedule) where available; reasonable assumptions based on typical construction activities; and default values in CalEEMod that are based on location. Project construction would generate a total of 32 MT CO_2e/year, which is well below BAAQMD's threshold of 1,100 MT CO_2e/year (see Appendix A for detailed modeling results). Impacts would be less than significant.

Operation

During the operational phase, project maintenance would be comparable to maintenance of the existing WTP with a few exceptions: four times per year, three high-pressurized containers in the ion exchange softening system would be removed and replaced with new tanks, resulting in 8 additional one-way truck trips per year. A new 1-horsepower recirculation pump operating approximately 12 hours per month would be added. These are minor sources of GHG emissions compared to existing emissions at the facility, and they would generate emissions far below the emissions generated during project construction. This impact would be less than significant.

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

Less-than-significant impact. BAAQMD's approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions. As discussed under criterion (a), the total GHG emissions associated with the project, at 32 MT CO_2e/year, would be well below the recommended threshold of 1,100 MT CO_2e/yr. Therefore, the project would not conflict with federal or state regulations adopted for the purpose of reducing GHG emissions.

The City of Benicia's *Climate Action Plan* (2009) aims to reduce GHG emissions to 10 percent below 2000 levels by 2020, in line with state legislation, by implementing various strategies regarding provisioning of renewable energy, electricity and water conservation, carbon sequestration, green building, and transportation. Objective WW-3 is to reduce the emissions from water and wastewater plant operations by 95 percent by 2020. However, there are no specific strategies outlined to achieve this objective that are relevant to the project. Therefore, the project would not conflict with the *Climate Action Plan*. As a result, this impact would be less than significant.

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

Less-than-significant impact. The project would consume energy resources during construction and operation.

Construction

Energy would be consumed during project construction to operate and maintain construction equipment, transport construction materials and excavated fill, and for worker commute. This one-time energy expenditure required to construct the project would be nonrecoverable. The energy needs for project construction would be temporary and would not require additional capacity or increase peak or base period demands for electricity or other forms of energy. Given the need for the project as well as the typical nature of the project's construction fuel consumption, this would not be an inefficient, wasteful, or unnecessary consumption of energy resources. Therefore, impacts would be less than significant.

Operation

During the operational phase, project maintenance would be comparable to maintenance of the existing WTP with a few exceptions: four times per year, three high-pressurized containers in the ion exchange softening system would be removed and replaced with new tanks, resulting in 8 additional one-way truck trips per year. A new 1-horsepower recirculation pump operating approximately 12 hours per month would be added. The fuel and electricity needs would be minimal and would not require additional capacity or increase peak or base period demands for electricity or other forms of energy. Given the need for the project as well as the minimal operational energy demands, this would not be an inefficient, wasteful, or unnecessary consumption of energy resources. Therefore, impacts would be less than significant.

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

No impact. The State's 2008 Update Energy Action Plan focuses on energy efficiency, demand response, renewable energy, and energy provisioning reliability and infrastructure (CEC and CPUC 2008). Policies regarding these areas relate to commercial and residential energy use or electricity and natural gas provisioning and are not directly applicable to public services like water treatment plants. Furthermore, as discussed in criterion (c), project construction and operation would not be considered an inefficient, wasteful, or unnecessary consumption of energy resources. Thus, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. There would be no impact.

3.8 HAZARDS AND HAZARDOUS MATERIALS

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

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

Less-than-significant impact. Construction activities would involve the use of hazardous materials such as fuels, lubricant, and solvents typically associated with construction equipment and vehicles. These materials are commonly used during construction and are not acutely hazardous. Any materials used during construction activities would be handled in accordance with applicable laws, regulations, and protocols related to protect worker, user, and public safety.

Project operation would involve the use of hypochlorite solution and three high-pressurized ion exchange containers to filter raw water. The hypochlorite solution would be stored on-site in two storage tanks. Delivery of the hypochlorite solution to the project area would occur via tanker trucks. The hypochlorite solution contains the same amount of chlorine equivalents as the chlorine currently delivered to the WTP facility in two one-ton chlorine gas containers in one truckload. The ion exchange containers would be replaced and delivered to the WTP facility four times per year, resulting in 8 additional one-way trucks trips to and from the facility. Maintenance and delivery of the hypochlorite solution and ion exchange containers would be completed by trained personnel in compliance with applicable regulations and statutes for handling and transporting such materials. In addition, pursuant to Section 17.70.260[D], "Hazardous Materials," of the Benicia Municipal Code, a Hazardous Materials Release Response Plan shall be prepared and submitted to the City and Benicia Fire Department. Therefore, project operation would not create a hazard to the public or environment. Impacts would be less than significant.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?

Less-than-significant impact. Reasonably foreseeable upset and accident conditions could include small spills or leaks associated with the use of construction equipment and vehicles, as described in criterion (a). As previously discussed, any materials utilized during construction activities would be handled in accordance with applicable laws, regulations, and protocols and operation of the project would not result in any hazards to the public.

As discussed under criterion (a), maintenance activities would be limited to replacement of ion exchange containers four times per year and would not meaningfully change routine WTP maintenance activities and use of hazardous materials. Impacts would be less then significant.

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

No impact. The nearest school, Matthew Turner Elementary, is located approximately 2 miles southeast of the project area. There are no schools within 0.25 mile of the project area. No impact would occur.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Less-than-significant impact. A search of the California Department of Toxic Substances Control EnviroStor Database and the California Environmental Protection Agency Cortese list was conducted for the project area and surrounding areas to identify potential hazardous contamination sites. There are no known sites located on the project area (DTSC 2018a). The nearest facility is the Panoche landfill facility, which was certified as closed in 2003. (DTSC 2018b, CalEPA 2018). Construction activities would only occur on the existing WTP facility and would not disturb soils at the Panoche landfill facility. The storage tank to be demolished and removed during site preparation activities was briefly used to store potassium permanganate, which could be hazardous if encountered or combined with other chemicals. The area around the abandoned chemical storage tank would be inspected for contamination prior to demolition and removal. If chemicals are encountered, the project area will be properly treated in accordance with applicable regulations and statutes. Therefore, the impact would be less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No impact. The WTP is not located in an airport land use plan, and there are no public airports or public use airports within 2 miles of the project area (Solano County Airport Land Use Commission 2002, Contra Costa County 2000: 3-3). No impact would occur.

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?

No impact. There are no private airstrips within 5 miles of the project area. No impact would occur.

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

No impact. The City of Benicia Emergency Operations Plan includes planned response to emergency situations associated with significant natural, technological, and human caused emergencies or disasters within the City of Benicia. Construction activities would occur within the existing WTP site and all equipment would be stored on-site within designated staging areas. Project operation would not interfere with the City of Benicia Emergency Operations Plan. No impact would occur.

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?

Less-than-significant impact with mitigation incorporated. The project area is designated as a high fire hazard severity zone within the City of Benicia Local Response Area (CAL FIRE 2007). However, construction activities would be contained within already-disturbed areas of the WTP site. These areas generally do not have substantial vegetation that could be ignited in the case of worker smoking or vehicle sparking. Vegetation in disturbed areas is limited to weedy species that are not contiguous with the grasslands surrounding the WTP. Furthermore, the WTP facility contains fire suppression equipment because of the presence of chemicals and other equipment on site. Project operation would be substantially similar to existing operations and would not increase the risk of wildland fires. Impacts would be less than significant.

3.9 HYDROLOGY AND WATER QUALITY

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

a) Violate any water quality standards or waste discharge requirements?

Less-than-significant impact. Construction activities would occur in already disturbed areas of the of the WTP facility and grading activities would disturb less than 0.5 acre. However, the construction activities may increase runoff that has the potential to violate water quality standards. The project is located inland and there are no bodies of water directly adjacent to the site. As discussed in Section 3.6, "Geology and Soils," criterion (b), an erosion control plan would be required to prevent erosion during construction and post-

construction, In addition, as discussed in Section 3.8, Hazards and Hazardous Materials," criteria (a) and (b), construction and operation of the project would adhere to applicable laws, regulations, and protocols related to proper handling of hazardous materials. Compliance with these regulations would ensure that the project construction and operation activities would not violate water quality standards or waste discharge requirements set forth by the San Francisco Regional Water Quality Control Board. Impacts would be less than significant.

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 that would not support existing land uses or planned uses for which permits have been granted)?

No impact. The existing WTP facility receives raw water for treatment from the Sacramento-San Joaquin River and the Putah South Canal (City of Benicia 2016:2-8). The city of Benicia does not use groundwater as a source of potable water supply and has no plans to use groundwater in the future (City of Benicia 2016:3-18). Construction activities, such as watering, would not use groundwater. Construction activities would occur in already disturbed areas and would not interfere with groundwater recharge because the project would not involve placement of new imperviable surfaces across a large area (i.e., less than 0.5 acre). No impact would occur.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial on- or offsite erosion or siltation?

Less-than-significant impact. Construction activities associated with the project would occur within already disturbed and leveled areas of the WTP facility. Excavated areas be backfilled to original contours consistent with the most recent CBC requirements. The new secondary containment structure would maintain the existing drainage patterns on site and would not result in additional erosion or siltation. Impacts would be less than significant.

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 on- or offsite flooding?

Less-than-significant impact. During construction activities, water may be used to control dust. However, water use would be sufficient to abate dust (e.g., light wetting of the soil) and would not be used in great enough quantities to result in increased runoff. Construction activities associated with the project would occur within already disturbed and leveled areas of the WTP facility. Excavated areas would be backfilled to original contours. The new secondary containment structure would maintain the existing drainage patterns on-site and would not result in flooding. Impacts would be less than significant.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less-than-significant impact. The project area is primarily comprised of impermeable surfaces and non-natural surfaces (e.g., gravel) and stormwater runoff flows into nearby constructed drainage facilities. All work would occur within already leveled areas and would maintain general stormwater drainage patterns. The project would not exceed the capacity of existing stormwater drainage because minimal new impervious surfaces would be constructed. As discussed in criterion (d), the project would not contribute or create substantial amounts of runoff. Further, existing stormwater drainage systems would be sufficiently sized to handle flows from the site. The likelihood of polluted runoff is minimal because as discussed in Section 3.8, "Hazards and Hazardous Materials," criteria (a) and (b), construction and operation of the project would adhere to applicable laws, regulations, and protocols related to worker, user, and public safety. Impacts would be less than significant.

f) Otherwise substantially degrade water quality?

No impact. The project would not substantially degrade water quality in any way other than those previously discussed in criteria (a) through (e), above. No impact would occur.

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?

No impact. The project area is not located within a 100-year flood hazard area and does not include construction of housing. No impact would occur.

h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?

No impact. The project area is not located within a 100-year flood hazard area (City of Benicia 1999:150). No impact would occur.

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?

No impact. The project area is not located within an dam inundation area nor is it located within a levee flood zone (Solano County 2008:HS-13 and HS-17). Accordingly, the project would not expose people or structures to a significant risk of loss, injury or death involving flooding as a result of the failure of a levee or dam. No impact would occur.

j) Result in inundation by seiche, tsunami, or mudflow?

No impact. The project area is not located within a coastal region subject to tsunami, in an area with steep slopes that is subject to mudflows, or adjacent to a waterbody that would generate a seiche (Solano County 2008:HS-29). No impact would occur.

3.10 LAND USE AND PLANNING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. Land Use and Planning. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

a) Physically divide an established community?

No impact. Project construction would occur within the existing footprint of the WTP facility and would not obstruct access to or divide an established community. No impact would occur.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No impact. The existing WTP facility is a permitted use per the Public and Quasi-Public land use designation and Public and Semi-Public zoning district. The project would involve construction of a new hypochlorite system within the existing WTP site and would not change the use on the site. There are no other relevant policies in the *City of Benicia General Plan* related to avoiding or mitigating an environmental effect. Therefore, the project would not conflict with applicable land use plans, policies, or regulations. No impact would occur.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No impact. The project area is within the plan area of the proposed Solano Habitat Conservation Plan (Solano HCP). The Solano HCP has not been adopted as of the date of this document. There is no adopted HCP in effect in the project area, and there would be no impact related to conflicts with such plans.

3.11 MINERAL RESOURCES

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

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?

No impact. There are no known mineral resources on the project area that would be of value to the region and residents of the state (City of Benicia 1999:139). Therefore, the project would have no impact on availability of mineral resources.

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?

No impact. There are no mineral resource recovery sites identified in the *City of Benicia General Plan* within 1 mile of the project area (City of Benicia 1999: 139). Therefore, the project would have no impact on availability of mineral resources.

3.12 NOISE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. Noise. Would the project 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 in other applicable local, state, or federal standards?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Noise is typically expressed in decibels (dB), which is a common measurement of sound energy developed to relate to the range of human hearing. A decibel is logarithmic; it does not follow normal algebraic methods and cannot be directly summed. For example, a 65-dB source of sound, such as a truck, when joined by another 65-dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB rather than doubling the sound pressure).

Other useful acoustic terms include:

- **Equivalent Noise Level (L_{eq}):** The average noise level during a specified time period; that is, the equivalent steady-state noise level in a stated period of time that would contain the same acoustic energy as the time-varying noise level during the same period (i.e., average noise level).
- **Maximum Noise Level (L_{max}):** The highest instantaneous noise level during a specified time period.
- **Day-Night Noise Level (L_{dn}):** The 24-hour L_{eq} with a 10-dB penalty applied during the noise-sensitive hours from 10 p.m. to 7 a.m., which are typically reserved for sleeping.

As sound travels through the atmosphere from the source to the receiver, noise levels attenuate (i.e., decrease) depending on ground absorption characteristics, atmospheric conditions, and the presence of physical barriers. In typical noisy environments, changes in noise of 1 to 2 dB are generally not perceptible. However, it is widely accepted that people can begin to detect sound level increases of 3 dB in typical noisy

environments. Further, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness.

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?

Less-than-significant impact. The City of Benicia's General Plan Noise Element (1999) contains performance standards for noise sensitive uses, including compatibility of proposed noise-sensitive land uses with transportation noise sources and stationary noise sources. The performance standards also apply to new developments that include a stationary noise source that may affect an existing noise-sensitive development. These standards are not applicable to the project because the project would not affect an existing noise-sensitive development or introduce a new noise-sensitive use (City of Benicia 1999).

Chapter 8.20 of the Benicia Municipal Code (BMC) contains the following noise regulations that are applicable to the project:

- **Section 8.20.140 Machinery, equipment, fans, and air conditioning**. It is unlawful for any person to operate any machinery, equipment, pump, fan, air conditioning apparatus, or similar mechanical device in any manner so as to create any noise which would cause the noise level at the property line of any property to exceed the maximum allowable noise level in BMC 8.20.190 [reproduced as in Table 3.12-1 below] by more than three decibels.

Table 3.12-1 Maximum Allowed Sound Levels (dB) By Time of Day and Geographic Area and Land Use

Noise Zone	7 a.m. – 8 p.m.	8 p.m. – 10 p.m.	10 p.m. – 7 a.m.
Residential	60	55	50
Area Within One Block of First Street	60	55	55
Commercial (all) and First Street	65	60	60
Industrial	75	75	75

- **Section 8.20.150 Construction of buildings and projects**. It is unlawful for any person within: A.) a residential zone; B.) a district within the downtown mixed use master plan; or C.) a radius of 500 feet from a residential zone or downtown mixed use district; to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any heavy construction equipment (e.g., pile driver, power shovel, pneumatic hammer, derrick, power hoist) before 7:00 a.m. or after 7:00 p.m. on Monday through Friday, or before 8:00 a.m. or after 7:00 p.m. on Saturdays, or anytime on Sundays, in such a manner that a reasonable person of normal sensitiveness residing in the area is caused discomfort or annoyance unless beforehand a permit therefor has been duly obtained from the city manager or their designee. Grading permits issued pursuant to Chapter 15.28 BMC shall be subject to these provisions for work within 500 feet of a residential zone or downtown mixed-use district. No permit shall be required to perform emergency work as defined in BMC 8.20.020.

Project construction and operation would generate noise that is subject to the BMC. Noise- and vibration-sensitive land uses are generally considered to include those uses for which noise exposure could result in health-related risks to individuals, as well as uses for which quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, historic sites, cemeteries, and recreation areas are also considered sensitive to increases in exterior noise levels. Schools, health care facilities, places of worship, hotels, libraries, and other places where low interior noise levels are essential are also considered noise- and vibration-sensitive land uses. The WTP is in a rural area surrounded largely by open space and industrial uses. The nearest noise-sensitive receptors are single-family residences located over 3,000 feet to the west of the WTP on Smith Court.

Construction

As discussed above, Section 8.20.150 of the BMC, which places time and distance restrictions on construction noise, would not apply to the project because construction activities would take place more than 3,000 feet from the nearest residential zone or downtown mixed-use district, and because construction hours would be limited to 7 a.m. to 5 p.m. on weekdays. As a result, project construction would not conflict with the BMC.

Operation

During the operational phase, project maintenance would be comparable to maintenance of the existing WTP with a few exceptions. Relevant to Section 8.20.140 of the BMC, which regulates noise from pumps, a new 1-horsepower recirculation pump operating approximately 12 hours per month would be added. Pumps would be housed within structures, which would provide further noise buffering. The maximum allowable noise levels for pumps at residential receptors may not exceed 53 dB from 10 p.m. to 7 a.m., 58 dB from 8 p.m. to 10 p.m., and 63 dB from 7 a.m. to 8 p.m. Pumps conservatively generate a noise level of 77 L_{max} at 50 feet (Caltrans 2013), which would attenuate to 41.4 dB L_{max} at the nearest sensitive receptor. This noise level would be below that allows by the BMC. Therefore, the project would not conflict with the BMC. This impact would be less than significant.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less-than-significant impact. Vibration is the periodic oscillation of a medium or object with respect to a given reference point. Sources of vibration include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or transient in nature, such as explosions.

The typical background vibration-velocity level in residential areas such as the project area is approximately 50 vibration decibels (VdB). Typical outdoor sources of perceptible ground vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground vibration is rarely perceptible. Constant or transient vibrations can weaken structures, crack facades, and disturb occupants (FTA 2006).

Construction

Construction-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment, such as dozers and trucks. The source of the highest level of vibration during project construction would be from loaded haul trucks used for material delivery and soil import or export. According to the Federal Transit Administration (FTA), vibration levels associated with loaded haul trucks are 0.076 in/sec PPV and 86 VdB at 25 feet (FTA 2006). Based on FTA's recommended procedure for applying a propagation adjustment to vibration reference levels, vibration levels from loaded haul trucks would exceed the Caltrans recommended level of 0.2 in/sec PPV with respect to structural damage within 14 feet and would exceed FTA's maximum acceptable level of 80 VdB with respect to human response within 40 feet (See Appendix C). Given that the nearest sensitive receptors are more than 3,000 feet away, vibration levels would be imperceptible at sensitive receptors. Impacts would be less than significant.

Operation

The project would not result in the long-term operation of a stationary source of ground vibration (i.e., train or highway). Four times per year, three high-pressurized containers in the ion exchange softening system would be removed and replaced with new tanks, resulting in 8 additional one-way truck trips per year. Trucks would generate vibration. For the same reasons described for "Construction" above, these loaded haul trucks would not generate excessive levels of groundborne vibration. Impacts would be less than significant.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less-than-significant impact. As discussed in criterion (a), the 8 additional one-way truck trips per year and new 1-horsepower recirculation pump operating approximately 12 hours per month would be new minor noise sources, which would attenuate to levels that would be imperceptible to the nearest sensitive receptor, more than 3,000 feet away. The project would not result in an appreciable difference in operational noise at or within the vicinity of the WTP. Therefore, impacts would be less than significant.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less-than-significant impact. Construction equipment and activities would generate noise. Short-term construction noise would fluctuate depending on the type, number, and duration of usage of the construction equipment. Noise-intensive construction activities include minor site preparation, tank removal, demolition of the concrete chemical storage tank, trenching, and tank installation. The most noise-intensive construction activity would be trenching in paved areas, as the concrete saw is the loudest single piece of equipment. It is conservatively assumed that trenching in paved areas could involve the simultaneous use of a concrete saw, tractor, and water truck for dust control.

The existing noise environment within the project area is influenced primarily by transportation noise from local roadways such as Lake Herman Road, Reservoir Road and from Interstate 680. Community noise survey results indicate that typical noise levels in noise sensitive areas of the City of Benicia range from 51 dB to 63 dB L_{dn} (City of Benicia 1999). Based on the noise reference levels from Caltran's *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (2013) and accounting for typical usage factors of individual pieces of equipment along with typical attenuation rates, construction noise levels for trenching in paved areas were calculated to be 91.8 dB L_{max} at 50 feet (see Appendix C for detailed calculations). These noise levels would attenuate to 56.2 dB L_{max} at 3,000 feet. Given that this would be within the range of typical noise levels in noise-sensitive areas of the City of Benicia (51 dB to 63 dB L_{dn}), noise from the project would not cause an appreciable increase in noise levels at the nearest sensitive receptor. Therefore, impacts would be less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No impact. The nearest airport to the project area is Buchanan Field in Concord, located about 8 miles southeast of the project area. The project is not located in an airport land use plan or within 2 miles of a public airport or public use airport. No impact would occur.

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?

No impact. There are no private airstrips located within 5 miles of the WTP. No impact would occur.

3.13 POPULATION AND HOUSING

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

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)?

No impact. A maximum of 8 construction crew members would be on-site at any one time during the 9-month construction period. Construction of the project would not occur for a long enough period to induce worker relocation to the area. Operation of the project would not require new employees. The project would not increase capacity at the WTP and, therefore, would not indirectly induce population growth. No impact would occur.

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

No impact. The project would involve addition of infrastructure at the WTP site and would not require displacement of existing homes. Therefore, construction of replacement housing would not be required, and no impact would occur.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No impact. The project would involve addition of infrastructure at the WTP site and would not displace people. Therefore, construction of replacement housing would not be required, and no impact would occur.

3.14 PUBLIC SERVICES

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

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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 fire protection, police protection, schools, parks, or other public facilities?

No impact. Construction of the project may temporarily increase the potential need for police and fire protection services due to general hazards associated with construction (e.g., fire ignition, materials theft, injury). However, only up to 8 construction workers would be on site at any given time during a maximum 9-month construction period, reducing the potential for accidents. Construction activities would occur within the existing WTP site and would be protected by existing security measures at the site. As described in Section 3.13, criterion (a), population growth would not occur as part of the project. Therefore, no additional police protection facilities, fire protection facilities, schools, parks, or other public facilities would be required. No impact would occur.

3.15 RECREATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. Recreation. Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No impact. Construction and operation of the project would not increase the population in the project vicinity, as discussed in Section 3.13, criterion (a). Therefore, project implementation would not introduce new recreational users in the project vicinity, and the project would not increase use of existing parks or recreational facilities. There would be no impact.

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

No impact. The project does not include or require the construction of new recreational facilities. There would be no impact.

3.16 TRANSPORTATION/TRAFFIC

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. Transportation/Traffic. Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less-than-significant impact. There would be a slight increase in traffic during construction and operation of the project.

Construction

There would be a temporary increase in traffic due to construction. The project would generate trips due to materials deliveries, hauling away demolished/removed materials, and construction worker commutes. Project construction is anticipated to begin in January 2019 and would take 9 months to complete. Construction would occur 5 days per week, generally from 7 a.m. to 5 p.m. Access to the project area would be from Lake Herman Road and Water Way. No new temporary or permanent access roads would be constructed, and public roadway lane closures would not be required.

The number of workers would vary during the construction period; however, there could be up to 8 workers commuting daily to the project area during the construction period, resulting in up to 16 daily one-way worker commute trips. Haul truck trips would be associated with equipment delivery, excavation and fill activities, and removal of demolition materials. At peak construction, it is estimated that approximately 40 truck roundtrips per day would be needed for import and export of materials. As shown in Table 3.16-1, it is estimated that up to approximately 96 daily one-way trips would be added to area roadways, with commute trips generally clustered at the beginning and end of the day as workers arrive and depart the site. Delivery and haul trips may be distributed throughout the day. Most vehicles would travel down water way to Lake Herman Road and then to Interstate 680.

Table 3.16-1 Construction-related Trips

Trip Type	Daily Roundtrips	Daily One-way Trips
Commute trips	8	16
Haul trips	40	80
	Total Daily One-way Trips	96

Source: Compiled by Ascent Environmental in 2018.

Pursuant to the City of Benicia General Plan Policy 2.20.1, Lake Herman Road and Water Way should meet Level of Service (LOS) D to provide an adequate LOS. While construction traffic could temporarily increase the number of vehicles along Lake Herman Road and Water Way, the project would not noticeably change the existing LOS. Thus, the project would result in minor short-term construction related increases to vehicle traffic but would not result in an exceedance of established LOS thresholds. The construction impact would be less than significant.

Operation

Once constructed, approximately 8 additional one-way truck trips per year would be required to remove and replace the ion exchange containers. Therefore, operation of the project would not noticeably change the existing LOS on Lake Herman Road and Water Way or meaningfully increase VMT. Impacts would be less than significant.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less-than-significant impact. The Solano County Congestion Management Plan (CMP) does not identify any intersections or roadways that would be used to access the project area during construction or operation. However, project construction and operation would increase vehicle trips along Interstate 680, a CMP interstate. As discussed in criterion (a), construction traffic would be short-term and would not noticeably change traffic volumes. Once the project is completed, approximately 8 additional one-way truck trips per year would be required, which also would not noticeably change traffic volume on Interstate 680. Therefore, the project would not conflict with an applicable congestion management program and the impact would be less than significant.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No impact. The nearest airport to the project area is Buchanan Field, located about 8 miles southeast of the site. The project does not include tall structures or the use of airplanes or helicopters. The project would not result in a change in air traffic patterns. There would be no impact.

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

No impact. Proposed changes would occur within the existing footprint of the WTP facility and no changes to the surrounding roadway system are proposed. The project does not involve an incompatible use of roadways. Therefore, the project would have no impact related to hazards due to a design feature or incompatible uses.

e) Result in inadequate emergency access?

No impact. Construction of the project would not necessitate lane closures or obstruct access to the project area. Operation activities would not result in the reconfiguration of existing roads of the construction of new roads. All existing emergency access ingress and egress points would remain unchanged, and adequate emergency access would be maintained during construction and operation. There would be no impact.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

No impact. There are no existing public transit, bicycle, or pedestrian facilities along Lake Herman Road near the project area or along Water Way, which provides access to the WTP. Project construction and operation would not result in the removal of, or need for, alternative transportation facilities such as bus turnouts or bicycle racks. Therefore, the project would not conflict with adopted policies, plans, or programs supporting alternative transportation. There would be no impact.

3.17 TRIBAL CULTURAL RESOURCES

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

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

and

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Less-than-significant impact with mitigation. The project area is located within the lands historically occupied by the Patwin; however, the site is not known to have any special tribal use. In response to prior requests for consultation, the City of Benicia contacted the Yocha Dehe Wintun Nation, the United Auburn Indian Community, and the Ione Band of Miwok Indians on November 29, 2018 via certified mail. The Yocha Dehe Wintun Nation responded on December 17, 2018. The Tribe indicated that the project is within its aboriginal territory and requested consultation for this project, indicating the project could affect known cultural resources. No response was received from the United Auburn Indian Community or the Ione Band of Miwok Indians. The project area is highly disturbed, and no pre-historic archaeological resources have been identified on the project area based on a query of the California Historic Resources Information System (see Section 3.5, Cultural Resources). For these reasons, no areas within the project area meet any of the PRC 5024.1(c) criteria listed above. However, there is a potential for disturbance of previously unknown tribal cultural resources during excavation activities. Damage to an unknown tribal cultural resource would be a

potentially significant impact. Implementation of the following mitigation measure would reduce the project's impacts to a less-than-significant level.

Mitigation Measure Cult-1: Inadvertent Discovery of Historical and Archaeological Resources Protocol

If any prehistoric or historic-era subsurface archaeological features or deposits are discovered during construction, all ground disturbing activities shall be stopped, and a qualified professional archaeologist shall be retained to assess the significance of the find. If the find is determined to be significant by the qualified archaeologist (i.e., because it is determined to constitute either a historical resource or a unique archaeological resource), the archaeologist shall develop appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected. Procedures could include but would not necessarily be limited to preservation in place, archival research, subsurface testing, or contiguous bock unit excavation and data recovery. If a prehistoric archaeological feature is discovered, the City shall notify the Yocha Dehe Wintun Nation. The archaeologist shall consider input from the Yocha Dehe Wintun Nation when determining the significance of the find and when developing protective procedures.

Significance after Mitigation

Implementation of Mitigation Measure Cult-1 would reduce impacts associated with tribal cultural resources to a less-than-significant level because the measures would require the implementation of professionally accepted procedures for the discovery of previously undocumented archaeological resources, including those that may be tribal cultural resources.

3.18 UTILITIES AND SERVICE SYSTEMS

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII.	**Utilities and Service Systems. Would the project:**				
a)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☒	☐	☐
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e)	Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	☐	☐	☐	☒
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g)	Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No impact. Project construction activities would generate a minimal amount of wastewater from the use of on-site portable toilets or toilets within the existing facilities for construction workers. Project operation would not generate additional wastewater. Wastewater generated during project construction would be disposed of in accordance with all regulatory requirements. There would be no impact.

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?

The project involves construction of two chemical storage tanks and accessory structures to switch the primary disinfectant used to treat water at the existing WTP facility. The project would not expand treatment capabilities at the WTP facility and would not necessitate construction of additional infrastructure outside of that described in this Initial Study. The impacts of the project are discussed throughout this Initial Study.

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?

No impact. The project area is primarily comprised of impermeable surfaces and otherwise non-natural surfaces (e.g., gravel) and stormwater runoff flows into nearby constructed drainage facilities. All work would occur within already leveled areas and would maintain general stormwater drainage patterns. The project would not result in alterations to drainage on site that would require construction of new drainage facilities. There would be no impact.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Lees-than-significant impact. Project construction activities would require the use of water during watering activities for dust abatement; however, the need would be temporary. Very conservatively, the project would use up to one water truck (500 gallons) per day. According to the City of Benicia Urban Water Management Plan, supply is anticipated to exceed demand under average waters years, single-dry years, and multiple-dry years in 2020: the surplus in multiple dry years is projected to be 1.8 million gallons per day (City of Benicia 2016:7-1 to 7-4). Therefore, existing water supplies are sufficient to accommodate the amount of water needed during construction activities. Project operation would not result in an increase of existing water use and the project would not require new or expanded water entitlements. The impact would be less than significant.

e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?

No impact. As discussed in criterion (a), wastewater generated by the project would be temporary, minimal, and limited to use of toilets during construction. Existing facilities would be sufficient to treat the negligible increase in wastewater treatment demand. The ion exchange containers would be hauled off-site for disposal and would not necessitate treatment by existing wastewater facilities. Therefore, no impact related to the capacity of existing wastewater treatment systems would occur.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less-than-significant impact. Project construction activities would generate a minimal amount of solid waste from demolition of some of the existing facilities, and proposed improvements would not increase the amount of waste currently produced by the WTP facility. Project operation would necessitate removal of the ion exchange containers approximately four times per year. Solid waste generated by the project would be conveyed to the Keller Canyon Landfill which has a remaining capacity of 63 million cubic yards (CalRecycle 2018). Therefore, the landfill has adequate capacity to accommodate waste produced during project construction and operation. Impacts would be less than significant.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

No impact. The project would comply with federal, state, and locate statutes and regulations related to solid waste. Therefore, no impacts from construction and operation of the project would occur.

3.19 MANDATORY FINDINGS OF SIGNIFICANCE

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

Authority: Public Resources Code Sections 21083, 21083.5.

Reference: Government Code Sections 65088.4.
Public Resources Code Sections 21080, 21083.5, 21095; *Eureka Citizens for Responsible Govt. v. City of Eureka* (2007) 147 Cal.App.4th 357; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th at 1109; *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?

Less-than-significant impact with mitigation incorporated. As discussed in Section 3.4, "Biological Resources," the project would not result in any significant impacts that would substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal species. The only potentially significant impact that could occur to biological resources in the project area would be disturbance to nesting migratory birds within landscape trees on and adjacent to the project area. This potentially significant impact would be reduced to a less–than-significant level with implementation of Mitigation Measure Bio-1, which requires pre-construction nesting bird surveys and, in the case that an active nest is located, appropriate buffers to avoid nest abandonment. Therefore, the project would not substantially degrade the environment or reduce the habitat for fish and wildlife species and would not decrease populations or eliminate endangered, rare, or threatened species. Biological resources impacts would be less than significant with mitigation.

As discussed in Section 3.5, "Cultural Resources," the project would not result in any significant impacts that would eliminate important examples of the major periods of California history of prehistory. The WTP facility is not identified as a historical resource and proposed construction activities would occur in previously disturbed areas. A cultural resources literature review conducted on December 5, 2018 by the NWIC determined that no architectural or archaeological resources are located within the project area. However, the potential exists that unidentified archaeological resources could be discovered during construction. This potentially significant impact would be reduced to a less-than-significant level with implementation of Mitigation Measure Cult-1, which requires the retention of a qualified professional archaeologist to assess any prehistoric or historic-era subsurface archaeological features or deposits discovered during construction. If the find is determined to be significant by the qualified archaeologist, appropriate procedures shall be developed to protect the integrity of the resource and ensure that no additional resources are affected. Therefore, the project would not result in any significant impacts that would eliminate important examples of the major periods of California history of prehistory. Cultural resources impacts would be less than significant with mitigation.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less-than-significant impact with mitigation incorporated. As described throughout the analysis above, the project would not result in any significant individual impact or cumulative impacts that would not be mitigated to a less-than-significant level. It has been determined that the project would not have an impact on the following resources; therefore, the project would not contribute to a cumulative impact on these resources:

- Agriculture and Forestry
- Land Use
- Mineral Resources
- Population and Housing
- Public Services
- Recreation

A cumulative impacts analysis is provided for the remainder of resources:

- **Aesthetics:** The geographic scope of the cumulative aesthetics analysis is relatively small because the WTP is visible from very limited areas. Furthermore, the visible changes at the WTP would be consistent with the WTP and contained within the existing site. The project would not have a cumulative contribution such that a new significant cumulative aesthetics impact would occur.

- **Air Quality:** As described in criterion (c) in Section 3.3, Air Quality, BAAQMD's significance thresholds are used to determine if air quality impacts would be significant. The discussion under criterion (c) supports a conclusion that the project would not have a cumulatively considerable contribution to a significant cumulative impact.

- **Biological Resources:** The project on its own could have a significant impact on nesting birds, indicating it could also make a cumulatively considerable contribution to a significant cumulative impact to nesting birds in the area. However, Mitigation Measure Bio-1 would ensure nesting birds are not disturbed so that nest failure does not occur. As a result, the project's contribution to a significant cumulative impact would not be cumulatively considerable.

- **Cultural Resources and Tribal Cultural Resources:** The project has the potential to impact unknown burials and previously undiscovered cultural and paleontological resources. The project on its own could have a significant impact on undiscovered resources. However, Mitigation Measures Cult-1 and Cult-2 would ensure proper treatment of undiscovered resources. Additionally, this impact is extremely localized and

would not combine with impacts from any other projects. As a result, no significant cumulative impacts would occur.

- **Geology and Soils:** The project has the potential to increase erosion and certain seismic hazards. However, this impact would be localized to the WTP site and the immediately adjacent area and would not combine with impacts from any other projects. As a result, the project would not have a considerable contribution such that a new significant cumulative impact would occur.

- **Greenhouse Gases and Energy:** CEQA Guidelines section 15064(h)(3) states that "[a] lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program (including, but not limited to . . . regulations for the reduction of greenhouse gas emissions) that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located." compliance with state-level policies is used to assess cumulative impacts, given that a substantial amount of greenhouse gas reduction programs and policies are undertaken or spearheaded at the state level. As discussed in criterion (b) of Section 3.7, Greenhouse Gas Emissions and Energy, the project would not conflict with federal or state regulations adopted for the purpose of reducing GHG emissions. The project's energy use would not be wasteful and would not constitute an ongoing additional wasteful energy use. Therefore, the project would not have a cumulatively considerable contribution to a significant cumulative greenhouse gas or energy impact.

- **Hazards and Hazardous Materials:** The project would involve the use of typical hazardous materials during construction and would involve hypochlorite transportation and use during operation. Project activities would be conducted in compliance with all regulations, and it is assumed that other projects nearby utilizing such materials would comply with all applicable hazardous material use and transit regulations. As a result, the project would not have a considerable contribution such that a new significant cumulative impact would occur.

- **Hydrology and Water Quality:** The project has the potential to increase sedimentation and surface water contamination. However, this impact would be localized to the WTP site and the immediately adjacent area and would not combine with impacts from any other projects. As a result, the project would not have a considerable contribution such that a new significant cumulative impact would occur.

- **Noise and Vibration:** The project would generate noise and vibration, but the noise and vibration would not be perceptible at the nearest sensitive receptors. Therefore, noise and vibration from the project would not combine with noise or vibration from any other nearby projects. As a result, the project would not have a considerable contribution such that a new significant cumulative impact would occur.

- **Transportation and Traffic:** The project would generate some minimal traffic on area roadways and highways, and the increase in volume would not have a perceptible impact on LOS or VMT. Most trips would occur during construction and would have only a short-term impact on LOS. As a result, the project would not have a considerable contribution such that a new significant cumulative impact would occur.

- **Utilities:** The project would generate some solid waste that would be disposed of at a landfill. As discussed in criterion (f) in Section 3.18, Utilities and Service Systems, there is substantial space remaining in the nearby landfill. Furthermore, waste from the project would be a temporary addition to the waste stream and would not accelerate disposal at the landfill over the long term. Wastewater generated by the project would be temporary, minimal, and limited to use of toilets during construction. Existing facilities would be sufficient to treat the negligible increase in wastewater treatment demand. As a result, the project would not have a considerable contribution such that a new significant cumulative impact would occur.

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

Less-than-significant impact with mitigation incorporated. As identified in this Initial Study, all potentially significant impacts associated with the project would be reduced to a less-than-significant level with mitigation. Therefore, the project would not result in substantial adverse effects on human beings, either directly or indirectly. The impact would be less than significant with mitigation.

This page intentionally left blank.

4 REFERENCES

3.1 Aesthetics

City of Benicia. 1999. *Benicia General Plan*. Adopted June 15, 1999. Benicia, CA.

California Department of Transportation. 2018. California Scenic Highway Mapping System. Solano County. Available: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/. Accessed November 14, 2018.

3.2 Agriculture and Forestry Resources

California Department of Forestry and Fire Protection. 2006. Land Cover. Scale 1:1,030,000.

California Department of Conservation. 2013. Solano County Williamson Act FY 2013/2014. Division of Land Resource Protection. Scale 1:100,000.

———. 2017. Solano County Important Farmland 2016. Division of Land Resource Protection. Scale 1:100,000.

CAL FIRE. See California Department of Forestry and Fire Protection.

DOC. See California Department of Conservation.

3.3 Air Quality

BAAQMD. *See* Bay Area Air Quality Management District.

Bay Area Air Quality Management District. 2016. *Solano County.* Available: http://www.baaqmd.gov/in-your-community/solano-county. Accessed July 3, 2018.

———. 2017a. *CEQA Air Quality Guidelines*.

———. 2017b. *Spare the Air. Cool the Climate. A Blueprint for Clean Air and Climate Protection in the Bay Area. Final 2017 Clean Air Plan*.

California Air Resources Board. 2005 (April). *Air Quality and Land Use Handbook: A Community Health Perspective*. Sacramento, CA. Available: https://www.arb.ca.gov/ch/handbook.pdf. Accessed July 3, 2018.

———. 2013. *California Almanac of Emissions and Air Quality—2013 Edition*. Available: http://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm. Accessed April 16, 2018.

———. 2017. *Air Quality Standards and Area Designations Maps*. Available: https://www.arb.ca.gov/desig/desig.htm. Accessed July 3, 2018.

CARB. *See* California Air Resources Board.

EPA. *See* U.S. Environmental Protection Agency.

OEHHA. *See* Office of Environmental Health Hazard Assessment.

Office of Environmental Health Hazard Assessment. 2015. *Air Toxics Hot Spots Program - Guidance Manual for Preparation of Health Risk Assessments, Risk Assessment Guidelines*.

U.S. Environmental Protection Agency. 2018. *Criteria Air Pollutants*. Available: https://www.epa.gov/criteria-air-pollutants#self. Last updated March 8, 2018. Accessed April 16, 2018.

3.4 Biological Resources

California Natural Diversity Database. 2018. Rarefind 5. Commercial Version dated July 1, 2018. An online subscription database application for the use of the California Department of Fish and Wildlife's natural diversity database. California Natural Heritage Division, California Department of Fish and Wildlife, Sacramento, CA. Accessed August 6, 2018.

CNDDB. *See* California Natural Diversity Database.

California Native Plant Society, Rare Plant Program. 2018. Inventory of Rare and Endangered Plants (online edition, v8-03 0.39). California Native Plant Society, Sacramento, CA. Website http://www.rareplants.cnps.org. Accessed August 6, 2018.

CNPS. *See* California Native Plant Society.

eBird. 2018. eBird: An online database of bird distribution and abundance [web application]. *eBird*, Ithaca, New York. Available: http://www.ebird.org. Accessed August 6, 2018.

3.6 Geology and Soils

California Department of Conservation. 2015a. CGS Information Warehouse: Regulatory Maps. Available: https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps. Accessed November 14, 2018.

———. 2015b. Fault Activity. Available: https://maps.conservation.ca.gov/cgs/fam/. Accessed November 14, 2018.

———. 2015c. Geologic Map of California. Available: https://maps.conservation.ca.gov/cgs/gmc/. Accessed November 14, 2018.

City of Benicia. 1999. *Benicia General Plan*. Adopted June 15, 1999. Benicia, CA.

Solano County. 2008. *General Plan*. Solano County.

3.7 Greenhouse Gas Emissions

BAAQMD. *See* Bay Area Air Quality Management District.

Bay Area Air Quality Management District. 2017. *CEQA Air Quality Guidelines*.

California Air Resources Board. 2017. *California's 2017 Climate Change Scoping Plan*. Available: https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm. Accessed April 17, 2018.

———. 2018. *Climate Pollutants Fall Below 1990 Levels for First Time.* Available: https://ww2.arb.ca.gov/news/climate-pollutants-fall-below-1990-levels-first-time. Accessed July 25, 2018.

California Department of Water Resources. 2006 (July). *Progress on Incorporating Climate Change into Management of California's Water Resources.* Available: http://www.water.ca.gov/climatechange/docs/DWRClimateChangeJuly06.pdf. Accessed April 17, 2018.

California Energy Commission and California Public Utilities Commission. 2008. *2008 Update Energy Action Plan*.

California Natural Resources Agency. 2012. *Our Changing Climate 2012, Vulnerability and Adaptation to the Increasing Risk from Climate Change in California.* Available: http://www.energy.ca.gov/2012publications/CEC-500-2012-007/CEC-500-2012-007.pdf. Accessed August 3, 2018.

CARB. *See* California Air Resources Board.

CEC and CPUC. *See* California Energy Commission and California Public Utilities Commission.

City of Benicia. 2009. *Benicia Climate Action Plan.* Available: https://www.ci.benicia.ca.us/sustainability. Accessed February 1, 2019.

CNRA. *See* California Natural Resources Agency.

DWR. *See* California Department of Water Resources.

Intergovernmental Panel on Climate Change. 2007 (February). *Climate Change 2007: The Physical Science Basis.* Contribution of Working Group I to the Fourth Assessment Report of the IPCC. Geneva, Switzerland.

IPCC. *See* Intergovernmental Panel on Climate Change.

3.8 Hazards and Hazardous Materials

Department of Toxic Substances Control. 2018a. EnviroStor Database. Available: https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=100+water+way+benicia+ca. Accessed December 16, 2018.

———. 2018b. Panoche Facility (80001291). Available: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80001291. Accessed December 6, 2018.

California Environmental Protection Agency. 2018. Hazardous Waste and Substances Site List (Cortese List). Available: https://www.envirostor.dtsc.ca.gov/public/search?cmd=search&reporttype=CORTESE&site_type=CSITES,OPEN,FUDS,CLOSE&status=ACT,BKLG,C...Accessed December 6, 2018.

Contra Costa County Airport Land Use Commission. 2000. *Contra Costa County Airport Land Use Compatibility Plan.* Adopted 13, 2000. Contra Costa County, CA.

California Department of Forestry and Fire Protection. 2007. Draft Fire Hazard Severity Zones in LRA. Scale 1:100,000.

DTSC. See Department of Toxic Substances Control.

CalEPA. See California Environmental Protection Agency.

CAL FIRE. See California Department of Forestry and Fire Protection.

Solano County Airport Land Use Commission. 2002. *Travis Air Force Base Land Use Compatibility Plan.* Available: https://www.solanocounty.com/depts/rm/boardscommissions/solano_county_airport_land_use_commission/documents.asp. Accessed January 31, 2019.

3.9 Hydrology and Water Quality

City of Benicia. 2008. *General Plan*. Solano County.

———. 1999. *Benicia General Plan*. Adopted June 15, 1999. Benicia, CA.

———. 2016. *2015 Urban Water Management Plan*. Adopted June 21, 2016. Benicia, CA.

3.10 Land Use and Planning

Solano County Water Agency. 2012. Solano Habitat Conservation Plan. Prepared by LSA. Solano County, CA.

3.11 Mineral Resources

City of Benicia. 1999. *Benicia General Plan*. Adopted June 15, 1999. Benicia, CA.

3.12 Noise

California Department of Transportation. 2013 (September). *Technical Noise Supplement*. Division of Environmental Analysis. Sacramento, CA. Prepared by ICF International.

Caltrans. *See* California Department of Transportation

City of Benicia. 1999. *Benicia General Plan: From 1847 Into the 21st Century.* Adopted June 15, 1999.

Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment*.

FTA. *See* Federal Transit Administration.

3.16 Transportation/Traffic

Solano County. 2015 (December). *Congestion Management Program*. Adopted January 13, 2016. Solano County, CA.

3.18 Utilities and Service Systems

California Department of Resources Recycling and Recovery. 2018. SWIS Facility Detail: Keller Canyon Landfill (07-AA-0032). Available: https://www2.calrecycle.ca.gov/swfacilities/Directory/07-AA-0032/. Accessed November 21, 2018.

City of Benicia. 2011. *Collection Service Agreement Executed between City of Benicia and Allied Waste Systems, Inc.* Benicia, CA.

———. 2016. *2015 Urban Water Management Plan*. Adopted June 21, 2016. Benicia, CA.

5 REPORT PREPARERS

CITY OF BENICIA (LEAD AGENCY)

Laura M. Pate, P.E.. ..... Project Manager – Utilities, Public Works Department

ASCENT ENVIRONMENTAL (IS PREPARATION)

Amanda Olekszulin ..... Principal-in-Charge/Project Director
Kristi Black, J.D. ..... Project Manager
Angie Xiong ..... Deputy Project Manager/AQ, GHG, and Noise Specialist
Alta Cunningham ..... Cultural Resources Specialist
Allison Fuller ..... Project Biologist
Claudia Garcia ..... Environmental Planner
Phi Ngo ..... GIS Specialist
Gayiety Lane ..... Publications
Michele Mattei ..... Publications
Corey Alling ..... Graphics
Brian Perry ..... Graphics

WEST YOST ASSOCIATES (PROJECT ENGINEER)

Lindsey Olson, P.E. ..... Project Manager
Timothy Banyai, P.E. ..... Project Engineer

This page intentionally left blank.