



Initial Study and Mitigated Negative Declaration

ETSU Phase 1 Program



**INITIAL STUDY AND
MITIGATED NEGATIVE DECLARATION**

ETSU PHASE 1 PROGRAM

March 2021

LEAD AGENCY:

Union Sanitary District
5072 Benson Road
Union City, CA 94587-2508
(510) 477-7608

PREPARED BY:

Scheidegger & Associates
P.O. Box 331
Danville, CA 94526
(925) 820-0704

WITH ASSISTANCE FROM:

Yorke Engineering, LLC (Air Quality and Greenhouse Gases)
WRA (Biology)
Archeo-Tech (Cultural Resources)
Charles M. Salter Associates (Noise)
Abrams Associates (Traffic)

TABLE OF CONTENTS

CHAPTER 1. Introduction and Project Description	1
1. Project Title	1
2. Lead Agency Name and Address	1
3. Contact Person and Phone Number	1
4. Project Location	1
5. Project Sponsor's Name and Address	1
6. General Plan Designation	1
7. Zoning	1
8. Introduction	1
SUMMARY OF EXISTING FACILITIES	3
Alvarado WWTP	3
Odor Control	3
Existing Effluent Disposal System	6
DEVELOPMENT OF THE ETSU PROGRAM	7
Goals and Approach	7
Challenges and Drivers	7
Secondary Treatment Process Performance	8
Effluent Management	8
Asset Management	9
Land Availability	9
9. Project Description	9
ETSU PROGRAM OVERVIEW	9
Program Phases	9
Design Flows and Loads	10
Old Alameda Creek Effluent Limitations	11
ETSU PHASE 1 PROGRAM IMPROVEMENTS	12
Phase 1A-Aeration Basin Improvements	14
Phase 1A – Campus Building	15

Phase 1B and 1C Facilities	18
Demolition	20
Structural and Geotechnical Design	20
Construction	21
Sitework and Truck Load Estimates	22
Operations	23
Staging Areas/Parking/Storage.....	25
Odor Control	25
Activated Carbon Process Description	26
Centralized Biofilter	26
Sea Level Rise	26
Schedule	26
Other WWTP Projects.....	28
Funding Sources and Environmental Review Approach.....	29
10. Surrounding Land Use	31
11. Other Approvals from Public Agencies	31
12. Consultation with Native American Tribes.....	33
13. Environmental Factors Potentially Affected.....	33
CHAPTER 2. DETERMINATION	34
CHAPTER 3. DISCUSSION OF ENVIRONMENTAL CHECKLIST	35
CHAPTER 4. CHECKLIST AND INFORMATION SOURCES.....	127
Appendix A. Construction Details of Phase 1 Projects	
Appendix B. Alvarado WWTP CIP Project Schedules FY2021 through FY2030	
Appendix C. Mitigation Monitoring and Reporting Plan	
Appendix D. Air Quality and Greenhouse Gas Emissions Technical Report	
Appendix E. Biological Resource Assessment for On-Site Biological Impacts	
Appendix F. Biological Resource Assessment for Off-Site Biological Impacts	
Appendix G. Phase 1 Cultural Resource Assessment for the ETSU Phase 1 Program	

- Appendix H. Noise and Vibration Technical Report
- Appendix I. Transportation Impact Analysis

TABLES

Table 1-1.	Current EBDA Effluent Limitations for Conventional and Non-Conventional Pollutants.....	6
Table 1-2.	ETSU Program Dry Weather and Peak Hour Design Flows.....	10
Table 1-3.	ETSU Program Design Loads with 15% Load Increase.....	11
Table 1-4.	Current Old Alameda Creek Effluent Limitations	11
Table 1-5.	Scope of the ETSU Phase 1 Program	12
Table 1-6.	Summary of Phase 1A-AB Improvements	14
Table 1-7.	Summary of Phase 1B and 1C Improvements	18
Table 1-8.	Summary of Excavation, Backfill, and Concrete Needs for ETSU Phase 1.....	22
Table 1-9.	Summary of Truck Generation for ETSU Phase 1	23
Table 3-1.	California and National Ambient Air Quality Standards and Summary of Measured Air Quality Exceedances in the Project Area (2017-2019)	43
Table 3-2.	Comparison of Maximum Construction Emissions (Phase 1A Aeration Basin and Campus Overlap) to BAAQMD Significance Thresholds for Nonattainment Pollutants.....	50
Table 3-3.	Comparison of Maximum Operations Emissions to BAAQMD Significance Thresholds for Nonattainment Pollutants.....	52
Table 3-4.	Maximum Annual GHG Emissions During Construction Period	82
Table 3-5.	Existing Directional Peak Hour Level of Service Conditions	114
Table 3-6.	Peak Period Construction Trip Generation	117
Table 3-7.	Existing Plus Program Average Daily Traffic (ADT) Level of Service Conditions ..	118
Table 3-8.	Existing Plus Program Directional Peak Hour Level of Service Conditions.....	118

Figures

Figure 1-1.	Regional Location of the Alvarado WWTP.....	2
Figure 1-2.	Existing Alvarado WWTP Site Plan	4
Figure 1-3.	Process Flow Diagram for the Alvarado WWTP	5
Figure 1-4.	ETSU Phase 1 Program Proposed Facilities	13

Figure 1-5.	Preliminary Site Plan for Campus Building with Cul-de-Sacs Acquired	16
Figure 1-6.	Truck Access to the WWTP	24
Figure 1-7.	ETSU Phase 1 Program Schedule	27
Figure 1-8.	Traffic Overview of ETSU Phase 1 Program with Other Major WWTP Projects	30
Figure 1-9.	Land Use Characteristics.....	32
Figure 3-1.	Shielding of the WWTP to the East	38
Figure 3-2.	Rendering of the New Campus Building.....	39
Figure 3-3.	Preliminary ETSU Phase 1 Program Schedule	50
Figure 3-4.	ETSU Phase 1 Program Archaeological Monitoring Plan.....	64
Figure 3-5.	Geology Map	71
Figure 3-6.	Liquefaction Susceptibility Map	73
Figure 3-7.	Areas of Contamination at the WWTP	91
Figure 3-8.	Noise-Sensitive Receptor Locations	102
Figure 3-9.	Average Daily Traffic Volumes for Existing Truck Route Segments.....	113

CHAPTER 1

INTRODUCTION AND PROJECT DESCRIPTION

- 1. Project Title:** Phase 1, Enhanced Treatment and Site Upgrade (ETSU) Program
- 2. Lead Agency Name and Address:** Union Sanitary District
5072 Benson Road
Union City, CA 94587-2508
- 3. Contact Person and Phone Number:** Ric Pipkin
(510) 477-7562
ricp@unionsanitary.ca.gov

Paul Scheidegger
Scheidegger & Associates
(925) 984-1553
pscheidegger00@comcast.net
- 4. Project Location:**

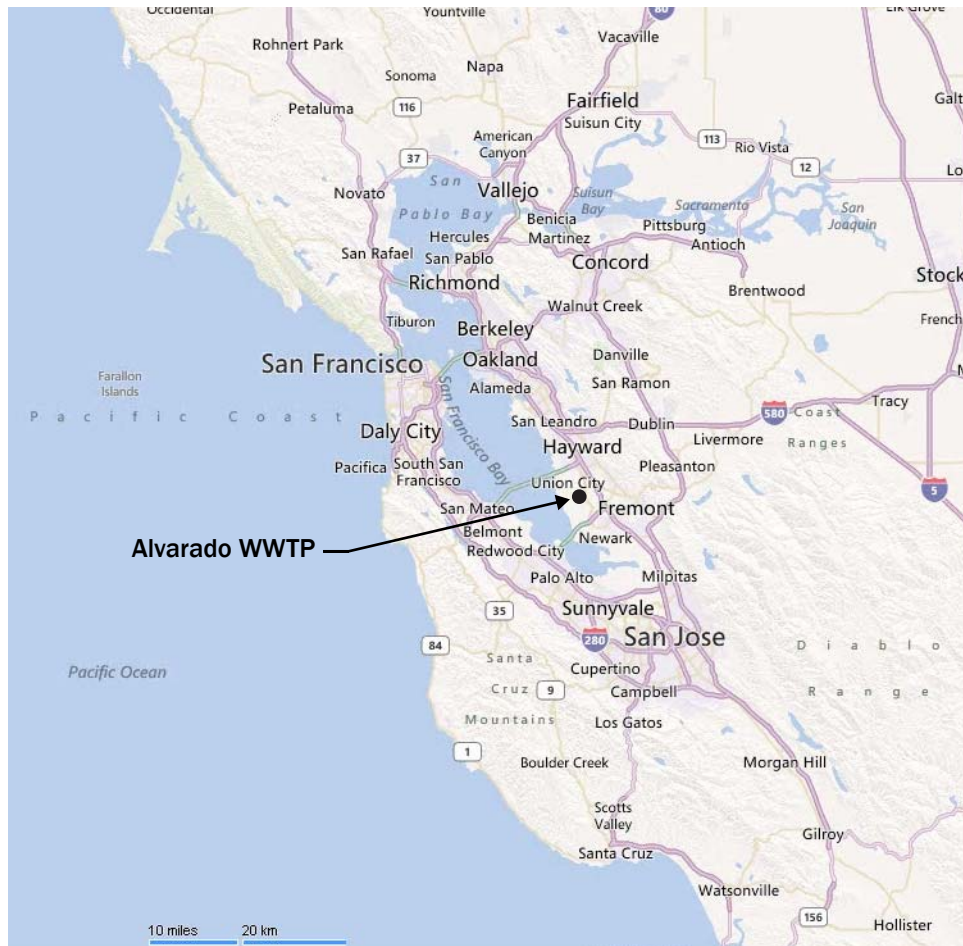
Figure 1-1 shows the location of the Alvarado Wastewater Treatment Plant (WWTP) where Phase 1 of the ETSU Program will be located. The WWTP is located within Union City in Alameda County, at 5072 Benson Road.

- 5. Project Sponsor's Name and Address:** Union Sanitary District
5072 Benson Road
Union City, CA 94587-2508
- 6. General Plan Designation:** Civic Facility¹
- 7. Zoning:** Civic Facility²
- 8. Introduction:**

An introduction to the Alvarado WWTP is provided in this section. This is followed by a discussion of the factors leading to development of Union Sanitary District's (USD) ETSU Program.

A great deal of information has been developed in support of the ETSU Program by USD and their engineering consultants. Reference sources utilized in the discussion in the following sections include the following:

- Enhanced Treatment and Site Upgrade Program Report, August 2019.³



Source: Microsoft, Bing Maps

Figure 1-1. Regional Location of the Alvarado WWTW

- Effluent Management Study, Appendix A to reference 3 above.⁴
- Report of Waste Discharge for Reissuance of NPDES Permit No. CA0038733.⁵
- USD ETSU Phase 1A-Aeration Basin Modifications Project, 30% Design Report.⁶
- San Francisco Bay Regional Water Quality Control Board (RWQCB) Order No. R2-2020-0077 National Pollutant Discharge Elimination System (NPDES) No. CA0038733 for USD Old Alameda Creek Intermittent Wet Weather Discharge, Adopted October 14, 2020.⁷

SUMMARY OF EXISTING FACILITIES

USD is a special services district that provides wastewater collection, treatment, and disposal services to residents and businesses within the cities of Fremont, Newark, and Union City in southern Alameda County. USD's wastewater collection system consists of three major pump stations and about 800 miles of pipelines ranging in size from 6 to 48 inches in diameter. All wastewater generated within the service area, including peak wet weather flows, receives full secondary treatment at the Alvarado WWTP and is then conveyed to the East Bay Discharger's Authority (EBDA) for discharge to San Francisco Bay via a common outfall, to the Hayward Marsh for replenishment of the marsh or to Old Alameda Creek outfall.

Alvarado WWTP

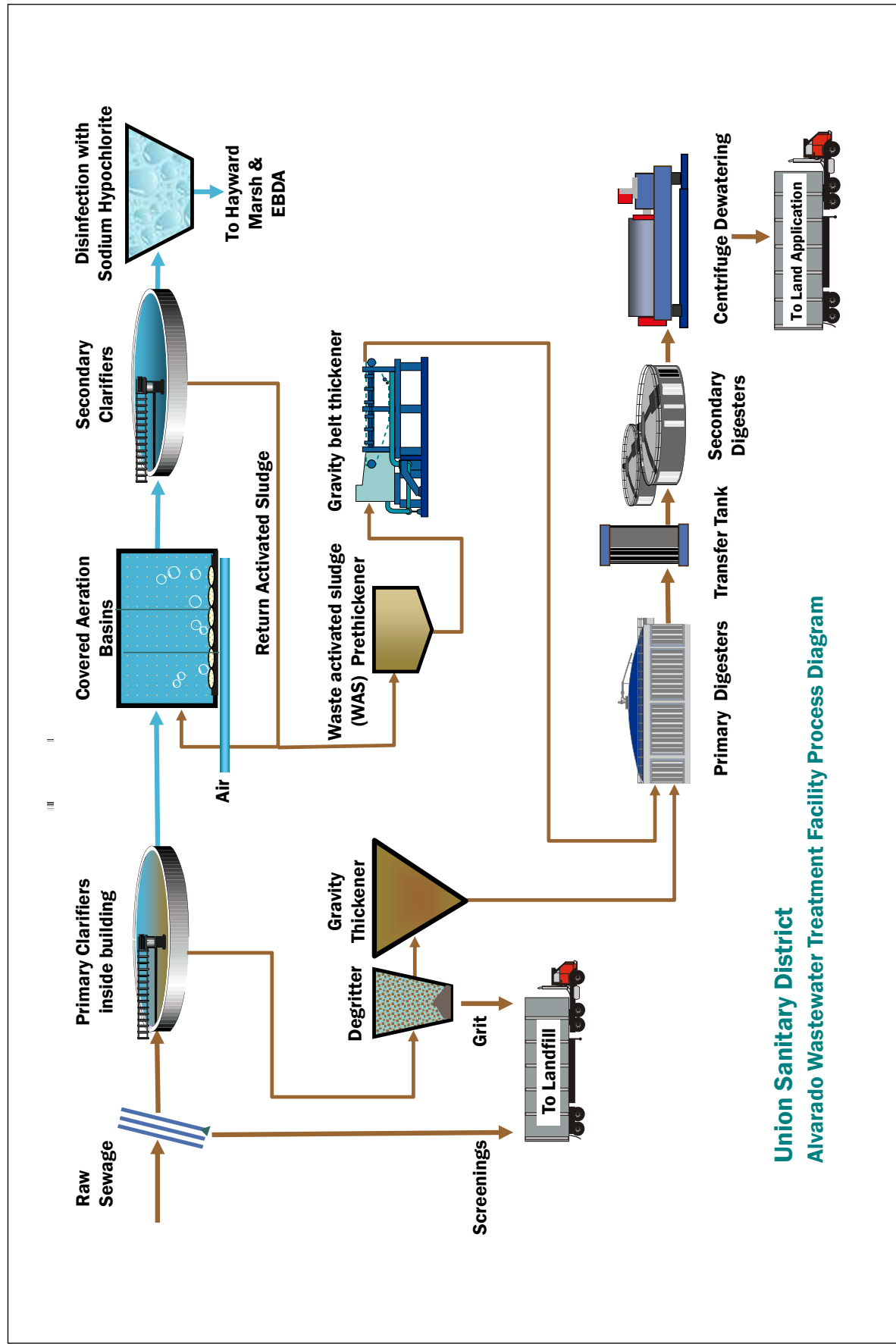
Figure 1-2 is an aerial of the existing Alvarado WWTP and Figure 1-3 shows a process flow diagram of the facility. Raw wastewater from the Irvington, Newark, and Alvarado pump stations combines in the headworks building where it is measured and screened and then distributed to six primary clarifiers. Primary effluent (PE) from these units is combined with return activated sludge (RAS) and the mixed liquor suspended solids (MLSS) and distributed to each of seven aeration basins (ABs) in the secondary treatment system. Flow from the ABs is combined and subsequently split for distribution to the six square secondary clarifiers. Finally, the secondary effluent is combined, disinfected in the chlorine contact tanks, passes through polishing screens, and is pumped via the EBDA pump station to the common outfall. Under some scenarios, flow is conveyed to the Hayward Marsh for discharge as part of an agreement with the East Bay Regional Park District (EBRPD). This discharge is being eliminated due to a change in priorities by the Park District. Additionally, during wet weather events, flow can be discharged to the adjacent Old Alameda Creek under the District's NPDES Permit CA0038733 (Order No. R2-2015-0045).

Odor Control

Currently at the WWTP, the odor control systems consist of variations of mist-type chemical scrubbers that were installed in the mid-1980s. There are 18 original scrubbers operating at various process areas throughout the plant. Two of the



Source: USD, October 2020



Source: USD, October 2020

Figure 1-3. Process Flow Diagram for the Alvarado WWTTP

existing mist scrubber systems, one which treats foul air from AB 1-4 and the other which treats foul air from AB 5-7, will be replaced as part of the ETSU Program.

Existing Effluent Disposal System

Currently, USD is permitted to discharge effluent at three discharge points:

- EBDA system
- Hayward Marsh
- Old Alameda Creek, during storm events only

The EBDA outfall provides the main effluent discharge for USD, with Hayward Marsh and Old Alameda Creek providing essential wet weather capability as well. The Alvarado WWTP has an average dry weather flow (ADWF) of 23 million gallons per day (mgd) and is permitted through EBDA and the San Francisco Bay Regional Water Quality Control Board (RWQCB) to discharge 33 mgd ADWF and 42.9 mgd peak daily flow over a 3-hour average to the EBDA common outfall. Use Permit UP-4-95 from Union City allows up to 38 mgd. In addition, the EBDA outfall NPDES permit specifies limitations for effluent carbonaceous biochemical oxygen demand (cBOD₅), total suspended solids (TSS), and pH which are summarized in Table 1-1. The District must comply with these standards at the time of discharge to the EBDA force main.

Table 1-1: Current EBDA Effluent Limitations for Conventional and Non-Conventional Pollutants

Pollutant	Monthly	Weekly	Instantaneous Minimum	Instantaneous Maximum
cBOD ₅ , mg/L	25	40	-	-
TSS, mg/L	30	45	-	-
pH	-	-	6	9

Source: Phase 1A-30% Design Report, reference 6

On average, about 3-mgd of effluent from USD is discharged from the EBDA pipeline to the Hayward Marsh which is owned and operated by the EBRPD. The marsh serves to further polish the WWTP effluent prior to the flows discharging to San Francisco Bay. During wet weather, WWTP effluent flows greater than 42.9 mgd can be conveyed to the Hayward Marsh.

In addition to the Hayward Marsh, during wet weather USD can discharge via the emergency outfall to Old Alameda Creek under NPDES Permit No. CA0038733 (see Outfall in Figure 1-2). This 5-year permit was renewed on October 14, 2020 by the RWQCB for a new 5-year period ending on November 30, 2025.⁷ A Report of Waste Discharge (ROWD) was prepared by Woodard & Curran for the District in support of the permit renewal process.⁵ The ROWD was prepared under the assumption that wet

weather discharges to the Hayward Marsh will be eliminated and more frequent but still intermittent discharges to Old Alameda Creek will be required.

DEVELOPMENT OF THE ETSU PROGRAM

The District initiated the ETSU Program in 2019 to address several issues at the WWTP as described in the Program Report (Appendix B in reference 3). These issues are discussed below:

Goals and Approach

The overall goal of the ETSU Program is to provide USD with a technically and fiscally sound practical plan for the District's WWTP for the next 20 to 40 years. The Program is intended to serve as a roadmap, outlining key decisions to be considered in the future, while allowing USD to implement critical near-term projects over the next 5 to 10 years. This will enable the District to maintain compatibility with the long-term vision for the WWTP, thereby avoiding stranded assets and undesirable space planning ramifications. The following objectives are considered as part of the ETSU Program.

1. The Program must provide cost effective solutions.
2. Impacts to ratepayers will reflect the values of the community and be fair and reasonable.
3. USD will continue to be a good neighbor where odor control is critical and visual appearance to surrounding neighbors is considered.

Challenges and Drivers

The four key drivers for the ETSU Program are the following:

1. Secondary treatment process performance requires immediate upgrades and a plan for improving suspended solids removal and meeting anticipated nutrient regulations;
2. The District needs new effluent management options with the anticipated elimination of the Hayward Marsh wet weather discharge;
3. Asset management, buildings and facilities need seismic upgrades and repairs; and
4. There is limited land available onsite for addressing these priorities.

Further discussion of these drivers is provided below.

Secondary Treatment Process Performance. Previous studies have demonstrated that solids loadings to the WWTP will increase about 1% per year over the next 30 years and, additionally, the plant needs improvements to maintain capacity at current ADWF and cannot reliably treat peak hour flows due to poor settling of the activated sludge.³ A number of improvements to the secondary system have been included in the ETSU Program to more effectively treat the increased loading during both average and wet weather conditions as well as to accommodate service area population growth and maintain the current permitted capacity of the treatment plant.

Nutrients in the San Francisco Bay are becoming a major area of concern for the Bay Area water quality community. Changes to the regulations including nutrient removal requirements for treated effluent are anticipated by USD and reflected in the ETSU Program improvements. Requirements for nutrient removal would be imposed by the RWQCB through their evolving Nutrients Watershed Permit which thus far has included a regional permit issued on April 9, 2014, and a second watershed permit which was issued on July 1, 2019. The permit has focused on an expanded science program, and the establishment of load targets which are set at 15% above 2014 baseloads. This latter permit also focuses on effluent total nitrogen, which is defined as the sum of total ammonia (NH₃), and nitrate and nitrite as nitrogen. The timing of RWQCB implementing specific nutrient limits is still unknown, although the next permit will likely include a dry season capload.³

Effluent Management. The Hayward Marsh has been an effective effluent wet weather discharge option for USD for many years. However, for the marsh to continue to be effective, it needs to be able to be permitted by the RWQCB, and needs to be maintained and supported (including dredging and levee reconstruction) by the EBRPD at substantial cost. EBRPD has indicated they are not in a position to make the needed improvements in order for USD to rely upon the marsh for reliable discharge capacity.³

Based on this development, USD commissioned an Effluent Management Study to identify and evaluate alternative wet weather effluent discharge options (Appendix A to reference 3). Expanded use of the Old Alameda Creek outfall was determined to be the most viable option.

Discharge to Old Alameda Creek is regulated under RWQCB Order No. R2-2020-0027 and NPDES Permit No. CA0038733 which was set to expire on November 30, 2020. In support of the permit reissuance and in compliance with RWQCB Rules and Regulations, a ROWD was prepared and submitted.⁵ The ROWD reflects that the Hayward Marsh would no longer be accepting secondary treated wastewater. Appropriate documentation and analyses were included in the ROWD to support better use of the Old Alameda Creek as the wet weather discharge location. The

RWQCB reissued CA0038733 at their October 14, 2020 meeting. Adoption of waste discharge requirements by the RWQCB is statutorily exempt from the requirements of the California Environmental Quality Act (CEQA).

Asset Management. The Alvarado WWTP has had upgrades made to various systems, but major infrastructure repairs are still required. Thus, in addition to capacity, effluent, and nutrient removal drivers, asset management becomes a driver. Structural and seismic repairs are needed and the ETSU Program affords USD the opportunity to address aging infrastructure drivers while addressing the capacity and effluent discharge needs.

Land Availability. Land availability is also a key driver as the Alvarado WWTP has limited land availability for construction of near-term and long-term improvements. A real estate acquisition analysis was completed to address the District's real estate needs for facility development (Appendix D in reference 3). The analysis determined the unavailability of adjacent parcels, concluding the current WWTP footprint and approach to treatment process technology should be relied upon for these facilities.

9. Project Description:

This IS/MND analyzes the environmental impacts of Phase 1 of the ETSU Program. The ETSU Program and Phase 1 are described in more detail below. This document is both a program and project-level Initial Study/Mitigated Negative Declaration (IS/MND). It considers the Phase 1A–AB Improvements at a project level and the remaining projects in the ETSU Phase 1 (Phase 1A–Campus Building, Phase 1B–Secondary Clarifiers and Effluent Facilities, and Phase 1C–Plant Equalization Storage) at a program level. The Phase 1 project areas are all within the existing Alvarado WWTP, with the possibility of additional use of adjacent right-of-way.

ETSU PROGRAM OVERVIEW

The ETSU Program was developed to meet the wastewater treatment and disposal needs for USD over the next 20 to 40 years. The secondary treatment process improvements will be programmed in a phased approach, in order to meet both near-term needs and future challenges posed by capacity limitations, future nutrient removal, and effluent discharge.

Program Phases

The ETSU Program is comprised of three phases as follows:

- Phase 1. Phase 1 is the most immediate priority for the WWTP and calls for implementation of the first phase of Secondary Treatment Process Improvements by 2027. Phase 1 will focus on improvements to the ABs,

addition of AB 8, new secondary clarifiers, effluent facilities, and equalization to provide for improved process control/settling, early action nutrient removal and improved effluent quality. Construction of the new clarifiers will require demolition of the existing Administration and Control Buildings and replacement of these buildings in a new campus layout on USD-owned property to the north of the current active plant site.

- Phase 2 includes secondary treatment process improvements at the WWTP intended to address potential future numerical effluent nutrient limits and provide capacity for projected flows and loadings for 2040.
- Phase 3. Phase 3 improvements would be triggered if more stringent nutrient limits are imposed by the RWQCB. If these limits are not imposed, elements of Phase 3 would be implemented at the appropriate time to address the flows and loads experienced beyond 2040 to buildout. Buildout capacity at the WWTP will not exceed 38 mgd.

Design Flows and Loads

Historical plant influent flow data was analyzed in the 30% Design Report to determine flow peaking factors.⁶ Based on this analysis, it was assumed dry weather flow and loads would escalate 1% per year. Table 1-2 summarizes the dry weather and peak hour design flows for 2028 (Phase 1 complete), and for information purposes for 2040 (Phase 2 complete), and buildout (Phase 3 complete). As mentioned earlier, the current effluent ADWF limitation is 33 mgd; thus, design flows as measured by average annual design flows in Table 1-2 will remain below permit limits for the foreseeable future. Table 1-2 also lists the ETSU Program peak hour design flows.

Table 1-2. ETSU Program Dry Weather and Peak Hour Design Flows

Design Condition	Dry Weather (mgd)	Peak Hour (mgd)
Current	23.4	64.7
2028	25.8	67.1
2040	29.1	70.4
Buildout (AA flow = 33-mgd)	33	74.4

Source: Phase 1A-30% Design Report, reference 6

ETSU Program design loads were also developed in the Phase 1A design report and are summarized in Table 1-3.⁶ A 15% load increase was incorporated into the projections to account for increased loading conditions observed at the WWTP.

Table 1-3: ETSU Program Design Loads with 15% Load Increase

Pollutant ^a	2018 Loads (lbs/day)	2028 Loads (lbs/day)	2040 Loads (lbs/day)
COD, lbs/day	146,000	184,000	207,000
cBOD ₅ , lbs/day	52,600	66,000	75,000
TSS, lbs/day	70,500	89,000	100,000
TKN, lbs/day	10,650	13,000	15,000
NH ₃ , lbs/day	7,240	9,100	10,300
TP, lbs/day	1,350	1,700	1,900

^a COD – chemical oxygen demand

cBOD₅ – carbonaceous biochemical oxygen demand

TSS – total suspended solids

TKN – total Kjeldahl nitrogen

NH₃ – Ammonia

TP – total phosphorus

Source: Phase 1A-30% Design Report, reference 6

Old Alameda Creek Effluent Limitations

Table 1-4 summarizes current Old Alameda Creek effluent limitations for the WWTP wet weather discharge as included in RWQCB Order No. R2-2020-0027 for NPDES No. CA0038733 adopted on October 14, 2020.⁷ In addition to cBOD₅ and TSS standards, discharges to Old Alameda Creek must meet an instantaneous maximum effluent total residual chlorine of 0.0 mg.

Table 1-4: Current Old Alameda Creek Effluent Limitations

Pollutant ^a	Effluent Limit
Lead	Average Monthly Effluent Limit: 3.4 ug/L
cBOD ₅	Average Weekly Effluent Limit: 40 mg/L
TSS	Average Weekly Effluent Limit: 45 mg/L
DO	Receiving water minimum limit of 5.0 mg/L and three-month median > 80% of saturation
pH	Instantaneous Effluent and Receiving Water Limit is 6.5 – 8.5
Oil & Grease	Max. Daily Effluent Limit: 20 mg/L
Total Residual Chlorine	Instantaneous Max. Effluent Limit: 0.0 mg/L
Bacteria	Maximum Daily Effluent Limit: 320 MPN/100 mL for fecal coliform

^a cBOD₅ – carbonaceous biochemical oxygen demand

TSS – total suspended solids

DO – dissolved oxygen

Source: RWQCB Order No. R2-2020-0027, reference 7

RWQCB Order No. R2-2020-0027 also regulates the frequency of wet weather effluent discharge. The Order authorizes more frequent use of wet weather discharge of up to

12 times per wet weather season after wet weather effluent flows exceed 36 mgd and the District optimizes WWTP operations to minimize discharges to the creek. The District also continues to be authorized to conduct discharge flap gate exercises up to twice per year from November 1 to April 30 at 140,000 gallons per event. The Order also summarizes the District's ETSU Program and plans to complete plant upgrades that will enhance effluent quality by providing significant nitrogen removal.

ETSU PHASE 1 PROGRAM IMPROVEMENTS

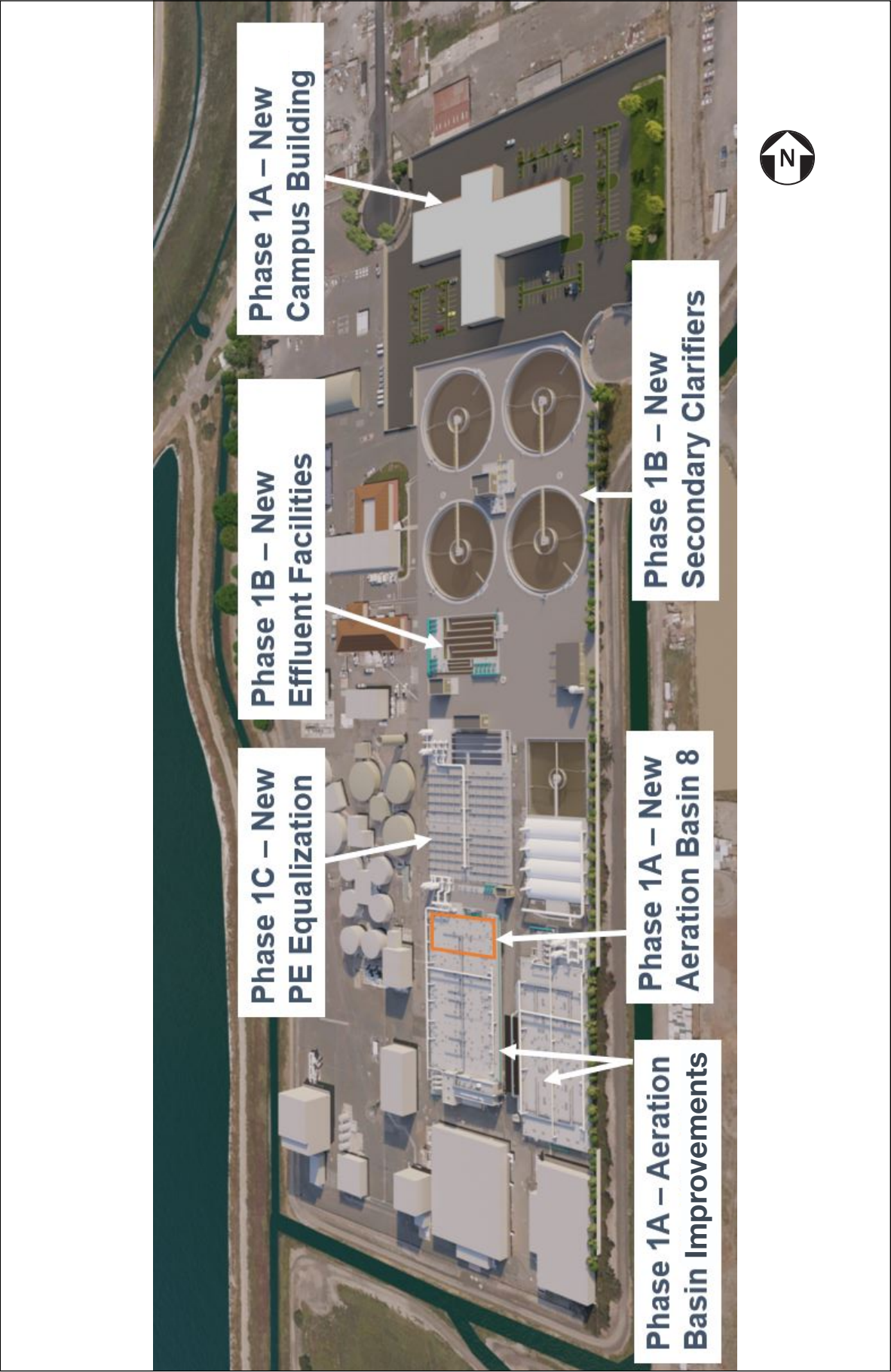
Phase 1 of the ETSU Program addresses near-term objectives including capacity limitations, aging infrastructure, and wet weather discharge. It includes modifications of the ABs, a new AB 8, a new building campus, new secondary clarifiers, new effluent facilities and new primary effluent equalization at the existing Alvarado WWTP site. Table 1-5 summarizes the description of phases and shows Phase 1 broken out into three projects – Phase 1A, 1B, and 1C. The proposed facilities in Phase 1 are shown on Figure 1-4.

Table 1-5: Scope of the ETSU Phase 1 Program

Phase	Objective	Scope	Timing
1	Address capacity limitation, aging infrastructure and wet weather discharge	Phase 1A <ul style="list-style-type: none"> • AB modifications • New AB 8 • Blower replacement • New building campus Phase 1B <ul style="list-style-type: none"> • New secondary clarifiers • New effluent facility Phase 1C <ul style="list-style-type: none"> • Primary effluent equalization 	2020 - 2027

Source: Phase 1A-30% Design Report, reference 6

Phase 1 has been split into three projects by USD for constructability reasons. Phase 1 projects will be completed in five to seven years. Since all the projects in Phase I are linked from a process, site, and timing perspective, the District completed the 30% design of all Phase 1 in the Phase 1A-AB Improvements Project.⁶ The Phase 1A–Campus Building Project, however, is currently in the evaluation phase. Its 30% design was completed in February 2021. For purposes of this IS/MND, the design consultant for the ongoing campus project has furnished appropriate descriptive information to be used prior to publishing the 30% design report.



Source: Hazen and Sawyer, October 2020

Figure 1-4. ETSU Phase I Program Proposed Facilities

Phase 1A-Aeration Basin Improvements

Proposed facilities to be constructed in the Phase 1A-AB Improvements Project of the ETSU Program are summarized in Table 1-6.

Table 1-6: Summary of Phase 1A – AB Improvements Project

Improvement ^a	Purpose
Modify Control Box No. 2	Provide an equal primary effluent flow distribution to each basin
Improvements to East and West Aeration Basins	Improve performance and reliability with flexible operational configurations to meet current and future effluent limits, including nutrient removal, and enhance operability
Addition of AB 8	Provide additional aeration to maintain capacity to improve performance and reliability as stated above
Replace West Blower Building Blowers	Provide 10% more aeration capacity with the same footprint
Replace East Blower Building Channel Blowers	Provide firm capacity to meet East Aeration Basin Effluent Channel aeration requirements
Install West Blower Building Channel Blowers	Provide firm capacity to meet West Aeration Basin Effluent Channel aeration requirements
Replace existing mist scrubber odor control units with activated carbon units, potentially transition to a centralized biofilter in Phase 1C	Provide more efficient and reliable odor control
Plant Lift Pump Station No. 2	Replace existing lift pumps and coat existing wet well
General infrastructure such as piping and electrical	Replace or provide piping and electrical infrastructure to support the above project elements

^a Auxiliary improvements include site piping and infrastructure, and other improvements to bring power and communications to new campus building.

Source: Phase 1A-30% Design Report, reference 6

Modifications to the East Basins (Basin 1-4) and the West Basins (Basins 5-7) will improve performance and reliability with flexible operational configurations to meet current and future effluent limits, including nutrient removal, and enhance operability. A fourth West Basin (AB 8) will be constructed and configured similarly to the other West Basins. Upon completion of the Phase 1B improvements discussed below, the basins will be capable of operating in a biological nutrient removal (BNR) mode.

Phase 1A–Campus Building

The following is a summary of the design parameters developed for the project:

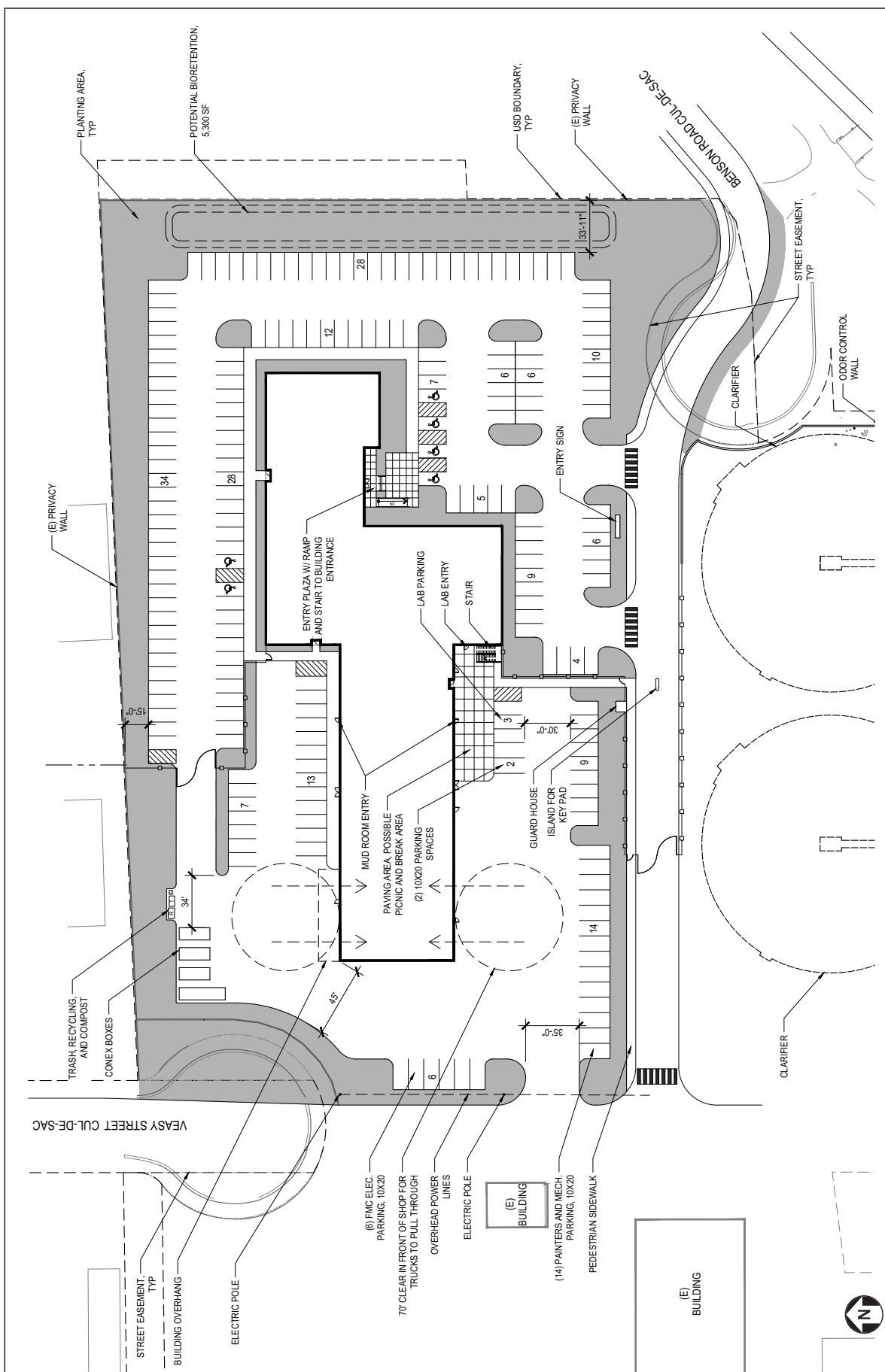
- Consideration of staffing needs and space for current and future staff.
- Maximize efficiency and collaboration among staff.
- Seismic evaluation of existing structures to address building codes.
- Visual inspection of existing equipment.
- Visual inspection of existing structures to address recent building codes.
- Minimize operation and maintenance (e.g., life cycle) costs associated with building infrastructure.

Because of the condition of the existing buildings and the suitability of the current building space for the new secondary clarifiers, the District-owned land on the north of the property will be the location of the new campus-style building group that combines multiple administrative, operations, and maintenance functions in a group of disparate buildings with shared common walls. The location of the new facility is currently on land that has been previously developed and is currently used by contractors for staging, parking, and construction trailers. A Phase 1 and Phase 2 environmental site assessment was performed on the site when the District originally acquired this property.⁸

The new campus groups a new Administration Building, new Control/Lab Building, and a new Facilities Maintenance (FMC) building that will allow shared parking, elevators, lockers, and common space to maximize efficiency and collaboration of staff. The architectural programming determined that approximately 65,000 square feet of building space will be required to meet the needs of USD. The proposed site layout is configured to provide separate public and employee entrances and parking areas and also to provide adequate turn radius for FMC vehicles. A preliminary site plan is shown on Figure 1-5.

The new campus building will be 2-stories in height with appropriate architectural features and landscaping. Mechanical systems are expected to be more energy efficient than the current building systems. Landscaping will be appropriate for the region and include drought-tolerant species. Utilities will come into the new building from either the existing buildings or via new services from either Benson Road or Veasy Street.

The campus building project may have a solar energy component. Photovoltaic (PV) panels are being considered for both the building roof and parking areas. In the parking areas, PV panels would act as covered parking. USD also envisions in the future



Source: Hazen and Sawyer, October 2020

that more vehicles will be electric-powered. Therefore, the campus building project is planning for EV charging stations in the parking area.

The new campus building facility and parking will occupy the remainder of available District land at the WWTP. In addition, to accommodate the new campus facility, the District may need to acquire the eastern portion of the existing Veasy Street cul-de-sac. Similarly, the District may also acquire the Benson Road cul-de-sac to provide a buffer between the public right-of-way and the new ETSU facilities. This would eliminate the need for emergency vehicles to turn around in the cul-de-sacs and instead fire vehicles would then circulate along Benson Road and turn north onto Veasy Street via passing through the District's entrance gate. A site plan of this concept is shown as Figure 1-5.

When the District acquired the northern portion of the treatment plant site, where the new campus building will be located, the existing PG&E overhead electrical power lines were not relocated or undergrounded. Instead, PG&E's facilities remained in place. However, with the new campus building PG&E's overhead lines and power poles will need to be relocated or undergrounded to not impede vehicle traffic.

In order to accommodate the new campus building electrical needs, the existing WWTP electrical system may require modifications such as to switchboards 3 and 4. These modifications could be required because the existing WWTP electrical system is nearly at capacity. To address this need, some existing electrical switchboards will require modification. In addition, the existing 12-kV and 5-kV may also need to be upgraded. This will include connecting the PG&E electrical service to a new 12kV switchgear located adjacent to the Veasy Street entrance, from the 12-kV switchgear a new underground electrical duct bank will be installed to the new campus building to power the new building. Additionally, a new underground duct bank will be routed from the new switchgear to the existing electrical vault where the existing PG&E electrical service is connected.

Storm drainage on the campus building site will be handled as follows:

1. The eastern portion of the campus storm water will flow to a bioretention basin located on the eastern edge of USD's property. The bioretention facility has been sized and designed to accommodate the site needs and to be able to discharge to either the adjacent Alameda County Flood Control & Water Conservation District channel, where the flow currently discharges, or the treated storm water can be conveyed to USD's existing on-site site waste pump station. The on-site site waste pump station conveys storm water back to the start of the wastewater treatment plant for treatment.
2. The western portion of the campus storm water will flow directly into a drain piping system, where the flow will be conveyed to USD's existing site waste pump

station. The site waste pump station conveys storm water back to the start of the plant for treatment. This water is then treated in combination with the rest of the treatment plant influent to meet all NPDES permit requirements and discharged through the WWTP effluent discharge facilities.

The stormwater system may necessitate that the WWTP's existing Site Waste Pump Station and associated collection piping and forcemain to the headworks be improved or a second pump station and forcemain be constructed on-site to accommodate stormwater flows from the campus building project.

At the completion of the Phase 1A-Campus Building Project the District's existing administration and operations buildings may be demolished to prepare for the Phase 1B new secondary clarifiers. The existing administration and operations buildings are an obstacle to expanding the secondary treatment process. It must be demolished prior to construction of the new secondary clarifiers in Phase 1B.

Phase 1B and 1C Facilities

Additional proposed ETSU facilities include Phase 1B–Secondary Clarifiers and Effluent Facilities and Phase 1C–Plant Equalization Storage to be constructed at the existing Alvarado WWTP site. Specific components of each phase are summarized in Table 1-7.

Table 1-7: Summary of Phase 1B and 1C Improvements

Phase	Improvement ^a	Purpose
1B	New MLSS distribution box	Provide ability to individually isolate each clarifier for maintenance while maintaining even flow distribution to all online secondary clarifiers
1B	Four new approximately 160-foot diameter secondary clarifiers	Promote the separation of the MLSS into a clarified effluent and a thickened RAS/WAS
1B	New RAS/WAS pump station	Convey RAS to the aeration basins and WAS to the gravity thickeners
1B	New effluent facility with pump stations (EBDA Discharge, OAC Discharge, Elutriation, Reclaimed Water)	Replace the existing effluent facility (disinfection/dechlorination/pumping facilities) and repurpose part of the existing chlorine contact tank for temporary effluent storage. Ancillary facilities include a new reclaimed water pump station and new elutriation pump station.
1B	Relocate existing effluent force main	Avoid construction interference with new clarifiers

Table 1-7: Summary of Phase 1B and 1C Improvements

Phase	Improvement ^a	Purpose
1B	Primary clarifiers 1-4 seismic upgrade	Upgrade to provide the necessary quality of primary effluent that flows to the aeration basins
1C	Retrofit existing secondary clarifiers 1-4 to operate as effluent equalization basins	Improve process performance of secondary clarification and disinfection and reduce frequency of discharge to the Old Alameda Creek by decreasing the peak flow during wet weather events
1C	New activated carbon treatment or centralized biofilter (decision pending)	Provide efficient and reliable odor control for equalization basins and potentially also for ABs 1-8
1C	New primary clarifiers and headworks odor control systems	With the new ABs and equalization basins odor control systems, the headworks and primary clarifiers will also require new odor control systems in order for USD to meet plant-wide local air quality requirements and the District's odor policy goals
1C	Primary clarifiers 5-6 rehabilitation	Upgrade to provide the necessary quality of primary effluent that flows to the aeration basins
1C	Solar and Wind Power Production	To offset the additional electrical power usage the District is also considering approaches to increase the use of solar photovoltaic panels and wind power generation designed appropriately for the surrounding area
1C	Flares Replacement	In order to be compatible with the plant-wide local air quality requirements, USD's odor policy goals, and expected upcoming BAAQMD regulation, the existing flares will require upgrading
1C	Cogeneration System Improvements	To offset the additional electrical power usage, the District is also considering approaches to increase the use of alternative energy which may include a new gas blending system along with a new engine to be installed in the third open space of the existing Cogeneration Building. This may include the addition of a high strength waste receiving station to increase biogas production

Table 1-7: Summary of Phase 1B and 1C Improvements

Phase	Improvement ^a	Purpose
1C	Degritting at Headworks	Installation of new grit removal equipment immediately downstream of the Headworks Building to more efficiently remove wastewater grit to improve the water quality of the primary effluent prior to the ABs.
1C	Organic Energy Recovery	To offset the additional electrical power usage the District is also considering approaches to increase the use of alternative energy which may include the addition of a new facility to accept organic material to increase biogas production. Additional truck hauling associated with the facility operation will typically occur in off-peak hours.

^a Auxiliary improvements include site piping and infrastructure
Source: Phase 1A-30% Design Report, reference 6

The secondary clarifiers are an important component of the ETSU Program. They will promote the separation of the MLSS into a clarified effluent and a thickened RAS/WAS. The new secondary clarifiers will maximize the use of available area and maximize process flexibility and reliability by providing improved treatment and the ability to accommodate higher solids loading. In addition, the clarifiers can pass peak flow with one unit out of service.

Demolition

The Phase 1B-Secondary Clarifiers and Effluent Facilities Project may include the demolition of the District's existing administration and operations building prior to the construction of the new secondary clarifiers. The existing administration and operations building are an obstacle to expanding the secondary treatment process. They must be demolished prior to construction of the new secondary clarifiers in Phase 1B.

Structural and Geotechnical Design

Phase 1 work includes construction of new structures and modification to existing structures. Structures to be modified were originally constructed from the 1970s through the 1990s. Because the WWTP site is located in an active earthquake zone, seismic analysis will affect structural design of both new structures and the modifications to existing structures.

DCM Consulting prepared a desktop study which included preliminary geotechnical recommendations based on a previous geotechnical investigation at the site. This study is included as Appendix B to the Phase 1A-30% Design Report.⁶ A seismic analysis technical memorandum was subsequently prepared by Hazen and Sawyer and is included as Appendix A to the Phase 1A-30% Design Project. Additional geotechnical investigations will be completed for Phase 1 work, and preliminary geotechnical recommendations may be modified as a result of these investigations.

The governing code for the new construction will be the current applicable version of the California Building Code. This code as well as selected provisions from a variety of other supplemental design codes will guide the design of the Phase 1 projects.

Construction

Construction details of Phase 1 projects are shown in Appendix A. The figures in Appendix A show the lateral and vertical disturbance of those improvements which require excavation. The improvements with the largest construction footprints include the new AB 8 in Phase 1A–AB Improvements, the new campus building in Phase 1A–Campus Building, and the four new secondary clarifiers in Phase 1B–Secondary Clarifiers and Effluent Facilities. Otherwise, the improvements generally consist of excavation for new pipelines, ductbanks, equipment replacement/upgrades, and pads for auxiliary facilities.

For the new campus building, it is anticipated that the new building foundation will consist of one or a combination of preloading the site to address settlement consolidation, pile foundations to accommodate both settlement and liquefaction, or soil mixing to accommodate both settlement and liquefaction. Preloading the site would include adding 4-8 feet of soil for up to six months in the location of the building footprint to consolidate the existing soil. Pile foundations could include drilled displacement columns or auger cast piles. Conventional impact pile driving will not be used due to potential off-site noise and vibration issues to nearby residences and special-status species in the Eden Landing Ecological Reserve.

The Phase 1A-AB Improvements Project will include additional blowers that will consume more electricity. To offset the additional electrical power usage the District is also considering approaches to increase the use of alternative energy beyond that described for the Campus Building earlier. As part of the latter phases of the program, there is an opportunity to add solar power and/or wind power on the WWTP site. For solar power, there are a variety of other sites around the WWTP and possibly on existing structures. For wind power, the campus building site as well as other locations within the WWTP could support a wind-driven system.

Sitework and Truck Load Estimates

Table 1-8 summarizes the site work needed for the ETSU Phase 1. Excavation, backfill, and concrete/gravel quantities are estimated along with the number of truck loads assuming 10 cubic yard (cy) capacity. Phase 1C-Plant Equalization Storage has the least volume of materials to be trucked at 1821 cy, while Phase 1B-Secondary Clarifiers and Effluent Facilities has the most at 239,982 cy, due largely to the excavation required for the four new clarifiers. Phase 1B would accordingly have the highest haul truck generation at 23,998 trucks, but as discussed below, this estimate will be spread out over a 720-working day construction duration phase.

Table 1-9 provides a summary of haul truck generation for ETSU Phase 1 with two options, one using 10 cy trucks and the other using 16 cy trucks. Using 16 cy trucks provides about a 37% reduction in trucking requirements. With 10 cy trucks, truck generation would range from 4 trucks/day for Phase 1C to 37 trucks/day for Phase 1B, or about 4 to 5 trucks/hour. The corresponding numbers for 16 cy trucks would be 3 to 25, or about 3 trucks/hour. To provide a conservative assessment of impacts in Chapter 3, 10 cy trucks are assumed, but the value of 16 cy trucks in reducing impacts is recognized.

Table 1-8. Summary of Excavation, Backfill, and Concrete Needs for ETSU Phase 1

	Phase 1A (AB Impr.)		Phase 1A (Campus)		Phase 1B (Secondary Clarifiers)		Phase 1C (Plant Equal.)	
Construction Component	Quantity cy ^a	No. of Trucks ^b	Quantity cy ^a	No. of Trucks ^b	Quantity cy ^a	No. of Trucks ^b	Quantity cy ^a	No. of Trucks ^b
Total Excavation	24,011	2401	20,899	2090	138,685	13,869	940	94
Backfill soil (Imported)	0	0	9900	990	81,993	8199	0	0
Concrete/gravel (Imported)	3214	321	20,308	2031	19,304	1930	881	88
Total	27,225	2722	51,107	5111	239,982	23,998	1821	182

^a Quantities do not include asphalt pavement replacement

^b Assumes 10-yard trucks

Source: Hazen and Sawyer, October 2020

Table 1-9. Summary of Truck Generation for ETSU Phase 1

Parameter	Phase 1A (AB Impr.)		Phase 1A (Campus)		Phase 1B (Secondary Clarifiers)		Phase 1C (Plant Equal.)	
	10 cy	16 cy	10 cy	16 cy	10 cy	16 cy	10 cy	16 cy
No. of delivery/haul trucks	2722	1702	5111	3194	23,998	15,000	182	114
Duration of construction phase, days	960	960	400	400	720	720	240	240
No. of delivery/haul trucks per day	3	2	13	8	33	21	1	0
Allowance for equipment/supplies, trucks per day	1	1	1	1	2	4	1	3
Total trucks per day	4	3	14	9	37	25	4	3

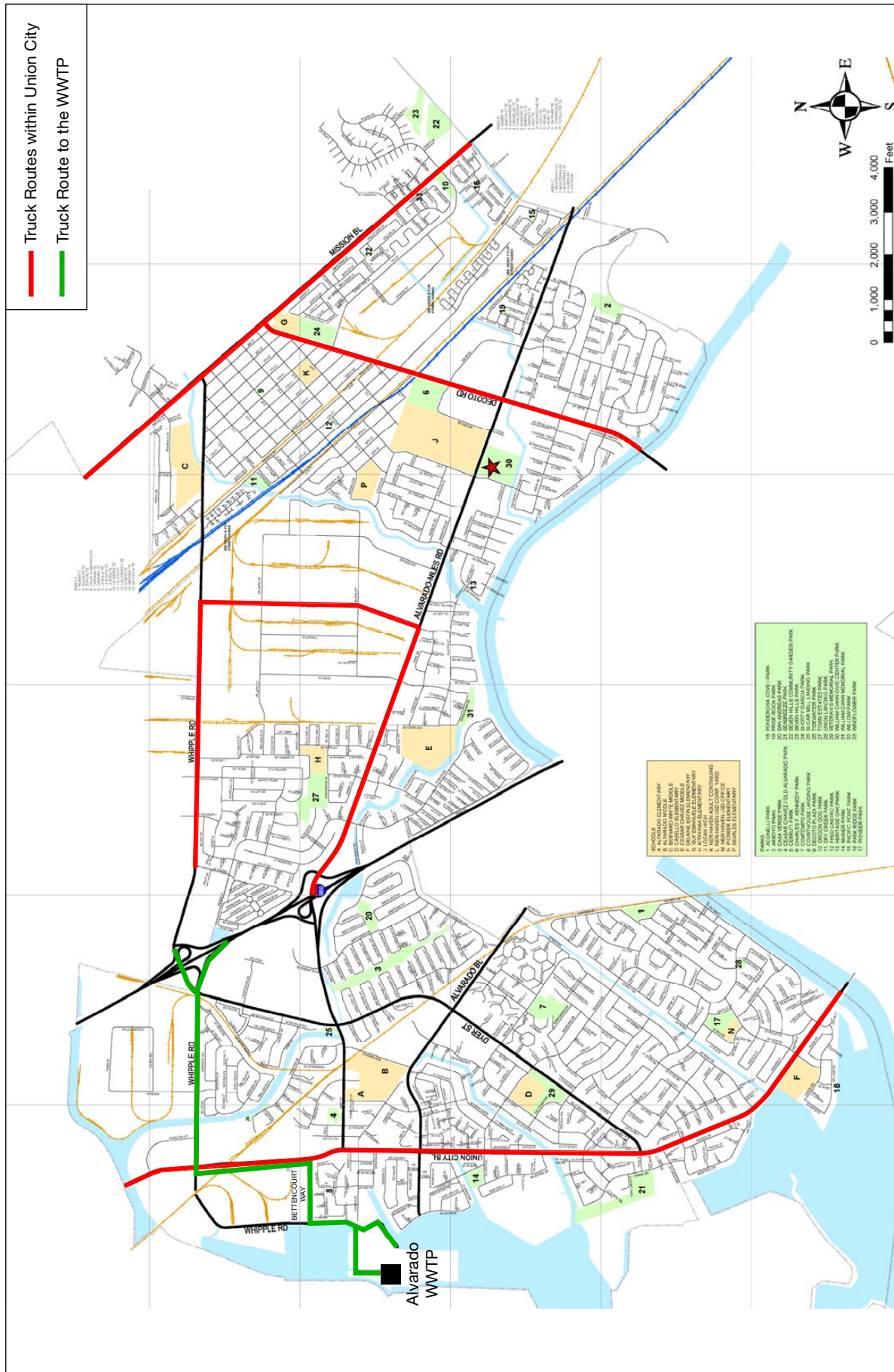
Source: Hazen and Sawyer, October 2020, and February 22, 2021

Figure 1-6 shows the truck routes within Union City along with the main truck route to the Alvarado WWTP.⁹ Based on Union City's truck route requirements from I-880, trucks would take the Whipple Road exit west and continue on crossing Union City Boulevard and continue heading on Whipple as it turns south. However, Whipple Road is currently blocked off west of Union City Boulevard. Therefore, the alternate truck route is to turn south from Whipple onto Union City Boulevard. At Bettencourt Way, turn west and then turn south onto Whipple Road. After crossing Bettencourt Way, trucks can either turn west on Horner and then south on Veasy Street, or the trucks can continue south on Whipple as it transitions to Benson Road.

Operations

The Secondary Treatment Process Improvements listed in Tables 1-6 and 1-7 would be programmed in a phased approach in order to meet both near-term needs and future challenges posed by capacity limitations, future nutrient removal, and effluent discharge. Process flexibility was incorporated into the aeration basin design in the Phase 1A-AB Modifications to achieve a wide range of treatment goals such as carbon removal, sludge settling, denitrification and nitrification. New AB 8 provides many operational benefits, including increased ammonia and solids removal during cold weather to ensure water quality objectives are met for discharge to Old Alameda Creek, particularly as influent loading to the plant increases.

The addition of four new secondary clarifiers in Phase 1B will maximize process flexibility and reliability by providing increased clarification capacity and the ability to accommodate higher solids loading. Phase 1B also provides a new effluent facility which will result in a reduction of discharges to the emergency outfall by using part of



Source: Hazen and Sawyer, October 2020
 Union City General Plan, reference 8

Figure 1-6. Truck Access to the WWT

the existing chlorine content tank for Old Alameda Creek diversion storage of about 0.55 mg.

In Phase 1C, the existing secondary clarifiers 1-4 will be retrofitted to operate as primary effluent flow equalization basins. Primary effluent flow equalization provides many benefits to the secondary and disinfection processes, as well as reducing the frequency of discharge to Old Alameda Creek by decreasing the peak flow during wet weather events.

The ROWD in support of re-issuance of Old Alameda Creek wet weather discharge permit CA0038733 estimates that upon completion of ETSU Phase 1, the District's load of total inorganic nitrogen to Lower San Francisco Bay will be reduced by about 50% on an annual basis and the total ammonia load will be reduced by about 90% on an annual basis.⁵ CA0038733 allows up to 12 wet weather discharges per year once WWTP flow exceeds 36 mgd. Even though permitted wet weather discharges have increased over current conditions, the level of nitrogen reduction provided by the Phase 1 Secondary Treatment Process Improvements (early action nitrogen removal) provides an equivalent of protection to applicable water quality objectives. The ROWD estimates that the current permitted wet weather discharge volume would represent only about 0.1% of the total volume of wastewater treated at the Alvarado WWTP per year; the remaining 99.9% would continue to be routed to the EBDA Common Outfall.

Staging Areas/Parking/Storage

An onsite construction trailer will be needed for each project, Phase 1A, Phase 1B and Phase 1C. These trailers will provide office space for the contractor's management personnel. Minimal parking will be provided at the contractor trailer for management staff. Offsite parking for construction personnel, laborers and trades is expected for each project of Phase 1. It is expected that the offsite parking will be within walking distance of the site or that shuttle service will bring laborers to and from the construction site. Materials will also be stored offsite in a separate laydown area. This may include yard space and rented warehouse space for tools, materials and equipment. It is also expected that excavated materials will be transported off site.

Odor Control

Previous discussion in this chapter noted the addition of activated carbon adsorption as the odor control technology for Phase 1A-AB Improvements and Phase 1C-Plant Equalization Storage and the primary clarifier and headworks. In the future Phase 1C, a centralized biofilter is a second option. Activated carbon units installed in Phase 1A could be repurposed for other plant facilities to be evaluated and determined at a later date. The decision for Phase 1C odor control technology is pending on the ongoing

odor control pilot study work results and a business case evaluation by USD. Both the activated carbon process and biofilter are described below.

Activated Carbon Process Description. Sources of odor include AB 1-8 and primary effluent flow equalization influent pump stations and influent and effluent channels. With activated carbon adsorption, air from these process areas will be pulled under negative pressure through a series of ducts to the odor control system. Air will then be pulled through the grease filter/mist eliminator of the odor control unit, to the fan, and blown through a dual bed of activated carbon. Gaseous H₂S, reduced sulfur compounds and other odorous compounds will adsorb to the activated carbon media beds and the treated air will discharge through exhaust stacks at the top of the vessels. It is estimated that the carbon will require replacement every 3 to 4 years, based on average anticipated loading.

Centralized Biofilter. Activated carbon adsorption as described above is a decentralized odor control system where multiple units are placed at selected areas. A biofilter, however, would be centralized with one system designed and constructed, requiring foul air from each of the sources to be collected and conveyed to the unit.

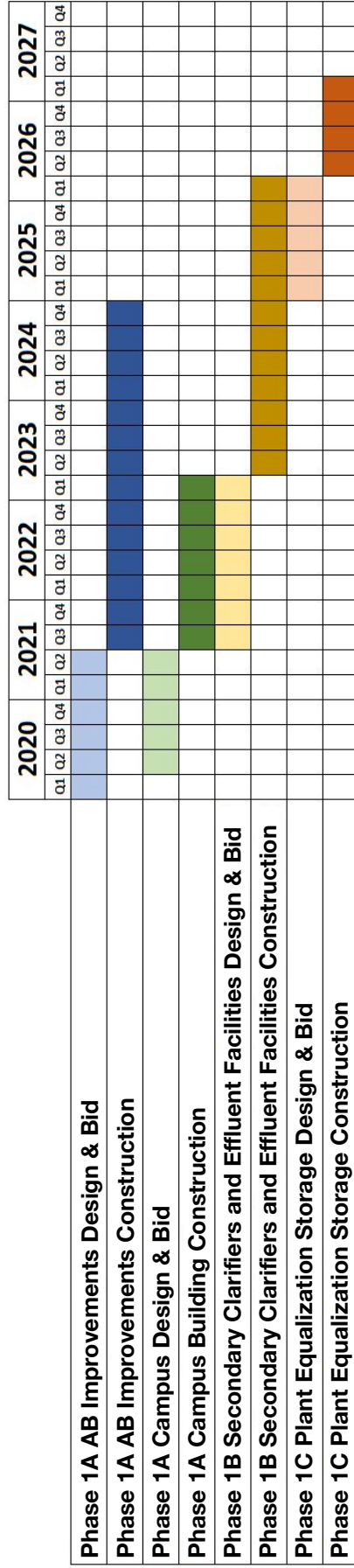
Biofilters provide effective treatment for a broad range of odorous compounds with low operational and maintenance requirements. Engineered synthetic media and organic media have been considered by USD but engineered media has more advantages. As air passes through the biofilter, odorous compounds are dissolved into the moisture on the surface of the media. Then, once dissolved, biological oxidation occurs with the microbial communities present in the media. Typically, the media would be replaced every 20 years.

Sea Level Rise

According to a preliminary study on the effect of sea level rise and district infrastructure, the elevation of the 100-year storm still-water at the Alvarado WWTP will be at an elevation of 11 feet in the year 2050 and higher in subsequent years.¹⁰ There are two sets of levees which surround the plant site, varying in height from 7-12 feet NAVD88 and 10-14 feet NAVD88. The new campus building is being designed with a finished floor elevation of 11.5 feet to account for anticipated 2050 sea level rise and a 0.5 foot buffer. In the future, USD will coordinate with ACFC&WCD on levee improvements near the WWTP so that necessary improvements are made to provide needed protection to land, infrastructure, and facilities from sea level rise.

Schedule

Figure 1-7 shows the overall schedule for Phase 1 of the ETSU Program. Phase 1 is estimated to be completed by February 2027. It is assumed in the schedule that the



Source: Hazen and Sawyer, October 2020

Figure 1-7. ETSU Phase 1 Program Schedule

AB Improvements (Phase 1A) and the Campus Building (Phase 1A) will be bid together in one package. However, alternate bidding concepts are also being considered. One alternate approach would be two bid packages. The first one would include site preparation for the campus building and construction of the utilities such as new electrical duct banks and switchgear, relocation of the PG&E facilities, installation of the water, sewer, storm drain, and gas piping. The second bid package would be the combined AB Modifications and Campus Building work that was not included in Bid Package 1. The second alternate bidding concept is to break out AB Improvements and Campus Building as two separate packages. The first bid package would be for the AB improvements and the second bid package would be for the Campus Building. The advantage of this concept is the AB improvements and the Campus Building projects generally require two different types of contractors.

The extension of 1A through 2024 is due to site construction sequencing constraints connected with the AB Improvements. The extended Phase 1B duration can be attributed to extensive excavation and use of piles.

Other WWTP Projects

The assessment of direct and indirect impacts of ETSU Phase 1 requires consideration of other WWTP projects which may have overlapping construction schedules. Overlapping construction schedules can increase environmental effects that would otherwise occur resulting in cumulative impacts.

USD has a WWTP capital improvement program (CIP) to respond to future needs of the plant and is updated annually. A detailed listing of the CIP project schedule from fiscal year (FY) 2021 through FY 2030 is included in Appendix B. A total of 51 projects are listed. Of those, 45 were categorized as routine replacement, replacement and rehabilitation, and minor capital projects. The remaining seven projects are classified as major capital projects and four of those which included two switchgear projects and two primary clarifier/seismic upgrade projects have been included in the Phase 1 Program. The remaining three projects include the following:

- New Digester 7, construction schedule FY 2000-2022, IS/MND already prepared¹¹
- Standby power project, construction schedule FY 2022-2024, IS/MND already prepared¹²
- WAS thickeners, construction schedule FY 2022-2024, notice of exemption (NOE) prepared

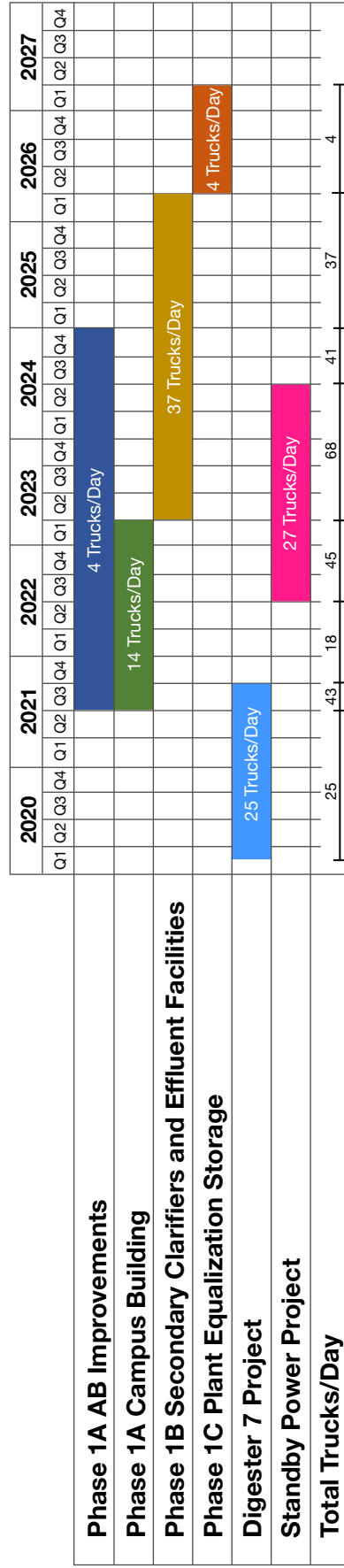
An NOE was prepared for the WAS thickening project. The Digester 7 and Standby Power projects with construction schedules between FY 2020 and 2024 would be the two other WWTP projects which could result in cumulative impacts with Phase 1 ETSU projects.

Figure 1-8 provides an overview of truck traffic for the ETSU Phase 1 assuming 10 cy trucks along with truck traffic of the other two major WWTP projects with overlapping construction schedules, the Digester 7 and Standby Power Projects. As can be seen from the figure, schedules overlap with Phase 1 projects beginning mid-2021 and ending mid-2024. However, the Digester 7 Project will be mostly completed prior to start of the ETSU Phase 1A project so there would be only a negligible contribution of truck traffic. During this time, the number of trucks due to the Standby Power Project will increase to about 45 to 66 per day, or 5 to 7 per hour.

Funding Sources and Environmental Review Approach

USD may secure funding for the Project from the State Water Resources Control Board (SWRCB) Clean Water State Revolving Fund (CWSRF) Program. The CWSRF Program is partially funded by the U.S. Environmental Protection Agency (EPA) and, by agreement, is administered by the SWRCB. Because of partial federal funding, the program is subject to federal environmental regulations, most notably the federal Endangered Species Act, the National Historic Preservation Act, and the General Conformity Rule for the Clean Air Act, among others. Instead of the National Environmental Policy Act, EPA has chosen to use CEQA as the compliance base for California's CWSRF Program. To comply with applicable federal statutes and authorities, EPA established specific "CEQA-Plus" requirements in the Operating Agreement with the SWRCB for administering the CWSRF Program. The appropriate document for CEQA compliance for the proposed Project is an IS/MND pursuant to the 2020 CEQA Guidelines. CEQA-Plus requirements are addressed in this document. USD may also apply directly to EPA for funding through the Water Infrastructure Finance and Innovation Act (WIFIA). It is anticipated this CEQA-Plus document together with the WIFIA loan application will provide the needed information.

As discussed above, Phase 1 of the ETSU Program is the focus of this IS/MND. This document is a program IS/MND which considers Phase 1A–AB Improvements at a project level as its 100% design will be completed by June 2021 followed by the bidding process. The IS/MND considers the remaining projects in Phase 1 (Phase 1A–Campus Building, Phase 1B–Secondary Clarifiers and Effluent Facilities, and Phase 1C–Plant Equalization Storage) at a program level as design of these projects has not yet progressed beyond 30% design, but consideration of cumulative impacts is possible. In compliance with the CEQA Guidelines, these projects will be reviewed again to determine if this program IS/MND is adequate, or whether further environmental review should be completed. Both Phase 2 and 3 represent future projects where implementation is uncertain and dependent on regulatory requirements that may be imposed as well as flows and loadings that may occur. Thus, their consideration in this IS/MND would be speculative in nature. Implementation of Phase 2 and 3 would include environmental review as required by CEQA.



Source: Hazen and Sawyer, October 2020

**Figure 1-8. Traffic Overview of ETSU Phase 1 Program
with Other Major WWTP Projects**

10. Surrounding Land Use

Figure 1-9 shows the location of the Phase 1 Project areas within USD's Alvarado WWTP relative to surrounding land uses. Surrounding land uses include the Eden Landing Ecological Reserve, the Old Alameda Creek Channel, light industrial use, residential, and open space. An Alameda County Water District (ACWD) monitoring well is located at the northwest corner of the WWTP. This well is used as part of ACWD's Groundwater Monitoring Program and the information collected is used in the management of the Niles Cone.

The Project site is located within the Alvarado WWTP. The WWTP borders the eastern bank of Old Alameda Creek, a channelized ACFC&WCD flood control channel that experiences tidal fluctuation and is bound by levees on either side. The Eden Landing Ecological Reserve includes restored salt ponds, adjacent diked marshes and upland transitional areas which are managed for water birds and tidal marsh species.

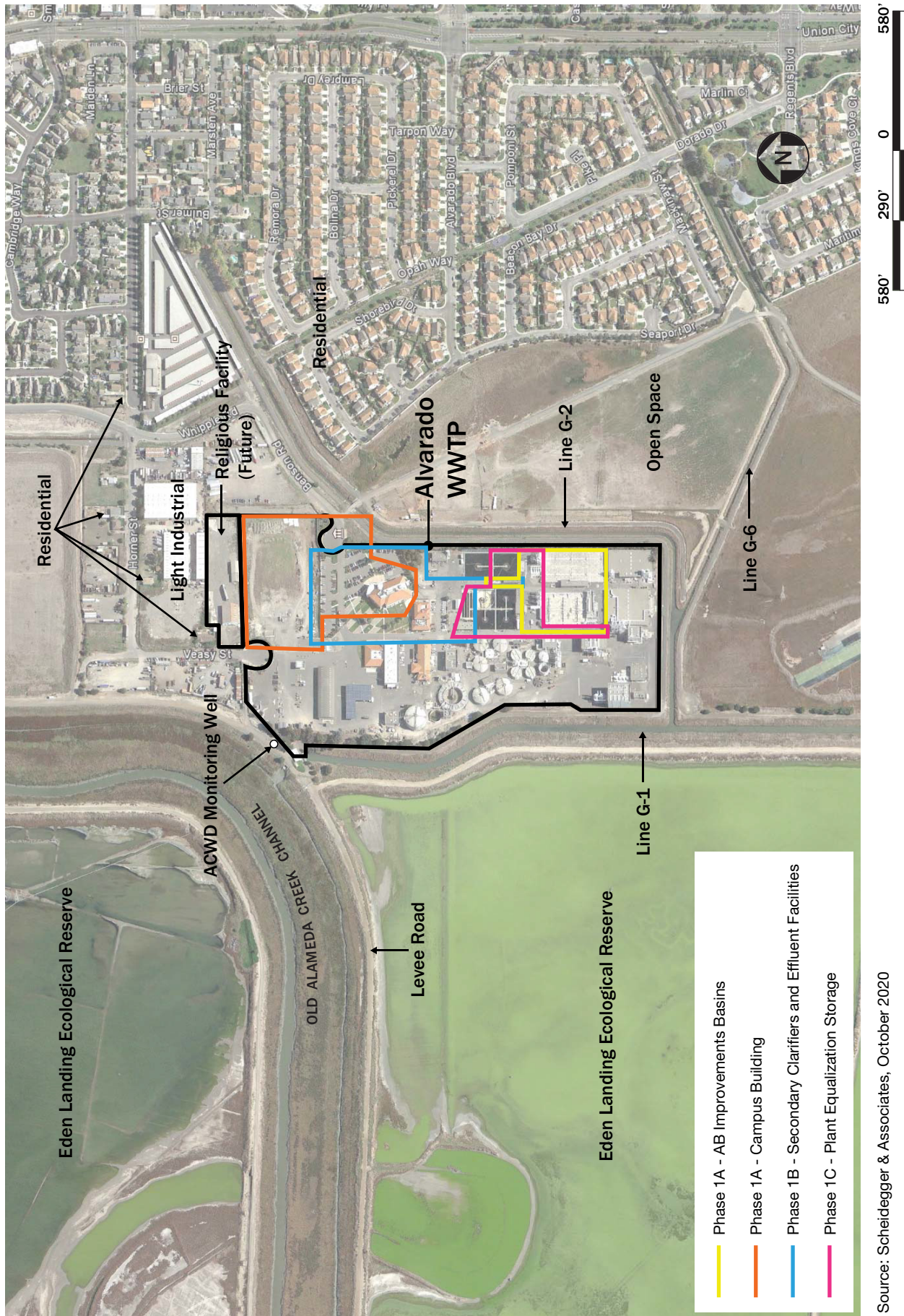
The location of a potential religious temple is also shown on Figure 1-9 which is about 200 to 300 feet from the new Campus Building. The applicant, Shri Guru Ravidass Sabha Bay Area, has proposed a new 15,707 square foot faith-based facility and associated on- and off-site improvements on a 1.9 acre parcel. According to the City of Union City staff report on the project, typically there would be about 20-30 visitors to the facility on weeknights and approximately 200 visitors on Saturdays and Sundays.⁹ An IS/MND was prepared on the project in October 2017.¹³ The applicant must still obtain land use approvals and permits from Union City, thus it likely would be at least a couple of years before construction would be completed.

The open space area shown on Figure 1-9 is owned by California State Lands Commission and the ACFC&WCD and is managed for flood control purposes. In addition to Old Alameda Creek, ACFC&WCD has a series of flood control channels (G-1, G-2, and G-6) which border the WWTP. Discharge of the drainage is via an outfall to Alameda Creek.

The open space area provides a buffer between the treatment facility and residential development further to the east. This is consistent with the Union City's 511 Areas Specific Plan which encompasses most of the WWTP site.¹¹ As shown in Figure 1-9, the eastern border of the WWTP is from 440 to 870 feet from residential areas while the northern border is about 200 feet to the closest residential area.

11. Other Approvals from Public Agencies

- Authority to Construct and Permit to Operate – Bay Area Air Quality Management District
- Possible permit from ACWD for installation of dewatering wells, exploratory holes and other excavations pursuant to Ordinance No. 2010-01



Source: Scheidegger & Associates, October 2020

Figure 1-9. Land Use Characteristics

- SWRCB, Division of Financial assistance – funding through the CWSRF loan program.
- EPA – funding through the WIFIA Program
- Building permit for campus building from City of Union City
- Tree permit for existing tree removal and replacement from City of Union City

12. Consultation with Native American Tribes

USD has not received any notification requests from local Native American tribes for consultation pursuant to Public resources Code Section 20181.3.1, subd. (b). However, local Native American contacts were consulted during preparation of the recent cultural resource assessment for the USD Emergency Outfall Improvements Project.¹² The consultation recognized the entire WWTP site as the Area of Potential Effects and specifically identified USD's Outfall Improvements Project, Digester 7 Project, and the Standby Power Generation System Upgrade Project. This IS/MND continues the recognition of the WWTP as an Area of Potential Effects.

13. Environmental Factors Potentially Affected:

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture & Forest Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology / Soils |
| <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology / Water Quality |
| <input type="checkbox"/> Land Use / Planning | <input type="checkbox"/> Mineral Resources | <input checked="" type="checkbox"/> Noise |
| <input type="checkbox"/> Population / Housing | <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Wildfire | <input type="checkbox"/> Transportation | <input type="checkbox"/> Utilities/Service Systems |
| <input type="checkbox"/> Energy | <input type="checkbox"/> Tribal Cultural Resources | <input type="checkbox"/> Mandatory Findings of Significance |

Chapter 2

DETERMINATION

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 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 (1) 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.



Ric Pipkin
Enhanced Treatment and Site Upgrade Program Manager

March 3, 2021
Date

Chapter 3

DISCUSSION OF ENVIRONMENTAL CHECKLIST

A discussion of the environmental checklist is included below. In general, the format followed includes a discussion of the setting and an impact analysis of the proposed Project, Phase 1A Aeration Basin (AB) Improvements which may be referred to as the "Phase 1A-AB Improvements Project" or "AB Improvements Project," as well as remaining phases (projects) of the Enhanced Treatment and Site Upgrade Program (ETSU) Phase 1 Program ("ETSU Phase 1 Program" or "Phase 1 Program"). As discussed in Chapter 1, remaining phases include Phase 1A-Campus Building, Phase 1B-Secondary Clarifiers and Effluent Facilities, and Phase 1C-Plant Equalization Storage. Potential cumulative impacts are discussed as appropriate. In some instances, due to the nature of the resource category being addressed, the analysis refers only to the Phase 1 Program and not individual projects. In such event, the analysis is intended to include the Phase 1A-AB Improvements Project.

In some resource categories, control measures are identified to minimize potential impacts. Control measures are procedures that shall be incorporated into the Contract Documents on any Phase 1 Program project unless otherwise noted. Control measures are known to further reduce the potential for impacts based on regulatory agency requirements, standards in the industry, and construction/operating experience. Reference and information resources for the checklist are included in Chapter 4. As appropriate, Initial Study (IS) mitigation measures are included to reduce impacts to less than significant levels. The Mitigation Monitoring and Reporting Plan is included in Appendix C.

A. AESTHETICS

SETTING

The Union Sanitary District (USD) ETSU Phase 1 Program is located within USD's Alvarado Wastewater Treatment Plant (WWTP). As shown on Figure 1-10, immediate surrounding land uses include the Eden Landing Ecological Reserve, the Old Alameda Creek Channel, light industrial use, residential, and open space. The closest residential land uses are located about 200 to 1,300 feet to the north and east. A potential future temple is located about 200 feet from the new Campus Building.

IMPACT ANALYSIS

Control Measures Incorporated by USD

- A1. Throughout the period of demolition and construction, the Contractor shall keep the work site free and clean of all rubbish and debris, and shall promptly remove from the site, all unused and rejected materials, surplus earth, concrete, plaster, and debris.

- A2. Upon completion of the work, and prior to final acceptance, the Contractor shall remove from the vicinity of the work all plant, surplus material, and equipment belonging to the contractor or used under the contractor's direction during construction.

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
A. AESTHETICS						
Except as provided in Public Resources Code Section 21099, would the Project:						
1) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
2) Substantially damage scenic resources, including, but not limited to, trees, rock, outcroppings, and historic buildings within a state or County scenic highway or County-designated scenic road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
3) Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16
4) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16

No Impacts: Criteria A1, A2

The ETSU Phase 1 Program will be constructed within the existing WWTP site which is not near any scenic vista or resource such as a historic building or scenic highway or road. The WWTP site is adjacent to the Eden Landing Ecological Reserve but views of the reserve from the east are blocked by existing structures and mature tree growth. Therefore, the Phase 1 Program will not affect a scenic vista or other scenic resource (Criteria A1 and A2).

Less than Significant Impacts: Criteria A3, A4

Visual Degradation: Criterion A3. The Phase 1 Program represents modifications to the WWTP which is zoned as Civic Facility in the Union City Zoning Maps.² As such, the Phase 1 Program does not conflict with zoning or other regulations governing scenic quality. As shown in Figure 1-9, the ETSU Phase 1 Program occupies the eastern portion of the WWTP site. During the approximate 6-year period when construction work will occur, some heavy equipment will occupy the Project site. Views of the construction areas from the large residential area to the east will be largely obscured by walls and mature landscaping (Figure 3-1). USD frequently has ongoing construction projects at the WWTP, and the Contract Documents will require the Contractor to use best management practices (BMPs) that address daily housekeeping and final site cleanup (Control Measures A1 and A2).

Much of the new facility development associated with the ETSU Phase 1 Program can be viewed as infill development where either improvements are made to existing structures or new facilities are sited within limited land areas and integrated into the visual mosaic of the WWTP. Additionally, some new facilities are substantially below grade with limited surface exposure, thus minimizing any visual disruption.

Major new facilities associated with the ETSU Phase 1 Program include AB 8 (Phase 1A), Campus Building (Phase 1A), and the new secondary clarifiers (Phase 1B). Other Program facilities offer little potential for aesthetic impact. AB 8 and the new clarifiers, however, will be substantially below grade and will resemble the existing units at the WWTP. These new facilities will be seen as an extension of plant facilities and will not be visually distinguishable from the other plant facilities.

The existing two-story administration building will be demolished to make room for the clarifiers (Phase 1B) and the new campus-style building will be constructed just to the north. Thus, the visual profile of the WWTP will be extended to the north but will not change substantially. As discussed in Chapter 1, the new 65,000 square foot campus building will be similar in size and height to the existing administration building with appropriate architectural features and landscaping. Figure 3-2 shows a rendering of the new building. Landscaping will be appropriate for the region and include drought-tolerant species. An existing privacy wall will also be maintained along the northern and eastern boundaries of the campus building site (Figure 1-5).

Construction of other new Phase 1 buildings and structures will utilize masonry or concrete construction to conform with the existing buildings on site. Various architectural mechanisms will be used to accomplish this, including maintaining the natural qualities of the materials being used on exterior surfaces, use of split-ribbed and smooth faced architectural concrete masonry, organization of openings within the elevations to compliment the overall proportions of the buildings, and use of prefinished aluminum copies at the top of elevations with parapets and low slope roofing.



Eastern Boundary of the WWTP



Western Boundary of Residential Area

Source: Scheidegger & Associates, November 2020

Figure 3-1. Shielding of the WWTP to the East



Source: Siegel & Strain Architects, February, 2021

Figure 3-2. Rendering of New Campus Building

Design and construction of the new campus building and other Phase 1 buildings and structures will employ a variety of architectural mechanisms to harmonize with the existing WWTP facilities. Additional measures to reduce aesthetic impacts include integration of ETSU Phase 1 Program facilities into the existing WWTP footprint, the absence of visually intrusive above-ground facilities, and the screening afforded by existing walls and vegetation. Neither the Phase 1A-AB Improvements Project or other ETSU Phase 1 Program projects will substantially degrade the existing visual character or quality of the WWTP site or its surroundings and the impact, both individually and cumulatively, is less than significant.

Light or Glare: Criterion A4. The proposed ETSU Phase 1 Program represents a potential enlargement of the existing lighting footprint of the WWTP. Each phase of the ETSU Phase 1 Program will be equipped with appropriate lighting consistent with requirements of the California Occupational Health and Safety Administration (Cal/OSHA). Lighting will be light-emitting diodes (LED) light fixtures and poles with downlighting only. Lighting will provide illumination of the plant grounds for the safety of plant personnel and site security. The lighting does not represent a new source of substantial light or glare, and will have a less than significant impact on nighttime views in the area.

Mitigation Measures

None required.

B. AGRICULTURE AND FOREST RESOURCES

IMPACT ANALYSIS

Control Measures Incorporated by USD

None

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
B. <u>AGRICULTURE AND FOREST RESOURCES</u> Would the Project: 1) 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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
the California Resources Agency, to non-agricultural use?						
2) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2
3) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined in Public Resources Code section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16, 17
4) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16, 17
5) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16

No Impacts: Criteria B1-B5

The ETSU Phase 1 Program will be constructed within the WWTP. The WWTP area is classified as Other Land in the California Farmland Mapping and Monitoring Program¹⁷ and designated as Civic Facility in Union City's General Plan and zoning map.^{1,2} Further, there is no forest land in the vicinity of the WWTP. Therefore, Criteria B1 through B5 are not relevant to the ETSU Phase 1 Program and no impact would occur as a result of the Phase 1 Program. Accordingly, pursuant to California Environmental Quality Act (CEQA-Plus) requirements, the ETSU Phase 1 Program would have no impact relative to the Federal Farmland Protection Policy Act.

Mitigation Measures

None required.

C. AIR QUALITY

The proposed ETSU Phase 1 Program is located at the Alvarado WWTP in Union City within the southern portion of Alameda County, and part of the nine-county San Francisco Bay Area Air Basin (Air Basin). The local air quality regulatory agency responsible for the Air Basin is the Bay Area Air Quality Management District (BAAQMD).

SETTING

Criteria Air Pollutants

The Federal and California Clean Air Acts (CAAs) have established ambient air quality standards for common pollutants. The ambient air quality standards are intended to protect human health and welfare. At the federal level, national ambient air quality standards (NAAQS) have been established for carbon monoxide (CO), ozone (O₃), nitrogen dioxide (NO₂), respirable particulate matter with a diameter less than 10 microns (PM₁₀), fine particulate matter with a diameter less than 2.5 microns (PM_{2.5}), sulfur dioxide (SO₂), and lead. California has adopted ambient air quality standards (CAAQS) which are, in general, more stringent than the NAAQS, and include other pollutants not regulated at the federal level (i.e., sulfates, hydrogen sulfide (H₂S), and vinyl chloride). Pollutants for which ambient air quality standards have been established are called “criteria pollutants.” National and state ambient air quality standards are shown in Table 3-1.

The BAAQMD has been delegated the authority under the Federal and California CAAs to implement measures to protect the air quality within its jurisdiction. Ambient concentrations of criteria pollutants are monitored at many monitoring stations in the Air Basin by the BAAQMD. The San Jose station is the most geographically similar and is the closest station to the Project site that monitors six of the criteria pollutants (all but lead). Table 3-1 includes a summary of the monitored maximum concentrations and the number of occurrences of exceedances of the NAAQS/CAAQS at the San Jose site for the three-year period from 2017 through 2019.

Table 3-1 shows that over the last three years the following standards were exceeded:

- O₃: 1-hour CAAQS and 8-hour CAAQS and NAAQS
- PM₁₀: 24-hour and annual CAAQS
- PM_{2.5}: 24-hour NAAQS and annual CAAQS (note, the annual PM_{2.5} NAAQS is only exceeded if the three year average of the annual averages is over the 12.0 parts per million (ppm) standard)

Toxic Air Contaminants

In addition to criteria air pollutants, there is another group of substances found in ambient air referred to as Toxic Air Contaminants (TACs). These contaminants tend to be localized and are found in relatively low concentrations in ambient air. However, they can result in adverse health effects. Sources of TACs include industrial processes such as petroleum refining and manufacturing, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. One of the TACs of greatest concern in California is diesel particulate matter (DPM), which results from using diesel fuel in construction equipment, trucks, engines, etc. TAC emissions are regulated at the local, state, and federal level.

Table 3-1: California and National Ambient Air Quality Standards and Summary of Measured Air Quality Exceedances in the Project Area (2017 – 2019)

Pollutant/ Averaging Period	Primary Standard		Year	Maximum Concentration ^a	Days Exceeding State/National Standard
	State	National			
Ozone 1-hour	0.09 ppm	none	2017 2018 2019	0.121 0.078 0.095	3/0 0/0 1/0
Ozone 8-hour	0.070 ppm	0.070 ppm	2017 2018 2019	0.098 0.061 0.081	4/4 0/0 2/2
Carbon Monoxide 1-hour	20 ppm	35 ppm	2017 2018 2019	2.1 2.5 1.7	0/0 0/0 0/0
Carbon Monoxide 8-hour	9.0 ppm	9 ppm	2017 2018 2019	1.8 2.1 1.3	0/0 0/0 0/0
Nitrogen Dioxide 1-hour	0.18 ppm	0.100 ppm	2017 2018 2019	0.068 0.086 0.060	0/0 0/0 0/0
Nitrogen Dioxide Annual	0.030 ppm	0.053 ppm	2017 2018 2019	0.012 0.013 0.011	N/A ^b
Sulfur Dioxide 1-hour	None	0.075 ppm	2017 2018 2019	0.0036 0.0069 0.0145	0/0 0/0 0/0
Sulfur Dioxide 24-hour	0.04 ppm	none	2017 2018 2019	0.0011 0.0011 0.0015	0/0 0/0 0/0
Respirable Particulate Matter (PM ₁₀) 24-hour	50 µg/m ³	150 µg/m ³	2017 2018 2019	70 122 77	6/0 4/0 4/0
Respirable Particulate Matter (PM ₁₀) Annual	20 µg/m ³	none	2017 2018 2019	21.6 23.1 19.2	N/A ^b
Fine Particulate Matter (PM _{2.5}) 24-hour	None	35 µg/m ³	2017 2018 2019	49.7 133.9 27.6	0/6 0/15 0/0
Fine Particulate Matter (PM _{2.5}) Annual	12 µg/m ³	12.0 µg/m ³	2017 2018 2019	9.5 12.8 9.1	N/A ^b

Source: BAAQMD, see <http://www.baaqmd.gov/about-air-quality/air-quality-summaries>

Notes: ppm = parts per million, µg/m³ = micrograms per cubic meter, ND = No data available, NA = Not applicable

^a All pollutant concentrations were measured at the San Jose monitoring station

^b Data not reported

Regulatory and Planning Framework

Federal, state, and regional agencies regulate air quality in the Air Basin. At the federal level, the EPA is responsible for overseeing implementation of the Federal CAA. The California Air Resources Board (CARB) is the State agency that regulates mobile sources throughout the state and oversees implementation of the state air quality laws and regulations, including the California CAA. The primary agency that regulates air quality in the Project area is the BAAQMD. The BAAQMD has permit authority over stationary sources, acts as the primary reviewing agency for environmental documents, and develops regulations that must be consistent with federal and state air quality laws and regulations.

Federal Air Quality Regulations. The federal CAA requires CARB, based on air quality monitoring data, to designate portions of the state where the NAAQS are not met as “nonattainment areas.” Because of the differences between the national and state ambient air quality standards, the designation of nonattainment areas is different under the federal and state legislation. Areas that meet the air quality standards are considered to be in attainment of the standards. Areas where there is no monitoring data available or insufficient data to classify are considered unclassified, which for regulatory purposes is treated as an attainment area.

The Bay Area has exceedances of the NAAQS for O₃ and PM_{2.5}. The EPA has classified the region as marginal nonattainment for 8-hour O₃ NAAQS. In October 2009, the EPA designated the Bay Area as nonattainment for 24-hour PM_{2.5} NAAQS. The Bay Area is considered as attainment or unclassifiable with respect to the NAAQS for all other criteria pollutants. The EPA requires states that have areas that are not in compliance with the national standards to prepare and submit air quality plans showing how the standards will be met. If the states cannot show how the standards will be met, then they must show progress toward meeting the standards. These plans are referred to as the State Implementation Plan (SIP). On January 9, 2013, the EPA issued a final rule to determine that the San Francisco Bay Area has attained the 24-hour PM_{2.5} NAAQS. This action suspends federal SIP planning requirements for the Bay Area with respect to PM_{2.5}. However, the region remains designated as nonattainment until the BAAQMD submits a redesignation request.¹⁸

Projects seeking federal funding must comply with the Federal CAA conformity requirements. As part of the SIP, California has incorporated the Federal General Conformity Rule. The EPA’s Conformity Rule, as promulgated in 40 CFR Part 93 Subpart B, and 40 CFR Part 51, Subpart W, implements the conformity requirements of Section 176(c) of the 1990 Amendments to the Federal CAA. Conformity to the SIP is defined in the Federal CAA as requiring all federal agencies to ensure that any agency activity conforms with an approved SIP in nonattainment or maintenance areas. Compliance with the SIP assists in eliminating or reducing the number of violations of the national ambient air quality standards, which expedites attainment of the standards. The General Conformity Rule requires that the total of direct and indirect emissions of nonattainment or maintenance area criteria pollutants, including ozone precursors (reactive organic gases and nitrogen oxides) and PM_{2.5} precursors (SO₂, NO₂, and reactive organic compounds (ROG) or ammonia) be considered in determining conformity.

If a federal action, such as Clean Water State Revolving Fund (CWSRF)-funded projects, is to take place in a nonattainment or maintenance area, it is subject to a General Conformity evaluation. This determination can take one of three forms: (1) If the action meets certain criteria, it may be specifically exempted, regardless of whether the action would emit pollutants of concern; (2) if the action is determined to emit pollutants below specified de minimis thresholds and the potential emission levels are not regionally significant (less than 10 percent of the region's emissions for a particular pollutant), the action can be assumed to conform with the SIP; and (3) for actions that do not fall under either of these two categories, a complete conformity determination must be made. Specifics of this process are listed in 40 CFR 93, Subpart B. For CWSRF-funded projects, a General Conformity analysis applies only to projects in a federal nonattainment area or an attainment area subject to a maintenance plan and applies to those pollutants that the area has been designated as nonattainment or maintenance. As described above, the Bay Area has been designated nonattainment for O₃ and PM_{2.5}.

California Air Quality Regulations. The California CAA outlines a program for areas in the state to attain the CAAQS by the earliest practical date. The California CAA sets more stringent air quality standards for most of the pollutants covered under national standards, and additionally regulates other pollutants. If an area does not meet the CAAQS, the CARB designates the area as a nonattainment area. With respect to the state air quality standards, the Bay Area is a State nonattainment area for ozone and particulate matter (PM₁₀ and PM_{2.5}), and either attainment or unclassified for other pollutants. The California CAA requires local air pollution control districts to prepare air quality attainment plans for pollutants, except for particulate matter, that are not in attainment with the state standards. These plans must provide for district-wide emission reductions of five percent per year averaged over consecutive three-year periods or if not, provide for adoption of "all feasible measures on an expeditious schedule."

Regional Air Quality Regulations and Planning. Air quality in the Project region is regulated by the BAAQMD. The BAAQMD regulates stationary sources (with respect to federal, state, and local regulations), monitors regional air pollutant levels (including measurement of toxic air contaminants), develops air quality control strategies, and conducts public awareness programs.

The most recent air quality plan developed by the BAAQMD is the 2017 Clean Air Plan (CAP) that was adopted by BAAQMD in April 2017. The 2017 CAP provides a regional strategy to protect public health and the climate. To protect public health, the plan describes how the Air District will continue making progress toward attaining all state and federal air quality standards and eliminating exposure to air pollution among Bay Area communities. The 2017 Plan includes a wide range of control measures designed to decrease emissions of the air pollutants that are most harmful, such as particulate matter, ozone, and toxic air contaminants; and to decrease emissions of carbon dioxide by reducing fossil fuel combustion. The 2017 Plan represents the Bay Area's most recent assessment of the region's strategy to attain the State and national ozone and PM_{2.5} standards.

The BAAQMD has also developed CEQA Air Quality Guidelines that establish significance thresholds for evaluating new projects and provide guidance for evaluating air quality impacts of

projects and plans. The Air Quality Guidelines provide procedures and significance thresholds for evaluating potential construction and operational-related impacts during the environmental review process consistent with CEQA requirements. The BAAQMD thresholds of significance are designed to establish the level at which BAAQMD believes air pollution emissions would cause significant environmental impacts under CEQA. The BAAQMD's most recent CEQA Air Quality Guidelines were updated in May 2017.¹⁹

IMPACT ANALYSIS

Control Measures Incorporated by USD

The BAAQMD CEQA Guidelines contains the following list of basic construction mitigation measures that are recommended for all projects:

- C1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered as needed to control dust emissions.
- C2. All haul trucks transporting soil, sand, or other loose materials off-site shall be covered.
- C3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- C4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
- C5. All areas to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- C6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- C7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- C8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

The following measure related to facility operation will also be implemented:

- C9. For sources subject to permitting requirements, obtain an Authority to Construct and Permit to Operate from the BAAQMD and comply with permit conditions, imposed by the BAAQMD.^a

Significance Criteria

RESOURCE CATEGORY/ SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
C. AIR QUALITY Would the Project:						
1) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16, 18, 19
2) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16, 18,19, 20
3) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16, 19, 22
4) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16, 19, 21

^a An application for an Authority to Construct permit was submitted to the BAAQMD in February 2021 for alternation of the East and West ABs and their associated odor control systems. It is possible that an emergency generator may be needed for the Phase 1A Campus Building, but the final size of this engine has not yet been determined. Only an internal combustion engine greater than 50 horsepower (hp) would require an air permit. If needed, USD will submit an application for this engine.

No Impacts – Odor Impacts: Criterion C4

The BAAQMD CEQA Air Quality Guidelines¹⁹ includes a significance threshold for odors as “5 confirmed complaints to BAAQMD per year averaged over three years.” A public records request was submitted to the BAAQMD to determine if there have been odor issues related to this WWTP in the past. The response to this request was that there has only been one odor complaint made directly to the BAAQMD in the last five years, and that complaint was in January 2016 (just over five years ago).

The Phase 1A-AB Improvements Project includes the replacement/upgrade of the odor control systems on both the West and East Basins. The replacement of the existing odor scrubbers with activated carbon adsorption is expected to reduce odorous substances. Therefore, for this criterion, the Phase 1A-AB Improvements Project will have no impact, or possibly a beneficial impact. The design of Phases 1B and 1C are not yet completed but like Phase 1A, there is not expected to be an increase in throughput or influent concentration of odorous/odor causing substances, so an odor impact would not be expected. Further, Phase 1B involves upgrades to the secondary clarifiers and effluent facilities and according to EPA²¹, secondary clarifiers have a low potential for the generation of odors since the incoming liquid is aerobic. Similarly, the Phase 1C-Plant Equalization Storage will be enclosed and designed with odor abatement systems if needed, so would also not be expected to have an odor impact. Hence it is concluded that the ETSU Phase 1A-AB-Improvements as well as other Phase 1 projects would have no impact on odors either individually or cumulatively.

Less Than Significant Impact – Air Quality Plan: Criterion C1

The BAAQMD CEQA Guidelines recommend that a project’s consistency with the current CAP be evaluated using the following three criteria:¹⁹

1. The project supports the goals of the CAP;
2. The project includes applicable control measures from the CAP; and
3. The project does not disrupt or hinder implementation of any control measures from the CAP.

If it can be concluded with substantial evidence that a project would be consistent with the above three criteria, then the BAAQMD considers it to be consistent with the air quality plan prepared for the Bay Area.

The primary goals of the 2017 CAP are to attain air quality standards, reduce population exposure to unhealthful air, and protect public health in the Bay Area. The BAAQMD-recommended guidance for determining if a project supports the goals in the current CAP is to compare project-estimated emissions with BAAQMD thresholds of significance. If project emissions would not exceed the thresholds of significance after the application of feasible mitigation measures, the project would be consistent with the goals of the 2017 CAP. As indicated in the following discussion with regard to air quality Criterion 2, the ETSU Phase 1 Program would result in a less

than significant impact related to construction emissions with the implementation of the BAAQMD's applicable recommended fugitive dust control measures, which will be required during construction of the ETSU Phase 1 Program. In addition, operational emissions would not exceed the thresholds. Therefore, the Phase 1 Program would be consistent with the primary goals of the 2017 CAP.

The 2017 CAP contains 85 control measures aimed at reducing air pollution in the Bay Area. Projects that incorporate all feasible air quality plan control measures are considered consistent with the CAP. Two of the stationary source control measures are applicable to operation of wastewater treatment plants: WR1 (Limit Greenhouse Gases [GHGs] from Publicly-Owned Treatment Works [POTWs]) and WR2 (Support Water Conservation). The proposed Phase 1 Program will implement aeration basin improvements and other upgrades to the plant which will enhance the plant's ability to meet future water quality requirements. While both of these measures do not contain specific emissions control strategies, the ETSU Phase 1 Program would be consistent with WRI as there are less than significant operational emissions, as discussed further below under Criterion C2, and would not affect production of recycled water at the Facility. For these reasons, the Phase 1 Program would be consistent with and would not hinder implementation of the 2017 CAP control measures.

Less Than Significant Impact – Air Quality Standards: Criterion C2

The Federal CAA and the California CAA both require the establishment of standards for ambient concentrations of air pollutants, called NAAQS and CAAQS. The Bay Area Air Basin experiences occasional violations of ozone and particulate matter (PM₁₀ and PM_{2.5}) standards. Therefore, the Project area currently is designated as a nonattainment area for exceedance of the state 1-hour and 8-hour ozone standards, the national ozone 8-hour standard, the state respirable particulate matter (PM₁₀) 24-hour and annual average standards, the state fine particulate matter (PM_{2.5}) annual average standard, and the national PM_{2.5} 24-hour standard. The Project area is designated as attainment for all other state and national standards. An analysis was performed to determine if the proposed ETSU Phase 1 Program's emissions during construction and operation would contribute to the existing exceedances of the ambient air quality standards.

Project Construction.

Construction Emissions. Construction activities associated with the Phase 1 Program would involve use of equipment that has exhaust containing ozone precursors (reactive organic gases or ROG, and oxides of nitrogen, or NO_x). On-site and off-site vehicle activity associated with material transport and construction worker commutes would also generate emissions. Emission levels for these activities would vary depending on the number and types of equipment used, duration of use, operation schedules, and the number of construction workers. Criteria pollutant emissions of ROG and NO_x from these emission sources would incrementally add to the regional atmospheric loading of ozone precursors during construction. Particulate matter in the exhaust as well as fugitive dust from ground disturbance would also contribute to regional levels of PM₁₀

and PM_{2.5}. All assumptions and calculations used to estimate the Phase 1 Program-related construction emissions are provided in Appendix D which was prepared by Yorke Engineering.²⁰

The ETSU Phase 1 Program is planned to take place in several subphases, some of which will overlap. A diagram showing the preliminary timing of the approximately 6-year long construction period needed for the four ETSU Phase 1 projects is provided in Figure 3-3. As shown, the construction of the Phase 1A-Campus Building will overlap with the construction of the Phase 1A-AB Improvements. Similarly, construction of the Phase 1A-AB Improvements will overlap with the Phase 1B-Secondary Clarifiers and Effluent Facilities construction. Criteria pollutant emissions were calculated for each of these four ETSU Phase 1 projects, and a detailed discussion of these emissions calculations is provided in Appendix D. The analysis contained in Appendix D indicates that the maximum emissions of nonattainment criteria pollutants (i.e., ozone precursors ROG and NO_x, as well as PM₁₀ and PM_{2.5}) will occur during the overlap of the Phase 1A-AB Improvements and Phase 1A-Campus Building construction. A summary of the results of the maximum construction emissions analyses during this overlap period is provided in Table 3-2.

	2021			2022				2023				2024				2025				2026				2027	
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Phase 1A AB Impr.																									
Phase 1A Campus																									
Phase 1B Clarifiers																									
Phase 1C Storage																									

Source: Hazen and Sawyer, October 2020

Figure 3-3: Preliminary ETSU Phase 1 Program Schedule

Table 3-2: Comparison of Maximum Construction Emissions (Phase 1A Aeration Basin and Campus Overlap) To BAAQMD Significance Thresholds for Nonattainment Pollutants

Criteria Pollutant	Unmitigated Average Daily Emissions (lbs/day)	Mitigated Average Daily Emissions ¹ (lbs/day)	Daily Threshold (lbs/day)	Unmitigated Maximum Annual Emissions (tons/yr)	Mitigated Maximum Annual Emissions ¹ (tons/yr)	Annual Threshold (tons/yr)	Significant?
ROG	5.4	2.6	54	1.0	0.8	10	No
NO _x	35.7	27.0	54	6.5	4.9	10	No
Exhaust PM ₁₀	1.40	0.34	82	0.26	0.06	15	No
Exhaust PM _{2.5}	1.31	0.32	54	0.24	0.06	10	No

Source: Reference 19 (Thresholds), and 20 (Emissions)

¹ The mitigation measure applied is related to health risks and is discussed below under Criterion C3.

As a conservative worst case analysis, neither the Phase 1A-AB Improvements Project or other Phase 1 projects will exceed emission thresholds for nonattainment priority pollutants in Table 3-2 and the impact, both individually and cumulatively, is less than significant.

In addition to exhaust emissions from combustion equipment, emissions of fugitive dust would also be generated by construction activities associated with grading and earth disturbance, travel on paved and unpaved roads, etc. Such emissions could result in a potentially significant impact since the area is nonattainment for PM₁₀ and PM_{2.5}. For fugitive dust emissions, the BAAQMD Guidelines¹⁹ focus on implementation of recommended dust control measures rather than a quantitative comparison of estimated emissions to a significance threshold. For all projects, the BAAQMD recommends the implementation of its Basic Control Mitigation Measures which are included as Control Measures C1-C8 above. These measures would be incorporated into the contract documents for all of the Phase 1 Program projects. Therefore, the Phase 1A-AB Improvements Project and the ETSU Phase 1 Program would not cause violations of the air quality standards due to fugitive dust, either individually or cumulatively, and the impact is less than significant.

Cumulative Construction Impacts. In addition to construction of the ETSU Phase 1 Program, other construction projects are planned at the USD WWTP at the same time. For instance, construction of the proposed Standby Power Project may overlap with the proposed ETSU Phase 1 Program. Based on the Initial Study/Mitigated Negative Declaration (IS/MND) for the Standby Power Project, NO_x emissions during construction for that project were estimated to be 9.2 lbs/day and 1.4 tons/year.¹² Even if these emissions for construction of the Standby Power Project are added to the mitigated ETSU construction emission given in Table 3-2, the total combined NO_x emissions of 36.9 lbs/day and 6.3 tons/year are still below the NO_x threshold of 54 lbs/day and 10 tons/year. The other capital improvement projects (CIPs) that are planned at this facility are listed in Appendix B. The construction of these projects is expected to be less than the Standby Power Project, as well as occur at different times throughout the ETSU Phase 1 Program construction period. If total NO_x emissions from both ETSU Phase 1 Program and Standby Power are 37 lbs/day and 6.3 tons/year, that leaves approximately 17 lbs/day or 3.7 tons per year of emissions from additional projects to keep NO_x emissions below the BAAQMD significance threshold for construction emissions. The other CIPs should remain within this level as they are mostly replacement and rehabilitation projects without large sources of NO_x generating activities. The other nonattainment pollutants would also be expected to be below the thresholds on a cumulative basis. Therefore, cumulatively the impacts from the construction phase of these projects would be considered to be less than significant.

General Conformity During Construction. With respect to the General Conformity requirements, emissions thresholds in the BAAQMD are 50 tons/year of ROG and 100 tons/year of other criteria pollutants. The emissions in Table 3-2 and Appendix D show that emissions will be considerably less than the applicable General Conformity de minimis thresholds and further conformity evaluation is not required. Thus, pursuant to CEQA-Plus requirements the Phase 1A-AB Improvements Project and other ETSU Phase 1 Projects will be compliant with the Federal CAA, both individually and cumulatively.

Project Operation.

Operations Emissions. As explained in Appendix D, operational emissions for the ETSU Phase 1 Program are associated with a new emergency generator in the Campus Building and future additional hauling vehicles which may be necessary due to increased solids removal (which may occur regardless of these projects, but was included to be conservative). The design specification has not been finalized, so an up to 80 hp generator has been analyzed (engines greater than 50 hp would require a permit from the BAAQMD, but a smaller engine may be utilized). Regulations on non-emergency use of engines allow up to 50 hours per year per engine, and there is no limit on emergency use as specified in Title 17 CCR 93115.6(a)(3)(A)(1)(c). Table 3-3 compares the total operational emissions for a new up to 80 hp emergency engine and the additional hauling trips to the BAAQMD significance thresholds. Appendix D provides the assumption used in the emissions calculations. As can be seen, emission levels are well below the thresholds, resulting in a less than significant impact determination.

Table 3-3: Comparison of Maximum Operations Emissions To BAAQMD Significance Thresholds for Nonattainment Pollutants

Criteria Pollutant	Average Daily Emissions (lbs/day)	Daily Threshold (lbs/day)	Maximum Annual Emissions (tons/year)	Annual Threshold (tons/year)	Significant?
ROG	0.03	54	0.005	10	No
NO _x	0.65	54	0.12	10	No
PM ₁₀	0.003	82	0.001	15	No
PM _{2.5}	0.003	54	0.001	10	No

Sources: References 19 (Thresholds) and 20 (Emissions)

Cumulative Operations Impacts. According to the BAAQMD, a project's individual emissions may contribute to existing cumulatively significant adverse air quality impacts. In addition, according to the BAAQMD CEQA Air Quality Guidelines, 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.¹⁹ Alternatively, if a project does not exceed the identified significance thresholds, then the project would not be considered cumulatively considerable and would result in less than significant air quality impacts. Based on the Table 3-3, the ETSU Phase 1 Program would not result in a significant cumulative impact.

General Conformity During Operation. Similar to the construction phase, operational emissions in Table 3-3 are well below the conformity thresholds given above for construction. Therefore, pursuant to CEQA-Plus requirements, the Phase 1A-AB Improvements Project and other projects in the ETSU Phase 1 Program will be in compliance with the Federal CAA, both individually and cumulatively.

Less Than Significant With Mitigation – Substantial Pollutant Exposure: Criterion C3

Based on the discussion above related to Criterion C2, it can be concluded that the Projects' construction and operation emissions of criteria pollutants from the AB Improvements Project and ETSU Phase 1 Program would be unlikely to expose sensitive receptors to substantial criteria pollutant concentrations. Therefore, the following Criterion C3 discussion addresses the potential for exposure of sensitive receptors to TAC emissions.

Per the BAAQMD CEQA Guidelines,¹⁹ sensitive receptors are facilities or land uses such as schools, hospitals and residential areas that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. The BAAQMD has identified a distance of 1,000 feet from the source to the closest sensitive receptor locations within which community impacts are possible. The nearest existing off-site sensitive residential receptors are located about 600 feet to the north and east from the center of the construction area within USD WWTP site. There are no schools or hospitals within 1,000 feet of the site.

Construction. Construction activities associated with the ETSU Phase 1 Program would result in the generation of exhaust emissions that contain air pollutants, including particulate matter (PM₁₀ and PM_{2.5}), the majority of which would be DPM. As discussed on CARB's website under "Overview: Diesel Exhaust & Health", DPM is used as a surrogate measure of exposure for the mix of chemicals that make up diesel exhaust as a whole.^{22a} DPM is a carcinogen, so the effects of DPM are more pronounced if the exposure is over long periods of time. Although other TACs are emitted from construction equipment and vehicles, TACs other-than-DPM from construction equipment rarely contribute much risk to health in comparison to DPM. Therefore, only DPM is discussed in this analysis.

Because the construction is expected to occur over more than five years, a health risk screening analysis was prepared. As discussed under Criterion C2 above, PM₁₀ emissions were calculated as described in Appendix D and the PM₁₀ exhaust emissions were assumed to all be DPM. Initially, DPM emissions associated with construction during the maximum overlap scenario of construction of the projects was estimated to be an average of 1.4 lbs/day during this period.

The BAAQMD guidance document "Recommended Methods for Screening and Modeling Local Risks and Hazards" (2012)^{22b} was used to provide an estimation of the potential health risk impacts from construction. This screening tool provides health risks based on an assumed 30 year exposure, based on the current guidance for health risk assessments. When the unmitigated emissions of 1.4 lbs/day of DPM was input into this BAAQMD screening tool, the increased risk of cancer output was 177.2 in a million. However, because the ETSU Phase 1 construction period will not occur for 30 years, the result was adjusted to reflect 5.75 years out of 30 (i.e., by multiplying by 5.75/30), which reduces the projected cancer risk to 34 in a million. The significance threshold for health risks in the BAAQMD CEQA Guideline is 10 in a million excess cancer cases.

Since 34 in a million is greater than 10 in a million, mitigation measures are necessary to reduce impacts to a less than significant level. Rather than assuming an older mix of construction equipment, emissions were calculated assuming that 80% of horsepower hours for onsite construction equipment would meet the CARB Tier 4 interim standards.^{22c} Under this scenario, the DPM emissions were reduced to 0.34 lbs/day during the maximum overlap period for Phase 1. With this emission rate, the BAAQMD screening tool estimated risks of 43 in a million, which when adjusted for the number of years (5.75/30), dropped the cancer risk to 8.2 in a million, which is below 10 in a million. This result is expected to still be conservative since this emission rate is based on overlap of two activities (Phase 1A-AB Improvements Project and Campus Building), which will not be the case throughout the entire 5.75 year Phase 1 construction period. For instance, Phase 1C has lower DPM (PM₁₀) emissions than Phases 1A or 1B (See Appendix D). Also, the closest receptor at about 600 feet will help to dissipate the TAC concentrations. Therefore, with mitigation as set forth below applied, the impact of exposure of sensitive receptors to TAC emissions from construction can be considered less than significant.

Operation. The new up to 80 hp emergency diesel engine would be an operational emissions source that will generate TACs. Diesel-fueled haul trucks would also emit DPM. For the purposes of this analysis, 330 feet from source to receptor was input into the BAAQMD risk calculator tool. This distance was determined using the approximate engine location to the nearest residence. As shown in Table 3-3, PM₁₀ emissions from these sources were estimated to be 0.003 lbs/day. When input into the BAAQMD risk screening tool, this DPM emission rate provides an estimate of 0.9 in a million excess cancer cases, without an adjustment since operations would be a long-term exposure. The result of 0.9 in a million cancer risk is also below the 10 in a million threshold. Hence, exposure of sensitive receptors to substantial TAC concentrations is not expected and the impact of exposure to sensitive receptors during operations is less than significant.

Mitigation Measure

The health risk screening was initially done assuming that the onsite construction equipment would have a mix of Tier 3 and Tier 2 engines from the California Emissions Estimator Model® (CalEEMod) default settings for the designated construction year, but the potential cancer risk predicted for that level of DPM was over the BAAQMD significance threshold of 10 in a million excess cancer cases. Therefore, the analyses were redone assuming that 80% of the onsite construction equipment, by horsepower hour, would meet CARB's Tier 4 interim standards (per CARB Tier 4 Off-Road Compression-Ignition Engines regulation, December 2012)^{22c} to obtain the mitigated results discussed above. Based on this analysis, the following mitigation measure shall be implemented for each Phase 1 project.

Mitigation Measure AQ-1: Onsite construction equipment engines for Phase 1 projects shall meet a minimum of Tier 4 interim emissions standards provided that up to 20% of the onsite construction equipment (based on horsepower-hour can be Tier 2 or Tier 3, when equipment meeting Tier 4 interim standards is not available).

D. BIOLOGICAL RESOURCES

SETTING

A Biological Resource Assessment (BRA) was prepared recently in January 2019 for the USD Standby Power Generation System Upgrade Project and is included in Appendix E.²³ This BRA is directly relevant to the proposed ETSU Phase 1 Program because the area of potential effects (APE) was defined as the Alvarado WWTP. This BRA forms the basis for the assessment of on-site Phase 1 Program impacts. Additionally, in order to form a basis for the discussion of off-site impacts to Old Alameda Creek and special-status species to the west of the WWTP in the Eden Landing Ecological Reserve, an additional BRA was prepared to address off-site impacts and is included as Appendix F.²⁴

Existing Conditions

WWTP. The WWTP provides very little value in terms of possible wildlife habitat given its developed condition, absence of vegetative cover, and intensity of human disturbance. No indications of occupation by western burrowing owl, a common special-status species often encountered in disturbed environments, or other raptors were observed anywhere within the plant site during the field reconnaissance surveys, and no evidence of nesting by any bird species in any of the trees in the vicinity of the WWTP were observed.

Old Alameda Creek Flood Control Channel. The Old Alameda Creek Flood Control Channel borders the WWTP to the northwest (Figure 1-9). The WWTP wet weather outfall discharge location shown on Figure 1-2 is located about 3 miles upstream of Lower San Francisco Bay. A tide gate structure is located in the creek about 0.4 miles upstream of the outfall and is used to prevent flooding in Union City when a heavy storm coincides with a high-tide condition.

On October 14, 2020, the Regional Water Quality Board (RWQCB) adopted Order No. R2-2020-0027 for National Pollutant Discharge Elimination System (NPDES) Permit No. CA0038733 which regulates the WWTP wet weather discharge to the creek.⁷

As discussed in Chapter 1, recognizing the Hayward Marsh would no longer be accepting secondary treated wastewater, the RWQCB had authorized expanded use of the outfall by USD for wet weather management. Pursuant to the order cited above, the District can discharge to the Old Alameda Creek approximately three times per wet season, on average. Upon completion of the ETSU Phase 1 Program, which will result in significant improvements to WWTP effluent water quality, the District is authorized to discharge up to 12 times per wet season, on average.

Eden Landing Ecological Reserve. The Eden Landing Ecological Reserve dominates land use to the west of the WWTP. The Reserve is about 6,400 acres of restored salt ponds, adjacent diked marshes, and transitional areas to uplands that are managed for resident and migratory waterbirds.

Special-Status Species

Special-status species are plant and animal wildlife species that are protected under CEQA and state and federal environmental laws.

WWTP. Suitable habitat for special-status animal species is absent from the WWTP site. This includes absence of suitable aquatic habitat for fish, absence of coastal salt marsh for many of the mammal and bird species known from the Baylands, and suitable nesting habitat for special-status bird species as well as more common bird species protected under the federal Migratory Bird Treaty Act.

Suitable habitat for special-status plant species known from the surrounding area is also absent from the WWTP site, and none are expected to occur due to past development and ongoing disturbance observed during the field reconnaissance surveys. The entire WWTP site has been completely disturbed by past grading, installation of wastewater treatment facilities, roadways and other improvements, and ongoing maintenance and other disturbance, which precludes the possibility of presence of any special-status plant species in the plant area.

Eden Landing Ecological Reserve. As indicated in Appendix F, the only special-status species within the Eden Landing Ecological Reserve with the potential to be affected by the ETSU Phase 1 Program include the California Ridgway's (clapper) rail, and the California black rail.

California Ridgway's (clapper) rail (Rallus obsoletus obsoletus). Federal-listed Endangered, State-listed Endangered, CDFW Fully Protected Species.

The California Ridgway's rail (CRR), formerly known as California clapper rail (*R. longirostris obsoletus*), is the resident Ridgway's/clapper rail subspecies of northern and central California. Although more widespread in the past, it is currently restricted to the San Francisco Bay estuary. The CRR occurs only within salt and brackish marshes. Important CRR habitat components are: (1) well-developed tidal sloughs and secondary channels; (2) beds of cordgrass (*Spartina spp.*) in the lower marsh zone; (3) dense salt marsh vegetation for cover, nest sites, and brooding areas; (4) intertidal mudflats, gradually sloping banks of tidal channels, and cordgrass beds for foraging; (5) abundant invertebrate food resources; and (6) transitional vegetation at the marsh edge to serve as a refuge during high tides. In south and central San Francisco Bay and along the perimeter of San Pablo Bay, CRR typically inhabits salt marshes dominated by pickleweed and cordgrass. Nesting occurs from March through July, with peak activity in late April to late May. CRR nests, constructed of wetland vegetation and platform-shaped, are placed near the ground in clumps of dense vegetation, usually in the lower marsh zone near small tidal channels. This species has potential to occur in tidal marsh habitat outside areas where construction will occur.

California black rail (Laterallus jamaicensis coturniculus), State-listed threatened, California Department of Fish and Wildlife (CDFW) fully protected species.

The California black rail is the resident black rail subspecies that occurs in California coastal salt and brackish marshes from Bodega Bay to Morrow Bay, with additional populations known from freshwater marshes near or in the northern Sierra Nevada foothills. Important habitat elements for this species within the San Francisco Bay estuary are: (1) emergent marsh dominated by pickleweed (*Salicornia sp.*), marsh gumplant (*Grindella stricta*), bullrush (*Scirpus maritimus*), rushes (*Juncus spp.*), and/or cattails (*Typha spp.*); (2) high density of vegetation below four inches in height; (3) high marsh elevation with transitional upland vegetation; (4) large total area of contiguous marsh; (5) proximity to a major water source; and, (6) isolation from disturbance. This species feeds primarily on invertebrates. Black rails are extremely secretive and very difficult to glimpse or flush; identification typically relies on voice. Nests are placed on the ground in dense wetland vegetation. Nesting occurs from March through July. There are documented occurrences of California black rail near the Project area and suitable habitat for the species is present in the tidal marshes.

Jurisdictional Waters

Based on a review of the National Wetland Inventory mapping and the observations made during the field reconnaissance surveys, there are no potential jurisdictional wetlands or regulated unvegetated "other waters of the U.S." within the WWTP site. Such areas exist to the west of the WWTP but no construction activities will occur there.

IMPACT ANALYSIS

Control Measures Incorporated by USD

- D1. Comply with all provisions of RWQCB Order No. R2-2020-0027 and NPDES Permit No. CA0038733 which govern WWTP wet weather flow management and discharge to Old Alameda Creek.
- D2. Obtain a Tree Permit from the City of Union City if necessary for removal of trees of regulated size and abide by permit conditions.

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Information Sources
D. <u>BIOLOGICAL RESOURCES</u>					
Would the Project:					
1) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Services?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16, 18, 19
2) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16, 18, 19
3) Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16, 18, 19
4) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16
5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16, 24 ^a
6) Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	16

No Impacts: Criterion D6

The proposed ETSU Phase 1 Program would have no impacts relative to Union City General Plan policies regarding biological resources. The ETSU Phase 1 Program is not located within a habitat conservation plan area, nor does it conflict with any other local, regional, or state conservation plan (Criterion D6). Wet weather discharge to Old Alameda Creek would be to an area mapped as critical habitat for green sturgeon, although this species is unlikely to occur in the ETSU Phase 1 Program area. The green sturgeon is a federally threatened and California Department of Fish and Wildlife Species of Special Concern. Such a discharge, however, would be during wet weather events and regulated by RWQCB Order No. R2-2020-0027 and NPDES Permit No. CA0038733.

Control Measure D1 provides that USD will comply with all provisions of the RWQCB order. Thus, pursuant to CEQA-Plus requirements, no essential fish habitat would be affected and the ETSU Phase 1 Program is consistent with the Magnuson-Stevens Fishery Conservation and Management Act. In addition, because California does not have a Coastal Barriers Resource System, no impacts relative to the Coastal Barriers Resource Act will occur, and because the Phase 1 Program will not impact any bodies of water, no impacts to the Fish and Wildlife Coordination Act nor the Marine Mammals Protection Act will occur.

Less than Significant Impact: Criteria D2, D3, D5

Sensitive National Communities: Criteria D2, D3. Criteria D2 and D3 address potential impacts to sensitive natural communities, including wetlands and riparian habitat. The proposed Phase 1 Program has no activities which involve construction outside the WWTP in sensitive natural areas. Therefore, no impact relative to construction will occur. As discussed earlier in this section, increased wet weather discharge will occur during the next few years and more after the Phase 1 Program construction is complete. The increase in the quantity of freshwater released into the tidally influenced Alameda Creek could affect habitat in the creek or surrounding areas. Alameda Creek has connectivity to surrounding tidal areas, but itself is a conveyance of freshwater that runs off from portions of the watersheds. The areas surrounding the creek vary in their exposure to tidal influence, though biological communities are best classified as tidal marsh in this area.

The plant's wet weather discharge, however, is regulated by RWQCB Order No. R2-2020-0027 and NPDES Permit No. CA0038733 which included a thorough evaluation of water quality and biological issues. The RWQCB order recognizes the majority of this increased discharge will occur during the winter rainy season, when salinity is naturally reduced because of runoff into the creek from its surrounding watershed. Due to the relatively modest increase in freshwater discharge, primarily at a time when salinity would already be low, it is expected that the discharged, treated freshwater associated with the Phase 1 Program will have a less than significant impact on the habitat in Alameda Creek and surrounding areas. Thus, pursuant to CEQA-Plus requirements, the ETSU Phase 1 Program is consistent with Executive Order 11990-Protection of Wetlands.

Tree Removal: Criterion D5. Section 12.16.170, Tree Conservation of the Union City Municipal Code addresses the protection of trees of regulated size. As defined by code, protected trees include all trees which have a twelve-inch or greater circumference of any trunk and are located on commercial, office or industrial property. The City's code requires a Tree Permit for the removal of any tree of regulated size.

There will be removal of ornamental trees during construction around the existing administration building and along the eastern fence adjacent to the existing secondary clarifiers. This will occur in Phase 1A-Campus Building and Phase 1B-Secondary Clarifiers and Effluent Facility. These are smaller growth trees and their removal will likely not trigger the need for a permit. A permit will be obtained of trees exceed 12 inches in diameter (Control Measure D2). Trees along the eastern fence line will be replaced in-kind and trees removed around the existing administration building will be replaced through the landscaping plan for the new campus building (see Figure 3.2 for a

rendering). Palm trees at the existing administration building, which are greater than 12 inches in diameter, will be relocated and integrated into the campus building landscaping plan. Thus, neither the Phase 1-AB Improvements Project nor other Phase 1 Program projects will conflict with the Tree Conservation Ordinance and the impact is less than significant.

Less than Significant Impact with Mitigation Incorporated: Criteria D1, D4

Criteria D1 and D4 address effects on special-status species and on the movement of any native resident or migratory wildlife species. Because the ETSU Phase 1 Program construction activities are limited to the WWTP, there would be no direct construction related impacts to plant or animal species or sensitive habitats. Substantial increases in operational noise levels could have effects on off site sensitive species, but such increases with the Phase 1 Program would be negligible and no effects would occur.

Construction Related Noise and Vibration. The Alvarado WWTP has been a consistent source of construction noise and vibration over the years. Construction of Digester 7 along the western plant border is proceeding with completion scheduled for the summer of 2021.

Due to past development and absence of suitable habitat, no special-status species are believed to occur within the WWTP. As discussed earlier, special-status species do occur to the west in the Eden Landing Ecological Reserve. However, because of distance, dense screening along the western boundary of the plant, and acclimation to human disturbance, the potential noise and vibrational impacts associated with general construction activities associated with the ETSU Phase 1 Program to these species is less than significant.

Conventional pile driving is a construction activity potentially to be used in Phase 1B-Secondary Clarifiers and Effluent Facilities. Pile driving is loud and would be an unusual noise source at the WWTP which potentially could affect rails to the west if sufficiently disturbing to adversely affect nesting. The nesting season for rails is February 1 through August 31. Conventional pile driving for Phase 1B is projected to start in May 2023 and to be 2 ½ months to complete which is during the rail nesting season. Introduction of this noise and vibrational source during the rail nesting season could result in a significant adverse impact. However, as design of Phase 1B, which is considered on a program level in this IS/MND, has proceeded to only a 30% design, an opportunity exists to analyze this issue in more detail as design proceeds.

Accordingly, the following mitigation measure shall be implemented:

Mitigation Measure BIO-1: Development of a Noise and Vibration Mitigation Plan. During final design of the Phase 1B project, a Noise and Vibration Mitigation Plan (the "Plan") will be developed by a qualified biologist. The Plan will include a detailed timing assessment of pile driving and a study of sound attenuation from pile driving at the construction site. If necessary, the following will be completed: an analysis of alternative drilling technologies; an assessment of different shielding methods such as temporary sound walls, shrouds, and jackets for effectiveness in abating noise and vibration levels in areas west of the WWTP. The

Plan will require implementation measures as necessary to reduce noise and vibrational impacts to rail nesting. The Plan shall also require monitoring if needed.

As a result of Mitigation Measure BIO-1, project-specific mitigation will be developed and implemented to reduce the noise and vibrational impact to rail nesting to less than significant levels. Thus, pursuant to CEQA-Plus requirements, no federally-listed species would be affected and there would be no impact to the Federal Endangered Species Act (ESA) as a result of ETSU Phase 1-Secondary Clarifiers and Effluent Facilities or other Phase 1 projects. Additionally, the Phase 1 Program would be compliant with the Bald and Golden Eagle Protection Act.

Nesting Within the WWTP Site. During preparation of the BRA for the Standby Power Project, no evidence of any nesting was observed in the trees in the vicinity of the WWTP site, including burrowing owl and other raptors. Although the limited habitat values and extent of ongoing disturbance generally precludes the potential for nesting birds at the WWTP site, there remains a remote possibility that new bird nests could be established in the few scattered trees and other structures in the plant site. If construction is initiated during the bird nesting season (February 1 – August 31) construction-related disturbance could result in abandonment of the nests if any are present in the immediate vicinity. If construction-related noise and disturbance resulted in abandonment of a nest in active use and loss of any eggs or young in the nest, this would be a significant adverse impact and violation of the federal Migratory Bird Treaty Act and State Fish and Game Code sections. The mitigation measure below would serve to avoid this potential for violation of federal and state regulations by requiring a preconstruction survey and implementing appropriate construction restrictions if any active nests are encountered until any young birds have successfully fledged. This measure applies to Phase 1A-AB Improvements Project as well as other ETSU Phase 1 Program projects.

Mitigation Measure BIO-2. Adequate measures shall be taken to avoid inadvertent take of bird nests protected under the federal Migratory Bird Treaty Act and State Fish and Game Code when in active use. This shall be accomplished by taking the following steps.

- If initial construction for a Phase 1 Program project is proposed during the nesting season (February 1 to August 31), a focused survey for nesting raptors and other migratory birds shall be conducted by a qualified biologist within seven days prior to the onset of construction in order to determine whether any active nests are present in the APE and surrounding area within 100 feet of proposed construction for passerines and 250 feet of proposed construction for raptors. The survey shall be reconducted any time construction has been delayed or curtailed for more than seven days during the nesting season.
- If no active nests are identified during the construction survey period, or development is initiated during the non-breeding season (September 1 to January 31), construction may proceed with no restrictions.

- If bird nests are found, an adequate setback shall be established around the nest location and construction activities restricted within this no-disturbance zone until the qualified biologist has confirmed that any young birds have fledged and are able to function outside the nest location. Required setback distances for the no-disturbance zone shall be based on input received from the CDFW, and may vary depending on species and sensitivity to disturbance. As necessary, the no-disturbance zone shall be fenced with temporary orange construction fencing if construction is to be initiated elsewhere in the plant site.
- A report of findings shall be prepared by the qualified biologist and submitted to the District for review and approval prior to initiation of construction during the nesting season (February 1 to August 31). The report shall either confirm absence of any active nests or should confirm that any young are located within a designated no-disturbance zone and construction can proceed. No report of findings is required if construction is initiated during the non-nesting season (September 1 to January 31) and continues uninterrupted according to the above criteria.

Implementation of this mitigation measure would ensure that impacts on special-status species within the WWTP for all Phase 1 Program projects would be less-than-significant.

E. CULTURAL RESOURCES

SETTING

A Phase 1 Cultural Resources Evaluation for the proposed ETSU Phase 1 Program was prepared by Archeo-Tec Inc., Consulting Archaeologists, and is included in Appendix G.²⁵ The Phase 1 study found no evidence of identified archaeological resources within the APE. Therefore, pursuant to Section 106 of the National Historic Preservation Act, a finding of no historical properties affected as pertains to archaeological resources is appropriate. The Appendix should be consulted for a full discussion of the environmental setting and impact analysis.

IMPACT ANALYSIS

Control Measures Incorporated by USD.

None.

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
E. <u>CULTURAL RESOURCES</u>						
Would the Project:						
1) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	25
2) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	25
3) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	25

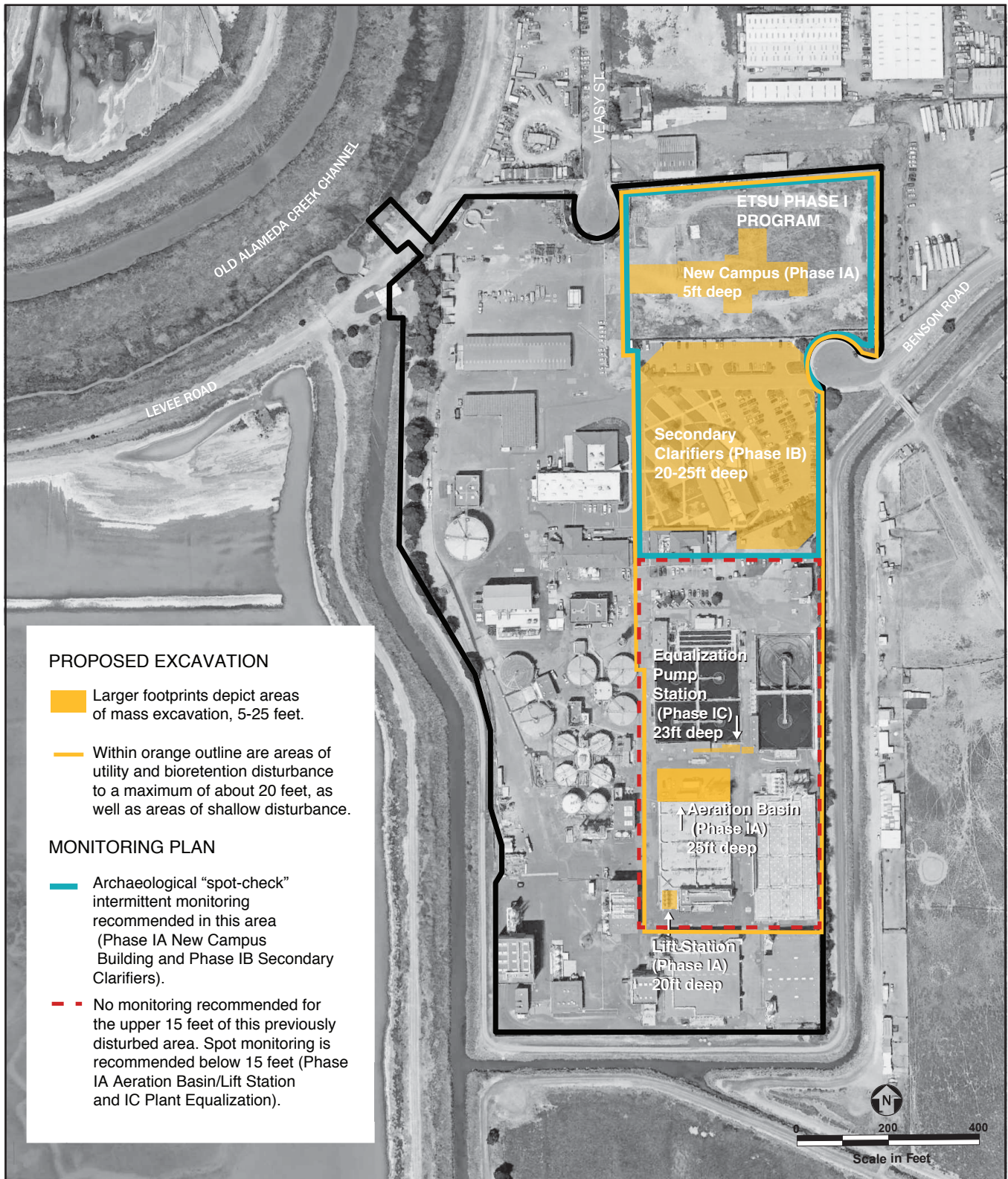
Less than Significant with Mitigation Incorporated: Criteria A1-A3

As shown in Figures A1-A4 in Appendix A, the ETSU Phase 1 Program will be constructed within the eastern half of the Alvarado WWTP. Construction characteristics of the Phase 1 Program projects differ substantially in terms of area requirements and depth of excavation. The Phase 1 Cultural Resources Evaluation concludes that the potential for encountering near-surface prehistoric sites, including archaeological resources and human remains, within the underlying bay mud or in the buried alluvial strata beneath the bay mud is unlikely but cannot be discounted entirely. This is a potentially significant adverse impact of the Phase 1 Program which can be reduced to less than significant levels with the following mitigation measures.

Mitigation Measures

Figure 3-4 outlines the archaeological mitigation monitoring plan for the ETSU Phase 1 Program. The plan consists of intermittent ("spot check") archaeological monitoring and construction crew training as with the following mitigation measures:

ARCH 1: Brief cultural resources training shall be given to construction crews for all Phase 1 projects regarding identification of potential archaeological resources. The training will include the distribution of an archaeological "Alert Sheet" to ground-disturbing construction crews. The Alert Sheet describes potential archaeological resources and outlines procedures for contacting an archaeologist in the event that archaeological resources are uncovered. Compliance with the California Health and Safety Code and California Public Resources Code as detailed in the mitigation measures below must be maintained. This Alert Sheet shall be distributed in a brief, on-site education session conducted by an archaeologist.



Source: Archeo-Tec, see Appendix E.

**Figure 3-4. ETSU Phase 1 Program
Archaeological Monitoring Plan**

ARCH 2: A program of intermittent ("spot-check") archaeological monitoring by an on-site archaeologist shall be conducted as follows:

- Phase 1A–AB Improvements Project: Intermittent (spot checking) monitoring recommended for excavation below about 15 feet (the approximately depth of modern disturbance). Total ground disturbance will reach up to 25 feet.
- Phase 1A – Campus Building Project: Intermittent monitoring recommended for all mass excavation as well as foundation disturbance (if soils are observable). Total depth will be about 5 feet for mass excavation, up to 60 feet for foundation.
- Phase 1B – Secondary Clarifiers and Effluent Facilities Project: Intermittent monitoring recommended for excavation below six (6) feet. Total ground disturbance will reach up to 25 feet for mass excavation, up to 60 feet for foundation.
- Phase 1C – Plant Equalization Storage Project: Intermittent monitoring recommended for excavation below about 15 feet (the approximate depth of modern disturbance). Total ground disturbance will reach up to 23 feet.

The specific monitoring plan for each Phase 1 Program project will be developed by a qualified archaeologist as design is finalized and will be approved prior to construction. As construction proceeds, the monitoring program for an individual Phase 1 project may be terminated by an archaeologist with approval by USD if initially observed subsurface conditions preclude the possible presence of cultural resources.

ARCH 3: Future geotechnical borings in previously untested areas (Phase 1-Campus Building site) shall be monitored by a qualified archaeologist. In the event that a potentially significant cultural site exists beneath the project site and can be incidentally identified in a geotechnical boring, Mitigation Measure ARCH 4 will be implemented. Early detection would also greatly reduce costs, and negative findings may reduce the frequency of spot monitoring.

ARCH 4: If resources are identified during construction of any Phase 1 Program project – whether during archaeological monitoring or through accidental discovery by the crew – the potential significance would be evaluated and data recovered as determined by the archaeologist. If the archaeologist identifies an intact and potentially significant archaeological resource, he or she shall develop a treatment plan in consultation with the Union Sanitary District, the State Water Resources Control Board (SWRCB), tribal representatives (in the event of a prehistoric site) and the State Historic Preservation Officer (SHPO). This plan would likely entail a program of systematic data recovery in which cultural materials are documented and removed.

ARCH 5: If human remains are encountered during excavation activities of any Phase 1 project, the following procedures will be implemented.

- a. Per the stipulations of the California Health and Safety Code Section 7050.5(b), the Alameda County Coroner's Office will be contacted immediately; this will occur whether or not a Most Likely Descendant has already been appointed.

- b. The Coroner's Office has two working days in which to examine the identified remains. If the Coroner determines that the remains are Native American, then – if a Most Likely Descendant has not yet been appointed – the Office will notify the Native American Heritage Commission (NAHC) within 24 hours.
- c. Following receipt of the Coroner's Office notice, the NAHC will contact a Most Likely Descendant. The Most Likely Descendant then has 48 hours in which they can make recommendations to the project sponsor and consulting archaeologist regarding the treatment and/or re-interment of the human remains and any associated grave goods.
- d. Appropriate treatment and disposition of Native American human remains and associated grave goods will be collaboratively determined in consultation between the appointed Most Likely Descendant, the consulting archaeologist, and the landowner or authorized representative. The treatment of human remains may potential include the preservation, excavation, analysis and/or reburial of those remains and any associated artifacts.
- e. If the remains are determined not to be Native American, the Coroner, archaeological research team, and the USD will collaboratively develop a procedure for the appropriate study, documentation, and ultimate disposition of the historic human remains.

F. ENERGY

SETTING

WWTP Electrical Service

The Alvarado WWTP is supplied electricity from Pacific Gas and Electric (PG&E) by one 12.47 kilovolt (kV) incoming utility service. This service supplies the switchgear assembly located in the existing Main Electrical Distribution Building. From this location, six feeder circuit breakers provide connections to electrical equipment within the plant.

The WWTP gas system includes a 2-inch diameter PG&E gas main from Veasy Street running south to a gas meter assembly. From the gas meter assembly, the gas main extends to various buildings within the WWTP.

The primary standby power source for the WWTP is supplied from three diesel fueled engine generator sets (6 total generators) located within the plant. All six standby generators can supply standby power to the plant. Construction of a new Standby Power Generation System Upgrade Project will soon begin (see Chapter 1). The building, to be located just to the west of the new campus building (Phase 1A), will contain three new minimum rated 2.5 megawatt (mW) standby engine generators, with space for one additional 2.5 mW generator, which will replace the six existing generators.

An existing digester gas-fueled cogeneration system is also integrated into the plant's existing electrical power distribution system. The system includes two 852 kw, 480 V, three-phase digester/natural gas fueled engine generator sets located in the cogeneration building. The operation of this system reduces the electric utility demand and respective utility power costs when in operation. An electrical load analysis of the WWTP indicates the existing electrical capacity operating load of the plant to be 5.7 mW.⁽⁶⁾

Regulatory Overview

There are a variety of federal, state, and local regulations and plans which address energy. Those particularly relevant to the proposed ETSU Phase 1 Program are discussed below.

California Green Building Standards Code (CALGreen). CALGreen was adopted as part of the California Building Standards Code (24 California Code of Regulations). Mandatory standards under Title 24 involve sustainable site development, energy efficiency (in excess of California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The current energy efficiency standards were adopted in 2019 and took effect on January 1, 2020.

City of Union City 2040 General Plan. The City of Union City 2040 General Plan (General Plan) includes the following goals and policies associated with energy:²⁶

Goal RC-6 and RC-7: The City shall continue to promote programs and initiatives that support and maximize energy conservation and the use of renewable energy in Union City.

Policy RC-6.1: Reduced Energy Consumption. The City shall support measures to reduce energy consumption and increase energy efficiency in residential, commercial, industrial, and public buildings.

Policy RC-6.2: Renewable Energy. The City shall promote efforts to increase the use of renewable energy resources, including but not limited to, wind, solar, hydropower, and biomass and the use of battery storage within the community and City operations, where feasible.

Policy RC-6.6: Energy-Efficient Lighting. The City shall employ energy-efficient lighting technology to reduce the energy required to light parks, streets, and public facilities.

Policy RC-6.7: Green Building. The City shall encourage new developments to adopt and incorporate green building features included in the CALGreen Tier 1 checklist in project designs and shall consider future amendments to the Municipal Code to adopt CALGreen Tier 1 requirements consistent with the State building code.

Policy RC-6.8: Zero Net Energy. The City shall encourage Zero Net Energy building design for new residential and non-residential construction projects and consider future

amendments to the Municipal Code to adopt ZNE requirements consistent with the State building code.

Policy RC-7.5: Greenhouse Gas Reduction in New Development. The City shall reduce greenhouse gas emissions from new development by encouraging development that lowers vehicle miles traveled (VMT); discouraging auto-dependent development patterns; promoting development that is compact, mixed-use, pedestrian friendly, and transit oriented; promote energy-efficient building design and site planning; improving the jobs/housing ratio; and other methods of reducing emissions.

IMPACT ANALYSIS

Control Measures Incorporated by USD

1. Comply with California Title 24 Building Energy Efficiency Standards into the design of ETSU Phase 1A-Campus Building in order to increase energy efficiency and preserve outdoor and indoor environmental quality.
2. Obtain a building permit from the City of Union City for Phase 1A-Campus Building and incorporate appropriate energy efficient measures into project design.

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
F. ENERGY						
Would the Project:						
1) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16
2) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16, 26

Less than Significant Impact: Criteria F1, F2

As indicated earlier, the existing plant calculated electrical operating load is 5.7 mW. Because of the new process equipment being added under the ETSU Phase 1 Program, the new operating load is estimated to be about 6.5 mW, or a 14% increase.

USD's mission statement is as follows:

"To safely and responsibly collect and treat wastewater, and to recover resources from process waste streams, while protecting human health and improving the environment in a way that benefits the Tri-Cities and all USD stakeholders."

The ETSU Program will provide USD with a technically and fiscally sound practical plan for the District's WWTP for the next 20 to 40 years. The plan responds to need to improve process performance, accommodate planned growth, and respond to anticipated future regulatory agency requirements. Doing so requires increased consumption of energy for construction and operation which is not wasteful, unnecessary or inefficient (Criterion F1).

USD will continue to comply with local and state requirements for energy conservation and the existing digester/natural gas cogeneration system will continue to play an important role in reducing the plant's electrical utility demand. The Phase 1A-Campus Building will have mechanical systems which are expected to be more energy efficient than the current building systems which were constructed in the late 1990s. The solar energy equipment may include photovoltaic (PV) panels planned for both the building roof and parking areas where the PV panels would act as covered parking. USD also envisions that more vehicles will be electric-powered in the future. Therefore, the Phase 1A-Campus Building Project will have EV charging stations in the parking area.

To further offset the additional electrical power usage, the District is also considering approaches to increase the use of alternative energy. Besides the new Campus Building, other sites within the WWTP are being considered in the ETSU Program for solar power, including existing structures. A wind-driven system could also be installed later in the Program to further increase the use of alternative energy.

Based on the above discussion, neither the Phase 1A-AB Improvements Project or other ETSU Program phases will result in a wasteful, inefficient, or unnecessary consumption of energy or conflict with a local or state renewable energy plan, and the impact both individually and cumulatively is less than significant.

Mitigation Measures

None required.

G. GEOLOGY AND SOILS

Numerous geotechnical studies have been conducted at the WWTP from 1976 to 2018 for various treatment plant expansion and improvement projects. In June 2020, a Desktop Study of geotechnical conditions was completed by DCM Consulting, Inc. and included as Appendix B of the ETSU Phase 1A-AB Modifications Project 30% Design Report.⁶ The previous investigations were important input for the Desktop Study's assessment of the physical characteristics of soils and groundwater at the Alvarado WWTP site.

SETTING

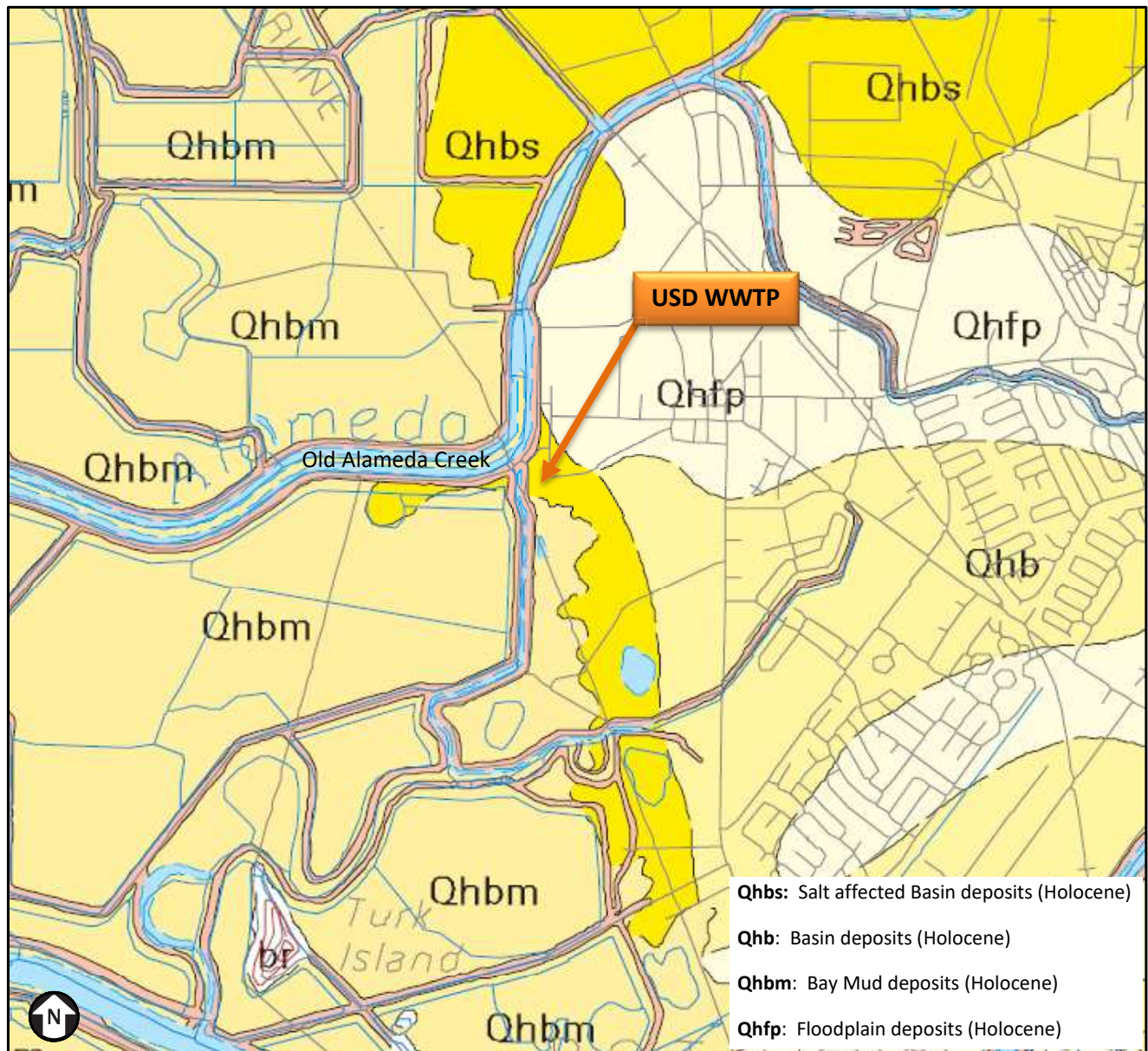
Subsequent to Desktop Study, Hazen and Sawyer prepared a Seismic Analysis Technical Memorandum which is included as Appendix A of the 30% Design Report.⁶ This memorandum addressed the seismic design criteria for structures included in ETSU Phase 1. More recently in January 2021, CE&G completed a Geotechnical Design Report for ETSU Phase 1A-Campus Building.²⁷ These primary source documents are important sources of information for the discussion in this section.

Geologic Setting

The Alvarado WWTP is located at the distal edge of a large alluvial plain known as Niles Cone. As discussed in the Desktop Study, over geologic time meandering of Alameda Creek and flood plain deposits from Niles Canyon have deposited thick sequences of alluvial soils between the East Bay hills and San Francisco Bay.

Figure 3-5 is a geology map for the WWTP area. It shows that the plant is located at the contact between alluvial soils deposited from east to west and Bay Mud deposited from west to east and overlapping the alluvial soils. Bay Mud has been mapped at the WWTP as extending beneath the plant site with an expected thickness of 0 to 10 feet. Mapped geologic deposits at the WWTP include the following:

- Qhbs: Basin deposits (salt affected) (Holocene) – Clay to very fine clay deposits
- Qhb: Basin deposits (Holocene) – Very fine silty clay to clay deposits occupying flat-floored basins at the distal edge of alluvial fans adjacent to Bay Mud (Qhbm).
- Qhbm: Bay Mud (Holocene) – Water saturated estuarine mud, predominantly gray, green and blue clay and silty clay marshlands and tidal mud flats of San Francisco Bay and Carquinez Strait. The mud also contains a few lenses fine sand and silt, a few shelly layers, and peat.



Source: Reference_, Appendix B

Figure 3-5. Geology Map

Soils

Prior to major development at the WWTP subsurface, conditions consisted of about 5 feet of loose clayey silt and sandy silt (presumably fill) underlain by stiff and dense fine- to coarse-grained alluvium. Over the years most of the plant's structures have been designed and constructed to remove all soft Bay Mud from beneath structures and to support structures on mat foundations bearing on underlying stiff soils. The result, according to the Desktop Study, is variable generations and thicknesses of mostly engineered fills around the WWTP. Based on a review of boring logs from 37 locations at the WWTP, key points in the design and construction of ETSU Phase 1 Program include the following:

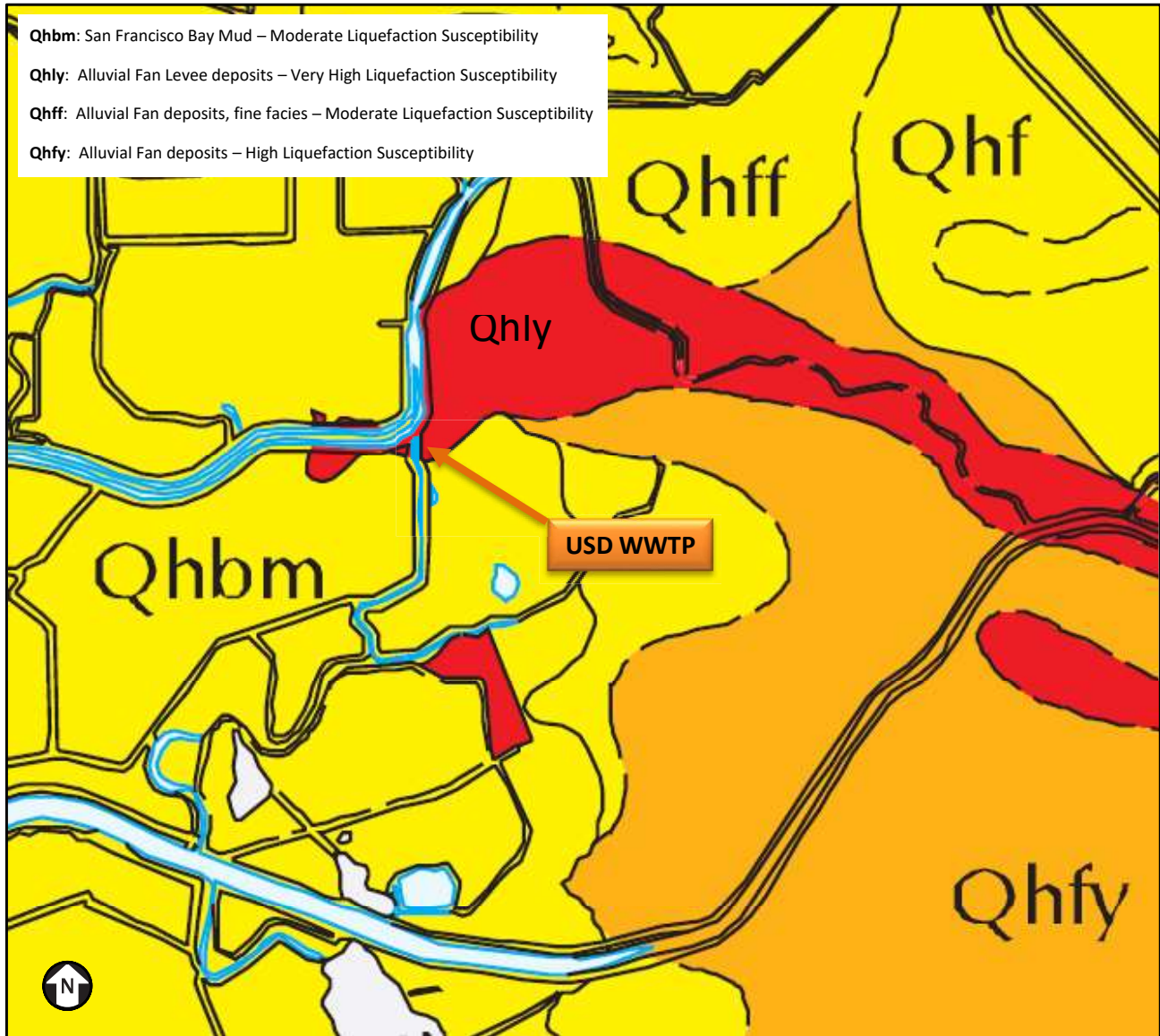
- The existing fills at the treatment plant are of variable thickness, composition and consistency and includes localized soft areas (i.e., not all existing fills are well compacted "engineered" fills);
- The thickness of soft Bay Mud prior to development of treatment plant structures extending below grade averaged about 10 feet;
- The alluvial soils below the Bay Mud, while generally stiff cohesive clays, do include loose clean sand layers and lenses of variable thickness that are semi-continuous to continuous. The sands start at about 20 to 35 feet below ground surface (bgs) and are as much as 15 to 20 feet thick; and
- The top of the Newark Aquifer is consistently encountered beneath the treatment plant site at about 50 to 60 feet below existing plant grades.

Seismicity

The WWTP is located in the seismically active San Francisco Bay Area. The site is not located within an Alquist-Priolo Earthquake Fault Zone and no active fault traces are known to pass through the WWTP. The closest active fault to the site is the Hayward Fault located about 3.5 miles to the northeast.²⁷

Liquefaction

Liquefaction is the loss of stability and strength in loosely packed, waterlogged sediments due to violent ground movements caused by such events as earthquakes. Liquefaction occurring beneath buildings or other structures can cause major damage during earthquakes. Figure 3-6 is the liquefaction susceptibility map for the vicinity around the Alvarado WWTP. The map indicates the WWTP site has a moderate to very high liquefaction susceptibility. This is due to the loose clean sand layer underlying the plant which starts at about 20 to 35 feet below ground surface. The principal consequence of liquefaction in the loose sandy soil layers at the site is liquefaction-induced settlement.



Source: Reference_, Appendix B

Figure 3-6. Liquefaction Susceptibility Map

Groundwater

Groundwater is discussed more thoroughly in Section I, Hydrology and Water Quality. Shallow groundwater levels exist at the WWTP at a depth of about 4 to 6 feet below pavement surface, but can vary by as much as 3 feet by seasonal rainfall. Groundwater levels at the plant are complicated by various generations, depths, and compositions of area fills, below grade structure backfills and extensive yard pipeline pipe embedment and trench backfill.

The Newark Aquifer is a protected aquifer under the jurisdiction of the Alameda County Water District (ACWD) as part of ACWD's ongoing Aquifer Reclamation Project. The top of the aquifer at the WWTP varies from about 50 to 60 feet below existing grade. The alluvial clays above and below the aquifer serve to confine the granular soils in the aquifer which results in pressurized water within the aquifer at the plant. At times, the Newark Aquifer has been artesian where groundwater bubbles to the surface.

IMPACT ANALYSIS

Control Measures Incorporated by USD

- G1. Incorporate the recommendations of the Project Geotechnical Design Report for design, construction, and long-term performance into the Contract Documents for each Phase 1 Program project.
- G2. Have a geotechnical engineer review the final Project plans and specifications for each Phase 1 Program project prior to construction to verify that geotechnical aspects of the Project are consistent with the intent of the recommendations included in the Project Geotechnical Design Report.
- G3. Have a geotechnical engineer review geotechnical-related Contractor submittals during construction (e.g., shoring, dewatering, ground improvement, backfill materials, etc.).
- G4. Have a geotechnical engineer perform periodic site inspections during the construction to observe and document subsurface conditions encountered by the Contractor with respect to the subsurface conditions described in the Project Geotechnical Design Report.
- G5. Require the Contractor to submit to USD, if applicable, a copy of their annual trench and/or excavation permit issued by the California Occupational Safety and Health Administration (Cal/OSHA).
- G6. In accordance with the provisions in Section 6705 of the Labor Code, the Contractor shall submit in advance of excavation of any trench or trenches five feet or more in depth, a detailed plan in conformance with the Project Geotechnical Design Report showing the design of shoring, bracing, sloping and dewatering, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench

or trenches. Any excavation dewatering of more than one foot below groundwater level must be contained within relatively impermeable shoring to avoid settlement outside the excavation. If such plans vary from the shoring system standards set forth in the Construction Safety Orders of the Division of Industrial Safety in Title 8, Subchapter 4, Article 6, CCR, the plans shall be prepared and signed by a California registered civil or structural engineer.

- G7. Prior to proceeding with excavation and grading activities, require the Contractor for each Phase 1 project to file a Notice of Intent with the SWRCB and upload the associated Surface Water Pollution Prevention Plan (SWPPP) onto the Boards Stormwater Multi Application & Reporting System, meeting Construction General Permit Requirements (SWRCB Order No. 2009-0009-DWQ, as amended) designed to reduce potential adverse impacts to surface water quality through the construction periods of the ETSU Phase 1 Program. The SWPPP shall include measures to be implemented for control of erosion and to prevent the discharge of contaminated stormwater runoff and other sources of pollutants from the job site. The SWPPP shall include appropriate requirements of the BAAQMD as discussed in Section C and recommendations of the Phase 1 project's Geotechnical Design Report.
- G8. Ensure imported soil shall comply with Project specifications which define the minimum geotechnical properties and analytical quality characteristics that must be met for use of fill material from off-site borrow sources. All imported fills shall not contain environmental containments or debris and shall be non-corrosive and comply with the recommendations in the Department of Toxic Substances Control's (DTSC's) Information Advisory Imported Fill Material (October 2001).

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
G. <u>GEOLOGY AND SOILS</u> Would the Project: 1) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:						

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
a) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6, 27
b) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6, 27
c) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6, 27
d) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
2) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6, 27
3) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6, 27
4) Be located on expansive soil, as defined in Table 18-I-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
5) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
6) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
7) Result in substantial soil degradation or contamination?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

No Impact: Criteria G1(a), G1(d), G4-G6

The WWTP site is not within an Alquist-Priolo Earthquake Fault special studies zone [Criterion G1(a)] and has no potential for landslides [Criterion G1(d)]. The ETSU Phase 1 Program, including

the Phase 1A-AB Improvements Project, is not located on expansive soils, so there is no impact as to Criterion G4. Criterion G5 relating to septic tanks and alternative wastewater disposal systems is not relevant to the Program. Lastly, as the WWTP site is highly disturbed, the Phase 1 Program will have no impact relative to Criterion G6 and destruction of unique paleontological resources or unique geologic features.

Less Than Significant Impacts: Criteria G1(b), G1(c), G2, G3, G7

Physical hazards: Criteria G1(b), G1(c) and G3. These criteria relate to physical hazards the Phase 1 Program may be exposed to during construction and operation including seismic ground shaking and failure. Given the WWTP history and subsurface soil and groundwater conditions, the Desktop Study concludes the construction of the planned ETSU Phase 1 structures may be impacted by the following subsurface conditions.⁶

- Groundwater at depths of about 4 to 6 feet below ground surface – construction dewatering, below-grade structure buoyancy and uplift pressures on structure base slabs;
- Localized soft soils within areal fills, especially near groundwater – subgrade instability and compressibility under structures;
- Remnant soft Bay Mud (e.g., at the present Administration Building site and at the new Campus Building Complex site) – subgrade instability and significant consolidation settlement under structure and fill loads;
- Shallow non-cohesive clean sand layers within alluvial soils (e.g., top of sands as shallow as 20 to 25 feet bgs) – excavation base stability and dewatering;
- Existing yard pipeline trench backfill and structure backfill, particularly pea gravel – excavation instability, large quantity groundwater transmission; and
- Newark Aquifer – artesian groundwater pressures and ACWD jurisdiction of a protected aquifer.

Geotechnical related project impacts on long-term performance of ETSU Phase 1 project structures include:

- Hydrostatic uplift pressures on empty below-grade structures from shallow groundwater;
- Liquefaction of shallow non-cohesive clean sands within alluvial soils and resultant ground surface settlement during a major seismic event;
- Differential settlement between pile supported structures and yard pipelines upon liquefaction of shallow non-cohesive clean sands within alluvial soils;

- Total and differential settlement of deep mat foundations and shallow footing foundations; and
- Differential settlement between new ETSU Phase 1 project elements and existing plant treatment structures that are on the order of 30 to 40 years old and are at equilibrium with respect to long-term consolidation settlement from structure loading.

Control measures, however, have been included in the ETSU Phase 1 Program to address these issues. Control Measures G1 through G4 provide for the ongoing involvement of a geotechnical engineer with incorporation of their recommendations into the Phase 1 Project plans and specifications. Controls necessary to address the primary geotechnical considerations for the Phase 1 Program include compliance with provisions of Chapter 16 of the California Building Code; use of prescribed measures for site preparation, subgrade preparation, shoring of excavations, use of engineered fill materials, fill placement and compaction, and pipe bedding and trench backfill; use of a structural mat foundation; deep foundations; wet weather construction; and surface drainage.

Deep foundations may be required for Phase 1A-Campus Building and Phase 1B-Secondary Clarifiers and Effluent Facilities due to underlying compressible soils and to mitigate potential settlement due to liquefaction. For the campus building, it is anticipated that the new building foundation will consist of one or a combination of preloading the site to address settlement, pile foundations to accommodate both settlement and liquefaction, or soil mixing. Pile foundations could include conventionally driven piles (impact driving) drilled displacement columns, auger cast piles, or stone columns. As the campus building location is noise sensitive as discussed in Section M, Mitigation Measure NOI-4 provides for an alternative to impact driving be used. Deep foundations may be required to provide separation from the top of the Newark Aquifer, due to artesian groundwater pressures within the aquifer and potential for excavation blow-in.

For construction of the secondary clarifiers (Phase 1B), the underlying sand layer presents design difficulties which will be addressed in a project-specific geotechnical design report. Possible mitigation include installation of water-tight shoring, replacement of sands with engineered fill, treatment of sand layer with ground improvement methods, and the use of deep foundations that penetrate well through the sand layer. Impact pile driving has noise and vibration issues as discussed in Section D and Mitigation Measure BIO-1 provides for development of a noise and vibration mitigation plan during final design of the Phase 1B project.

Control Measures G5 and G6 address the Phase 1 Program's excavation activities; compliance with the Labor Code and the need to have an acceptable plan for shoring, bracing, sloping or other provisions necessary to address the hazards of caving of any trench five feet or more in depth and other safeguards necessary to minimize the risk of caving. The Desktop Study and Geotechnical Design Report for Phase 1A-Campus Building concluded that construction of the proposed Phase 1 Program is feasible from a geotechnical standpoint provided necessary controls are implemented.^{6, 27} Thus, potential impacts related to ground shaking, ground failure,

and associated physical hazards for the Phase 1A-AB Improvements Project as well as other Phase 1 Program projects are less than significant on an individual and cumulative basis.

Soil Erosion: Criterion G2. Criterion G2 addresses the potential for soil erosion. Phase 1 project construction will involve soil excavation to install Project components and associated piping. Construction activities will occur over a 6 ½ year period, and could cause sediment and other pollutants to leave the site and enter Old Alameda Creek and surrounding areas and the WWTP drainage system. Control Measure G7 provides for preparation of a SWPPP by the Contractor of each Phase 1 project which will contain the necessary temporary construction site BMPs for control of erosion and other sources of pollutants. As a result, potential impacts associated with discharge of contaminated stormwater runoff for the Phase 1A-AB Improvements Project as well as other Phase 1 Program projects are less than significant on an individual and cumulative basis.

Soil Degradation: Criterion G7. Criterion G7 addresses whether a project will result in substantial soil degradation or contamination. Soil will need to be imported to the job site to provide suitable fill and, if not regulated, could be contaminated, resulting in on-site impacts. To provide for the protection of surface and groundwater quality and public health, Control Measure G8 will require the use of fill material from off-site borrow sources to comply with analytical quality characteristics contained in DTSC's Information Advisory Imported Fill Material (October 2001), as well as minimum geotechnical properties recommended by the project-specific Geotechnical Design Report. The impact for the Phase 1A-AB Improvements Projects and other Phase 1 Program projects is less than significant on an individual and cumulative basis.

Mitigation Measures

None required.

H. GREENHOUSE GAS EMISSIONS

SETTING

For this resource area, an investigation of the Phase 1 Program's potential impact on climate change related to emissions of GHGs was conducted. According to the BAAQMD's Final 2017 CAP,¹⁸ there is a strong scientific consensus that the rapidity of the heating across the planet in recent decades is primarily caused by GHG emissions from human activities. Atmospheric concentrations of carbon dioxide (CO₂), the main GHG, have been increasing rapidly in recent decades, with current levels representing an increase of nearly 45 percent over pre-industrial levels. The BAAQMD CAP indicates that a hotter climate is expected to complicate the BAAQMD's efforts to improve air quality and protect public health in the Bay Area. Climate change could also have major impacts on the region's natural systems, water supply, economy and infrastructure.

Regulatory and Planning Framework

Assembly Bill 32, also known as the California Global Warming Solutions Act of 2006, was established to mandate the quantification and reduction of GHGs to 1990 levels by 2020. The law establishes periodic targets for reductions and requires certain facilities to report GHG emissions on an annual basis. The 2017 Climate Change Scoping Plan prepared by the CARB outlines the main strategies California will implement to achieve the legislated GHG emission reduction targets needed by key sectors (e.g., transportation, industry, electricity generation, agriculture, waste management, and water).

To implement market-based incentive provisions of Assembly Bill 32, CARB approved a carbon Cap-and-Trade Program to establish a system of market-based declining annual aggregate emission limits for GHG emission sources, applicable from January 1, 2013, to December 31, 2020. The overall GHG emissions cap under the program declines by 3% each year from 2015 through 2020. In September 2016, Governor Jerry Brown signed Senate Bill 32, which mandated a GHG emissions reduction target of 40% below 1990 emission levels by 2030. This bill effectively extended the efforts already in effect associated with Assembly Bill 32 implementation.

In addition to CARB's California 2017 Climate Change Scoping Plan, local efforts to track and reduce GHG emissions include the BAAQMD "Spare the Air, Cool the Climate" 2017 CAP¹⁸ and the Climate Action Plan adopted by Union City in 2010.²⁸

- The BAAQMD's 2017 CAP defines an integrated, multipollutant control strategy to reduce interrelated emissions of criteria pollutants and GHGs. The control strategy is designed to complement efforts to improve air quality and protect the climate which are being implemented by partner agencies at the state, regional and local levels. The strategy encompasses 85 control measures that define specific actions to reduce emissions of pollutants from the full range of emission sources.
- Union City's adoption of its Climate Action Plan was the result of nearly five-years of work on environmental sustainability in Union City. Union City's Plan presents a strategy to achieve the City Council's goal of reducing GHG emissions 20% below 2005 levels by the year 2020. In Union City, most GHG emissions come from energy use in buildings and fuel for transportation with water- and waste-related emissions contributing relatively smaller proportions.

These statewide and local plans outline policies and actions to meet specified emission targets.

IMPACT ANALYSIS

Control Measures Incorporated by USD

H1. Implement BAAQMD basic construction control measures (Control Measures C1-C8).

- H2. Require the Contractor to recycle at least 50% of construction waste or demolition materials.
- H3. Use alternative-fueled (e.g., biodiesel, electric) construction vehicles/equipment in at least 15% of the fleet, if contractors' equipment can accommodate alternative fuel .
- H4. Use at least 10% local building materials.

Control measures H2-H4 are BMPs encouraged in the BAAQMD CEQA Guidelines¹⁹ for GHG reduction and will be implemented to the extent practicable.

Significance Criteria

RESOURCE CATEGORY/ SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
H. GREENHOUSE GAS EMISSIONS Would the Project:						
1) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	19, 22
2) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	18, 19, 28

Less than Significant Impacts: Criteria H1, H2

GHG Emissions: Criterion H1

Sources of GHG emissions include exhaust from motor vehicles and trucks, as well as the combustion of fuels such as gasoline, diesel, and natural gas in industrial engines and other sources. GHGs emitted from the combustion of fuels include carbon dioxide, methane, and nitrous oxide. For assessment of GHG emissions, emissions of these gases are quantified and multiplied by their global warming potential and summed to provide emissions in terms of metric tons (MT) of carbon dioxide equivalent (CO₂e) emissions.

Construction Emissions. GHGs are emitted by construction equipment and vehicles/trucks used during the construction. Construction of the Phase 1 Program is expected to occur over an approximate 6 year period of construction activity. GHG emissions associated with Project

construction activities were estimated using the CalEEMod. In addition to direct emissions of GHGs, CalEEMod also calculates indirect GHG emissions associated with electricity consumption, waste disposal, etc. This methodology, information related to the analysis, and the results of the GHG emissions calculations are provided in Appendix D.

As shown in Table 3-4, the analyses resulted in a maximum of approximately 1,170 MT CO₂e emissions per year during the approximate 6-year construction period. These GHG emissions would cease once construction is complete. The BAAQMD has no emissions threshold for significance of construction-related GHG emissions, but recommends they be quantified and disclosed and that BMPs be incorporated to reduce GHG emissions during construction, as feasible and applicable.

Table 3-4: Maximum Annual GHG Emissions During Construction Period

Phase/Description	Annual Emissions (MT CO ₂ e per Year)						
	2021 ^a	2022	2023	2024	2025	2026	2027
1A-AB Improvements	515	592	581	336			
1A – Campus Building	384	578	8				
1B – Secondary Clarifiers and Effluent Facilities			573	601	518	2	
1C – Plant Equalization Storage						462	68
Total CO₂e MT/year	900	1,170	1,162	938	518	464	68
^a Construction estimated to begin in Q3 2021 and last approximately 6 years (if Phase 1C is included) Source: Reference 20							

As listed above, feasible BMPs will be implemented to minimize GHG emissions during construction. In addition to implementing Control Measure H1 (the BAAQMD basic construction control measures), USD will employ Control Measures H2-H4 to maximize recycling, use of local building materials for the Campus Building, and alternative fuels in construction equipment to the extent practicable and available. For example, the Contractor will demolish the existing administration building and will recycle at least 50% of the materials as practicable. As such, construction-related GHG emissions associated with Phase 1A-AB Improvements and other Phase 1 Program projects will have a less than significant impact, both individually and cumulatively, on the environment (Criterion H1).

Operation Emissions. During operation of the Project, sources of GHG emissions will include an up to 80 hp emergency engine that will be used to generate power during emergencies when power is not available and will be operated up to 50 hours per year for testing and maintenance. Also, an addition of 8 heavy duty hauling trucks per day were estimated to be needed for future operations at this WWTP, and conservatively attributed to this Phase 1 Program. As shown in Appendix D, operational GHG emissions were estimated to be a negligible 14 MT/year from the emergency engine and 8 additional heavy duty hauling trips per day.

For industrial projects, BAAQMD has established a significance threshold of 10,000 MT/year of CO₂e. Thus, operational GHG emissions of 14 MT/year would well below this applicable threshold and the impacts considered to be less than significant (Criterion H1).

The impact of construction and operation GHG emissions can also be estimated by amortizing the construction emissions over the life of the project, i.e., nominally 30 years, and adding it to the operational GHG emissions. In this case, the total (of all subphases over the approximate 6-year period) construction GHG emissions of 5,220 MTs would be divided by 30 years, or 174 MT/year and then added to the 14 MT/year operational emissions for an estimate of 188 MT CO₂e/year as the maximum impact compared to the 10,000 MT/year threshold. This amount of GHG emissions represents a less than significant impact for the Phase 1-AB Improvements Project and other Phase 1 Program projects, both individually and cumulatively.

Consistency with Applicable GHG Reduction Plans, Regulations, and Policies: Criterion H2

The proposed ETSU Phase 1 Program includes the construction of a Campus Building, which would be required to comply with all building codes in effect at the time of construction such as energy conservation measures mandated by Title 24 of the California Building Standards Code – Energy Efficiency Standards. Since the Title 24 standards require energy conservation features in new construction (e.g., high-efficiency lighting, high-efficiency heating, ventilating, and air-conditioning (HVAC) systems, thermal insulation, double-glazed windows, water conserving plumbing fixtures, etc.), these codes indirectly regulate and reduce GHG emissions. Energy conservation is included in the measures promoted by the California 2017 Climate Change Scoping Plan, BAAQMD 2017 CAP, and the Union City 2010 Climate Action Plan.

Additionally, as discussed above, Phase 1 Program GHG emissions during operation are less than significant, since operational GHG emissions of 14 MT/year, or when including amortized construction emissions for a total of 188 MT/year, are well below the significance threshold of 10,000 MT of CO₂e per year. Therefore, the Phase 1 Program would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. Because the Project will not conflict with these plans, the projected GHG emissions impact would be less than significant (Criterion H2).

Mitigation Measures

None required.

I. HAZARDS AND HAZARDOUS MATERIALS

SETTING

This resource category addresses health and safety issues related to construction of the ETSU Phase I Program. As the WWTP site is isolated and removed from areas frequented by the public, health and safety issues apply to construction workers, construction managers, and USD staff who would be exposed to hazardous materials and physical conditions associated with the

presence of construction equipment and excavations. Because the Phase I Program projects all have construction activities, the discussion in this section is applicable to the entire Phase I Program. There are a variety of state and federal regulations that apply to construction projects for protection of health and safety. USD also has standard specifications to address these issues based on other successfully completed projects.

Several regulatory agency databases were consulted regarding the presence of hazardous materials release sites within the Project area, including the SWRCB Geotracker website and the DTSC Cortese List.^{29, 30} No sites on the Cortese List are in the Project area. Several permitted underground storage tanks exist just to the east of the Project site.

The Geotracker database identifies the Alvarado WWTP as a program cleanup site owing to the historical occurrence of petroleum hydrocarbon contamination in three areas of the plant site. Remediation activities have been completed by USD and the site continues to be regulated by the ACWD with requirements for an annual groundwater monitoring program and reports.³¹

During the geotechnical investigation of the Phase 1A-Campus Building site, five geotechnical borings were drilled. These drilling spoils were determined to be non-hazardous waste prior to being transported off site.²⁷

Control Measures Incorporated by USD

11. Store and handle all hazardous materials in strict accordance with the Material Safety Data Sheets for the products. The storage and handling of potential pollution causing and hazardous materials, including but not necessarily limited to gasoline, oil, and paint, will be in accordance with all local, state, and federal requirements.
12. When sandblasting, spray painting, spraying insulation or other activities inconveniencing or dangerous to property or the health of employees or the public are in progress, the area of activity shall be enclosed adequately to contain the dust, overspray, or other hazards. In the event there are no permanent enclosures at the area, or such enclosures are incomplete or inadequate, require the Contractor to provide suitable temporary enclosures. When sawing, cutting, or grinding concrete or other materials that produce silica dust, water shall be used to prevent the dust from becoming airborne. Proper respiratory protective equipment shall be worn during activities covered in this control measure.
13. Employ safety provisions conforming to the U.S. Department of Labor (OSHA), Cal/OSHA, and all other applicable federal, state, county and local laws, ordinances, and codes. The completed work shall include all necessary permanent safety devices, such as machinery guards and similar ordinary safety items, required by the state and federal industrial authorities and applicable local and national codes. The Contractor shall develop and submit to USD for approval a Health and Safety Plan, which has been reviewed by a

certified industrial hygienist, that defines proposed site safety measures and which notifies workers of the presence of detected concentrations of chemicals at the site.

14. Appoint an employee as safety supervisor who is qualified and authorized to supervise and enforce compliance with the Safety Program. The Safety Program will include an operation plan with emergency contacts.
15. The Contractor shall construct appropriate safety barriers such as temporary fencing, berms, or similar facilities where required or directed by USD. To minimize disturbance of existing roads and facilities, safety barriers shall allow for normal maintenance and operation of existing facilities and roads as determined by USD or its appointed Representative. The Contractor shall conduct his work so as to ensure the least possible obstruction to traffic and inconvenience to the general public and the residents in the vicinity of the work and to ensure the protection of persons and property.
16. Establish, implement, and maintain a written injury prevention program as required by Labor Code Section 6401.7.
17. If contaminated materials are encountered during excavation, then all work shall comply with the following codes and will be reported to the RWQCB and ACWD immediately:
 - a. Code of Federal Regulations (CFR) – Title 40 – Protection of the Environment, Part 761 (40 CFR 761).
 - b. CCR, Title 22, Social Security, Division 4, Environmental Health, Chapter 30 – Minimum Standards for Management of Hazardous and Extremely Hazardous Wastes.
18. Pursuant to the Contract Documents, relative to contaminated materials, the Contractor shall submit the following to USD for review:
 - a. The Contractor shall review the latest WWTP groundwater monitoring report and the environmental soil screening test results and prepare and submit to USD or its appointed Representative, for review, a detailed Job Plan describing the proposed methods and procedures for excavating, segregating, testing, and disposing of contaminated soil or groundwater. The Job Plan shall be submitted to the District or its appointed Representative no less than fourteen (14) days prior to the start of any excavation work at locations where contaminated soils and groundwater is anticipated.
 - b. The Job Plan shall include step-by-step procedures for the actions to be taken in identifying, handling, removing, and disposing of any contaminated soil or groundwater encountered during excavation.

- c. At least 14 days before the start of any excavation at locations where contaminated soils and groundwater are anticipated, the Contractor shall prepare and submit to the USD or its appointed Representative, for review, a supplemental Health and Safety Plan. The supplemental Health and Safety Plan shall be prepared by an industrial hygienist certified by the American Board of Industrial Hygiene and shall include, but not limited to, training of the Contractor's personnel, protective equipment, air monitoring, sampling, and emergency procedures.
 - d. No excavation will be allowed to commence until the Health and Safety Plan has been returned by the District to the Contractor with the notation: "Resubmittal not required."
 - e. The Contractor shall provide copies of hazardous waste transporter licenses, permits, or registrations for all states in which the shipment shall travel.
 - f. The Contractor shall obtain all permits and licenses, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the work, including certification of transport vehicles carrying hazardous material.
19. Pursuant to the Contract Documents relative to contaminated materials, the Contractor shall implement the following monitoring requirements:
- a. Contractor shall furnish a properly calibrated, fully functional organic vapor analyzer (OVA) for use at the site of every excavation or open trench to continually sample and monitor the ambient atmosphere.
 - b. The preliminary mode of examination for petroliferous soil and/or groundwater shall be through visual and olfactory means. Upon the first observation of soil or water that may contain petroliferous products, the Contractor shall stop excavation work and immediately notify the USD or its appointed Representative, the RWQCB and the ACWD. No excavation of petroliferous soil, nor pumping of petroliferous water, shall proceed without the approval of USD or its appointed Representative, the RWQCB and the ACWD.
 - c. Following sensory observation of petroliferous products, the OVA equipment shall be brought to the excavation site and the atmosphere shall be tested. The Contractor's Job Plan and Health and Safety Plan shall be immediately placed into effect.
 - d. Potentially contaminated soil or water shall be segregated and tested by the Contractor, at a certified laboratory approved by USD or its appointed Representative, to determine the consistency and quantity of petroliferous products. The soil or water shall then be disposed of in accordance with applicable local, state and federal law, following the procedures described in the Contractor's Job Plan and Health and Safety Plan.

110. Pursuant to the Contract Documents, contaminated materials will be handled and disposed of in the following manner:
- a. The Contractor shall avoid or minimize excavation in contaminated areas whenever possible.
 - b. Excavated trench material that, in the opinion of USD or its appointed Representative, exhibits evidence of petroleum contamination shall be removed from the site and temporarily stockpiled by the Contractor. The location of the temporary stockpile area must be reviewed by USD. The contaminated trench materials shall be placed on a 10 mil polyethylene sheeting to prevent contamination of uncontaminated soils and shall be separated from all uncontaminated trench materials. The temporary stockpiles of contaminated trench materials shall be covered securely with 10 mil polyethylene sheeting to limit emissions and prevent rainfall from entering the stockpile. Runoff or drainage from the temporary stockpile shall be prevented from leaving the area and all materials shall be surrounded with 6-foot high temporary chainlink fence.
 - c. The temporary stockpiles of contaminated trench materials shall be sampled and analyzed by a certified testing laboratory, approved by USD or its appointed Representative. Results of the laboratory analysis shall be provided by USD or its appointed Representative within 7 calendar days from the date that the material is stockpiled.
 - d. Disposal of the contaminated trench materials will depend on the results of the testing program. The Contractor shall dispose of the contaminated material with the approval of USD or its appointed Representative, at either a licensed thermal remediation plant or by disposal at a Class II landfill, following required procedures.
 - e. All handling, storing, transporting, treatment, and disposal of contaminated soil and groundwater shall conform with the federal and state environmental regulations, including those of the RWQCB, DTSC, Integrated Waste Management Board, CARB, and the BAAQMD. Transport of contaminated material and groundwater shall be performed by appropriately certified and/or licensed personnel.
 - f. Upon completion of excavation within the contaminated area and the hauling and disposal of contaminated materials, the Contractor shall clean up the site, including proper removal and disposal of all plastic sheetings, containers, and other materials used.
 - g. Any groundwater from trenching activities within the contaminated soil area, as shown on the plan shall be stored in temporary Baker-type storage tanks. The Contractor shall sample and analyze groundwater, then dispose of the stored

groundwater as directed by USD or its appointed Representative. Depending on the quality of the groundwater, disposal may be to the sewer system or a suitable off-site disposal facility.

- I11. Submit for USD review, in accordance with the provisions of Section 6705 of the Labor Code, in advance of excavation of any trench or trenches 5 feet or more in depth, a detailed plan showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of ground caving. See Control Measure G6.
- I12. Manhole entry and/or entry to any excavation greater than 5 feet deep shall be in full compliance with the confined space entry requirements of OSHA, Cal/OSHA and USD. The District shall have the authority to require the removal from the project of the foreman and/or superintendent in responsible charge of the work where safety violations occur.
- I13. During non-working hours, all trenches shall either be covered with steel plates or protected by fencing to limit access.
- I14. If complaints are received relative to unsafe conditions, identify the source, evaluate and implement appropriate corrective measures, and notify the complainant(s) of the results.
- I15. Comply with Specifications Section 01354, Hazardous Materials Procedures. This section provides for preparation and compliance with a hazardous material work plan for lead-based paint, asbestos, and PCBs. The work plan, prepared by the Contractor, will be in compliance with a series of state and federal regulations governing the use of qualified personnel, and the use of required procedures for the removal, containment, and disposal of these materials for the protection of worker health and safety and the environment.
- I16. Implement Control Measure G8 which regulates the geotechnical properties and quality characteristics of imported fill.
- I17. If complaints over hazardous conditions are received, identify the source, evaluate and implement available abatement measures, and notify the complainant(s) of the results.
- I18. Monitor for the presence of contaminated soil and/or groundwater during the course of the work. Immediately notify the Construction Manager if any suspect materials are encountered in accordance with the Contract Documents. Implement appropriate remedial measures as identified by the Construction Manager.

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
I. <u>HAZARDS AND HAZARDOUS MATERIALS</u>						
Would the Project:						
1) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6, 16
2) Create a significant hazard to the public, or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment or risk explosion?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6, 16
3) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6, 16
4) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	29, 30
5) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport, would the Project result in a safety hazard for people residing or working in the Project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
6) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
7) Expose people or structures either directly or indirectly to significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
8) Expose people to existing or potential hazards and health hazards other than those set forth above?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6, 16

No Impacts: Criteria I3, I5-I7

The ETSU Phase I Program within the WWTP is not located within a quarter-mile of a school, or within 2 miles of a public airport or private airstrip (Criteria I3 and I5); would not interfere with an adopted emergency response plan (Criterion I6); and would not expose people or structures to significant risk of loss, injury, or death involving wildland fires (Criterion I7).

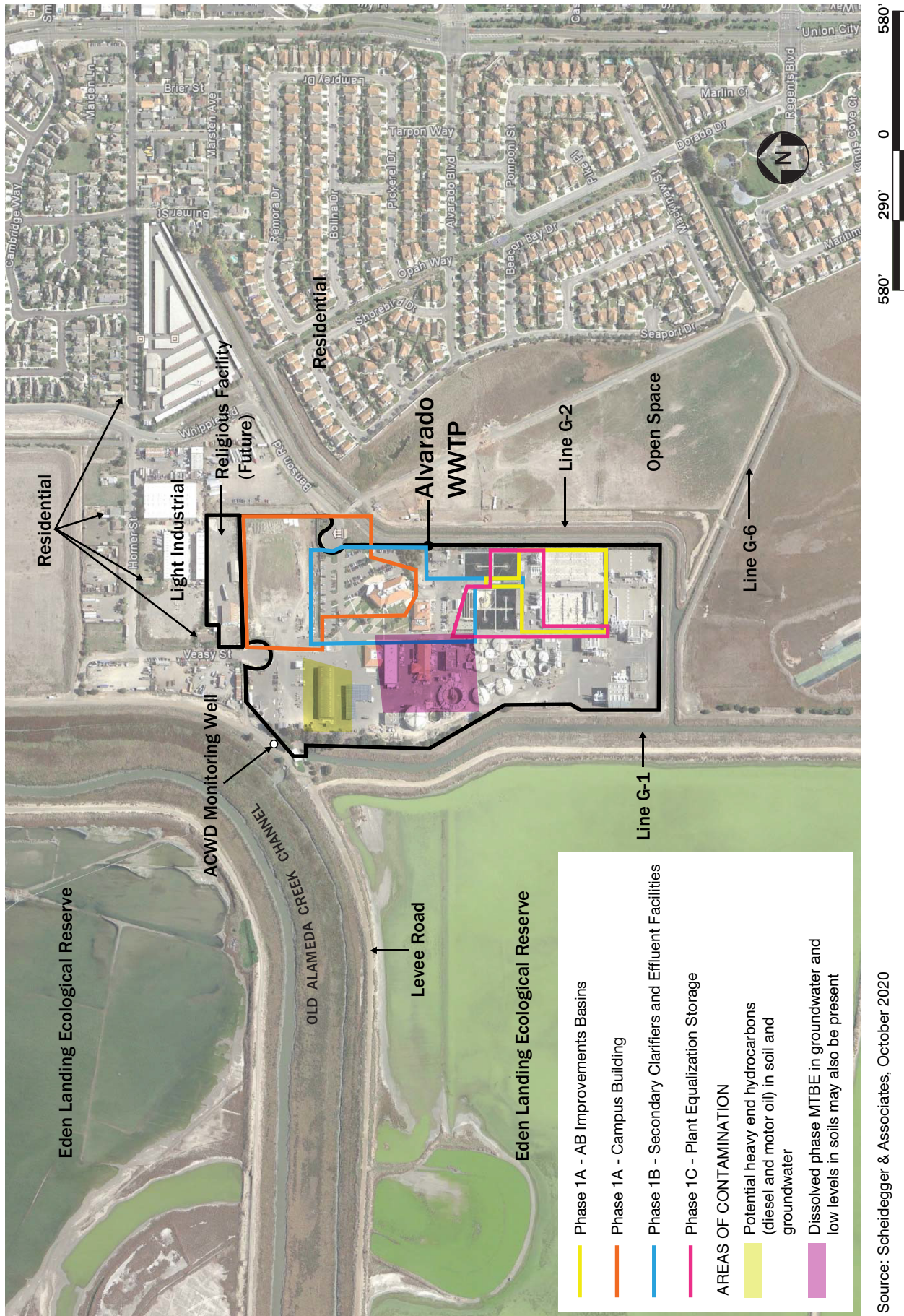
Less Than Significant Impacts: Criteria I1, I2, I4, I8

Use of Hazardous Materials and Associated Hazards: Criteria I1, I2. The use of hazardous materials would be limited during demolition and construction activities and would include such traditional materials as gasoline, diesel, oil, paint, resin, and epoxy concrete. Control Measure I1 requires the storage and handling of these materials to be in strict accordance with the Material Safety Data Sheets for the products and adherence to all local, state, and federal requirements. Control Measure I2 addresses sandblasting, spray painting, concrete cuttings and other similar activities with risk to employees or the public.

Control Measures (I3 through I6) have also been included in the Project to address routine health and safety concerns. These include use of safety provisions conforming to local, state, and federal standards (Control Measure I3), use of a Safety Program and enforcement by a safety supervisor (Control Measure I4), use of safety barriers (Control Measure I5), a written injury presentation program (Control Measure I6), and prompt emergency repairs (Control Measure I8). Given the inclusion of numerous health and safety requirements, as noted above, the impact of the Phase 1A-AB Improvements Project as well as other Phase 1 projects on health and safety concerns and hazards associated with use, transport, disposal, and potential release of hazardous materials, both individually and cumulatively, is less than significant.

Hazardous Materials Site: Criterion I4. As discussed earlier, the Alvarado WWTP is a program cleanup site due to the historical occurrence of petroleum hydrocarbon contamination at several locations. An annual groundwater monitoring is required by the ACWD.³¹

Based on the results of the groundwater monitoring program, areas of petroleum hydrocarbon contamination do exist, as shown on Figure 3-7. As can be seen from the figure, all projects in the ETSU Phase 1 Program are outside areas of known contamination, but this does not necessarily preclude the possibility that contaminants would be encountered during excavation activities. Without suitable controls, the potential for health and safety hazards would exist. However, Control Measures I7-I10 will be included in the Contract Documents to address any contaminated soil and groundwater that is encountered. The impact of the Phase 1A-AB Improvements Project as well as other Phase 1 projects on health and safety concerns and hazards to the public and environment due to historical occurrence of petroleum hydrocarbon contamination at the WWTP site, both individually and cumulatively, is less than significant.



Source: Scheidegger & Associates, October 2020

Figure 3-7. Areas of Contamination at the WWTTP

Safety and Health Hazards: Criterion I8. Criterion I8 relates to other hazards not addressed by Criteria I1 through I7 and is primarily related to the health and safety of workers and the public. The ETSU Phase 1 Program involves demolition of selected structures and electrical equipment which could expose workers to hazardous materials such as lead-based paint, asbestos, and PCBs. The Project also involves the use of heavy equipment and excavations of up to 23 feet in depth. Without suitable controls, the potential for health and safety hazards would exist.

A variety of control measures, however, have been included in the Project to address safety and health hazards. Measures include compliance with the requirements of OSHA and with all applicable local, state, and federal requirements (Control Measure I11 and I12); development and implementation of a safety program (Control Measure I3); controls over open trenches and entry pits to provide for site security and public safety (Control Measure I13); procedures for receiving and responding to unsafe working conditions should any develop (Control Measures I14). Control Measure I15 requires the Contractor to take all necessary precautions for removal, containment, and disposal of lead-based paint, asbestos, and PCBs. In addition, Control Measure I16 will be included in the Contract Documents to address and to regulate the quality of imported fill. Thus, the impact of the Phase 1A-AB Improvements Project as well as other Phase 1 projects on health and safety hazards due to hazards associated with general construction and demolition activities, both individually and cumulatively, is less than significant.

Mitigation Measures

None required.

J. HYDROLOGY AND WATER QUALITY

SETTING

Discussion below provides a summary of surface water and groundwater characteristics, and a regulatory overview.

Surface Water

Figure 1-9 shows the land use characteristics surrounding the Alvarado WWTP and the ETSU Phase I Program locations. Salt ponds within the Eden Landing Ecological Reserve and the Old Alameda Creek Flood Control Channel are the most prominent hydrologic features at this location. A series of flood control channels also exist in the area to convey drainage from upland areas.

The Old Alameda Creek Flood Control Channel is channeled downstream from its crossing at Hesperian Boulevard in Union City. The channel receives most of its flow from the Ward Creek engineered channel and Line A2, which drains the San Mateo Bridge approach south of Highway 92. The WWTP wet water outfall is located in the flood control channel as shown on Figure 1-2. The channel experiences tidal fluctuations and is bound by levees on either side. The WWTP site

is within Zone AE of the 100-year flood plain where the base flood elevation is 10 feet above mean sea level.³²

As discussed in Chapter 1, the RWQCB reissued NPDES Permit CAC038733 which regulates wet weather discharge to the Old Alameda Creek Flood Control Channel.⁷ The new order allows wet weather discharge to the channel to increase under the assumption that wet weather effluent disposal to Hayward Marsh would no longer be available.

Pursuant to the CEQA-plus requirements, the SWRCB must assess the proposed Project relative to the federal Wild and Scenic Rivers Act of 1968. There are no federally-designated wild and scenic rivers within Union City. The closest such rivers are the Merced River and Lower American River.³³ In addition, because the Phase 1 Program will not involve the construction of structures or any other regulated activities in, under, or over navigable waters of the United States no impacts relative to the Rivers and Harbors Act, Section 10 will occur.

Groundwater

As discussed in Section G, numerous geotechnical investigations have been conducted at the WWTP from 1976 to 2018 for various treatment plant expansion and improvement projects. In June 2020, a Desktop Study of geotechnical conditions was completed and included in Appendix B of the ETSU Phase 1A-AB Improvements Project 30% Design Report.⁶ The previous investigations were important input for the Desktop Study's assessment of the physical characteristics of soils and groundwater at the Alvarado WWTP site.

According to the Desktop Study, groundwater levels at the WWTP are complicated by various generations, depths and compositions of area fills, below grade structure backfills and extensive yard pipeline pipe embedment and trench backfill. In general, however, groundwater can be expected to a depth of about 4 to 6 feet below pavement surface, though shallower groundwater has been documented along the western side of the plant site (outside of planned ETSU structures). Groundwater elevations can also vary as much as 3 feet from summer to winter due to rainfall. Shallow groundwater at the plant site is of poorer quality and has been affected by petroleum-based contaminants from prior use of underground storage tanks, as discussed in the previous section. Although groundwater is not currently used as a water supply at the WWTP, it is located in a groundwater basin that has beneficial uses as identified in the Basin Plan.

The Newark Aquifer underlies the WWTP site and is a protected aquifer under the jurisdiction of ACWD as part of ACWD's ongoing Aquifer Reclamation Project. The top of the aquifer at the WWTP varies from about 50 to 60 feet below existing plant grade. The alluvial clay soils above and below the aquifer serve to confine granular soils which results in pressurized water within the aquifer at the plant. According to the Desktop Study, at times in the past the Newark Aquifer has been artesian where groundwater bubbles to the ground surface. Because of this, caution is needed for excavations reaching to or near the top of the aquifer to avoid excavation blow-in. Pursuant to ACWD Ordinance No. 2020-01 discussed below, any penetration into the aquifer requires the review and approval of ACWD.

Projects seeking funding from the SWRCB CWSRF Loan Program must also comply with the Safe Water Drinking Act and document whether or not a project has the potential to contaminate a sole source aquifer. There are four such aquifers in California with the closest being in Scotts Valley which is about 38 miles from the WWTP.³⁴ Therefore, the ETSU Phase 1 Program has no potential to contaminate a sole source of aquifer and is in compliance with the Safe Water Drinking Act.

Regulatory Overview

The regulation of water quality of surface water and groundwater quality in California is the responsibility of the SWRCB and the nine RWQCBs. Locally, the San Francisco Bay RWQCB is responsible for implementation of the Water Quality Control Plan (Basin Plan). The Basin Plan establishes beneficial uses for waterways and water bodies within the region.³³ As indicated above, any discharge of wastewater to surface water requires a NPDES permit pursuant to the federal Clean Water Act. The permit sets limits on the quality and quantity of wastewater and required monitoring .

The State and Regional Boards have also issued NPDES permits which address stormwater pollution. The SWRCB has issued two general permits, one to industrial facilities and another to construction sites. Both of these general permits require identification, implementation of best management practices (BMPs) and monitoring. According to the Basin Plan, any construction activity, including grading that would result in the disturbance of 1 acre or more of land would require compliance with the General Permit for Stormwater Discharges associated with Construction and Land Disturbance Activity (Construction General Permit). The ETSU Phase 1 Program would have a land disturbance of more than one acre and is therefore subject to these requirements.

The ACWD is the local enforcement agency for wells, exploratory holes, other excavations, and appurtenances in the cities of Fremont, Newark, and Union City under the statutory authority granted to ACWD under the Alameda County Water District Groundwater Protection Act and Alameda County Water District Ordinance No. 2010-01 (ACWD Well Ordinance).³⁴ The ACWD Well Ordinance provides a guide for implementing the regulatory authority provided by the Act.

IMPACT ANALYSIS

Control Measures Incorporated by USD.

- J1. Comply with all provisions of NPDES Permit No. CA0037869, the EBDA Outfall permit, and Permit No. CA0038733 which regulates peak wet weather flow discharge to Old Alameda Creek.
- J2. Develop and submit for USD review and approval, if necessary, plans of the proposed dewatering system for each Phase 1 project. The dewatering system plans shall be in

sufficient detail to indicate power source, sizes of pumps, piping, appurtenances, placement of wells, and the ultimate disposal point for water; and to permit USD to review the overall completeness and effectiveness of the proposed system. The submittal shall also show means of evaluating drawdown in real-time (e.g., piezometers). The control of groundwater shall be such that softening of the bottom of excavations or formation of “quick” conditions or “boils” do not occur. Dewatering systems shall be designed and operated to prevent removal of the natural soils. Sand, silt, and fine-sized soil particles shall be settled out of the water using a Baker tank or other approved method before disposal to the WWTP.

- J3. The Contractor for each Phase 1 project will be required to document extracted groundwater quantities using a flowmeter and report them to the ACWD.
- J4. Implement Control Measure G7 for temporary control of erosion and siltation during demolition and construction, and restore affected areas following completion of construction to pre-Project conditions. Route any on-site surface drainage to the WWTP drainage system.
- J5. Implement recommendations of the geotechnical consultant for excavation shoring to minimize construction dewatering for each Phase 1 project. USD will coordinate with ACWD on the dewatering plans for the Project.

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
J. <u>HYDROLOGY AND WATER QUALITY</u>						
Would the Project:						
1) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6, 16, 35
2) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6, 16, 37

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
3) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner that would:						
a) Result in a substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6, 16
b) Substantially increase the rate or amount of surface runoff in a manner which could result in flooding on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6, 16
c) 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; or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6, 16
d) Impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6, 16
4) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
5) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16

No Impacts: Criteria J4, J5

The proposed ETSU Phase 1 Program would be located in a flood hazard area at the WWTP but key structures would either be elevated above the 100-year flood plain elevation or would not be required to be elevated because they are contained and do not represent a risk of pollutant release. As discussed in Chapter 1, USD will coordinate with the ACFC&WCD in the future on levee improvements near the WWTP so that necessary improvements are made to provide needed protection to land, infrastructure, and facilities from sea level rise. Also as discussed in Chapter 1, under routine operations all drainage waters within the WWTP are routed to the plant's headworks to undergo treatment. No impact would occur relative to Criterion J4 as there would be no risk of pollutants due to the project inundation. Similarly, the Phase 1 ETSU Program would have no impact under Criteria J5, as it would not conflict or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Less Than Significant Impacts: Criteria J1-J3.

Water Quality Standards and Groundwater Quality (Criterion J1). Effluent discharges from the WWTP are regulated by two NPDES permits. Under normal operation, plant discharge to the EBDA Outfall is regulated by NPDES No. CA 0037869 and peak wet weather flow discharges to the Old Alameda Creek Channel are regulated by CA0038733. The latter permit was recently reissued by the RWQCB on October 14, 2020 and accommodates increased wet weather discharges to Old Alameda Creek due to the anticipated closure of the Hayward Marsh. Control Measure J1 provides for continued compliance by USD with these permits. Neither permit requires further modification to accommodate the ETSU Phase 1 Program.

Groundwater conditions at the WWTP were reviewed earlier in this section. Shallow groundwater of poorer quality generally exists at the WWTP at a depth of about 4 to 6 feet below pavement surface. During construction at depth, dewatering will be necessary and the shallow groundwater will be extracted and returned to the WWTP headworks pursuant to Control Measure J2. The top of the Newark Aquifer, overlain by confining alluvial clay soils, varies from about 50 to 60 feet below existing plant grades. During installation of the deep foundations in Phase 1A-Campus Building and Phase 1B-Secondary Clarifiers and Effluent Facilities the Project geotechnical reports will stipulate a minimum distance between the bottom of the foundation and top of the aquifer to assure the aquifer remains protected (Control Measure G1).

The Phase 1 Program will provide many operational benefits including increased ammonia and solids removal which will ensure water quality objectives and waste discharge requirements are met and no adverse impact will occur. Neither the Phase 1A-AB Improvements Project or other Phase 1 Program projects will have an adverse impact on groundwater or surface water quality, either individually or cumulatively.

Groundwater Supplies: Criterion J2. Criterion J2 asks whether the project will affect groundwater supplies such that sustainable groundwater management of the basin may be impeded. The Newark Aquifer underlying the WWTP site is a protected aquifer but as discussed above, ETSU Phase 1 construction activities will not affect the aquifer.

Due to the high water levels of the shallow groundwater at the WWTP site, dewatering will be required during construction. Control Measure J1 requires the Contractor to develop and submit for USD review and approval plans of the dewatering system for each Phase 1 project. Control Measure J2 requires the Contractor to implement recommendations of the geotechnical consultant for excavation shoring to minimize construction dewatering. Based on the excavation depths shown on Figure A1-A4 in Appendix A, the amount of dewatering will vary between the Phase 1 Program projects, being minimal with Phase 1A-Campus Building and most with Phase 1B-Secondary Clarifiers and Effluent Facilities. For the proposed Phase 1A-AB Improvements Project, it has been estimated that 200 to 600 gallons per minute (gpm) of dewatering would be necessary for about 12 months depending on whether watertight shoring can be achieved.³⁷

Although local shallow groundwater is of poor quality and not currently used as a water supply at the WWTP site, it is located in a groundwater basin that has beneficial uses as identified in the San Francisco Bay Basin Plan.³⁵ Groundwater will need to be removed to prepare the project sites for construction, and ongoing seepage during construction would be expected which would require removal. Use of the dewatering system would be temporary and only affect a small localized area, and would not substantially deplete groundwater supplies. Control Measure J3 requires the Contractor to document extracted groundwater quantities using a flowmeter and report them to the ACWD. The impact of the Phase 1A-AB Improvements Project and other Phase 1 Program projects on groundwater supplies such that sustainable groundwater management at the basin would be impacted is less than significant on both an individual and cumulative basis.

Drainage: Criteria 3a-3c. The ETSU Phase 1 Program will not substantially alter the existing drainage pattern of the WWTP site. Most of the improvements can be viewed as in-fill development where new equipment and process units are constructed on existing paved surfaces which must be excavated, the improvement made, and the area restored to an impervious condition. The new clarifiers are a major addition in Phase 1B, but they will replace the existing administration building resulting in a tradeoff in runoff characteristics. In Phase 1A-Campus Building, the new facility will be constructed just to the north in an area currently used for contractor staging on other WWTP projects. This area already has an improved surface which is highly impermeable to drainage waters, resulting in another tradeoff in runoff characteristics. As discussed in Chapter 1, most runoff from the WWTP site is collected in the plant's existing drainage system and conveyed to the headworks where it enters the treatment process stream. For Phase 1A-Campus Building, storm drainage from the western portion of the campus will flow directly into a drain piping system that returns water to the headworks, but storm drainage from the eastern portion of campus will flow to a bioretention basin on the eastern edge of the USD property. From there it can be discharged to the flood control channel or return to the plant's headworks. The impacts of Phase 1A-AB Improvements and other Phase 1 Program projects relative to increased runoff volumes, on an individual and cumulative basis, are less than significant. For a discussion of erosion, see Section G (Criterion G2).

Impede or Redirect Flood Flows: Criterion J3d. As discussed above, the WWTP site is within the 100-year flood plain where the base flood elevation is 10 feet above mean sea level. The surface area of new above-ground structures in the Phase 1 Program to be placed in the flood plain as is follows:

• Phase 1A-AB Improvements	12,560 square feet (ft ²)
• Phase 1A-Campus Building	35,000 ft ²
• Phase 1B-Secondary Clarifiers and Effluent Facilities	<21,319 ft ² >
• Phase 1C-Plant Equalization Storage	0
Total:	<hr/> 26,241 ft ²

The surface areas of these new above-ground facilities to be placed in the flood plain is about 26,000 square feet. Given that the WWTP site encompasses 33 acres or 1,437,480 square feet, the new structures would represent 1.8% of the total WWTP area. This negligible increase in surface area of new above-ground structures would have a less than significant impact relative to impeding or redirecting flood flows on an individual project and cumulative basis, and relative to CEQA-Plus requirements, the Phase 1 Program is compliant with Executive Order 11988 (Floodplain Management).

K. LAND USE AND PLANNING

SETTING

An update to the Union City's General Plan was adopted by the City Council on December 10, 2019.²⁶ Titled the 2040 General Plan, the document will serve the City as it manages its growth and change in the coming years. Chapter 7 of the 2040 General Plan is the Public Facilities and Services Element, which includes wastewater collection and treatment. The following goal and policies are included in Chapter 7:

Goal Public Facilities (PF)-4. Ensure adequate wastewater collection, treatment and disposal.

Policies

PF-4.1. Coordinate to ensure adequate wastewater service for new development.

PF-4.1. Require public sewer service.

PF-4.3. Renewable energy generation at wastewater treatment facility.

PF-4.4. Support USD water reclamation efforts.

IMPACT ANALYSIS

Control Measures Incorporated by USD.

None.

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
K. <u>LAND USE AND PLANNING</u> Would the Project:						
1) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
2) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16, 26

According to the Public Facilities and Services Element, these policies provide for reliable wastewater collection and treatment service for all residents and businesses in Union City through a cooperative effort with USD.

No Impact: Criteria K1, K2

The ETSU Phase 1 Program will be constructed within the WWTP site and will not divide an established community (Criterion K1). The WWTP site is zoned Civic Facility and has a Civic Facility 2040 General Plan designation. The ETSU Phase 1 Program is consistent with the 2040 General Plan, including PF-4 and supporting policies PF 4.1 through PF 4.4 and for purposes of Criterion K2 have no impact. Pursuant to CEQA-Plus requirements, the Project is not within the Coastal Zone, nor subject to the requirements of the Bay Conservation and Development Commission, and thus, provisions of the Coastal Zone Management Act do not apply. The Phase 1 Program is also compliant with the Wilderness Act.

Mitigation Measures

None required.

L. MINERAL RESOURCES

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
L. MINERAL RESOURCES						
Would the Project:						
1) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
2) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16

No Impacts: Criteria L1, L2

The proposed ETSU Phase 1 Program includes excavation activities within highly disturbed areas and would not impact any known mineral resources.

Mitigation Measures

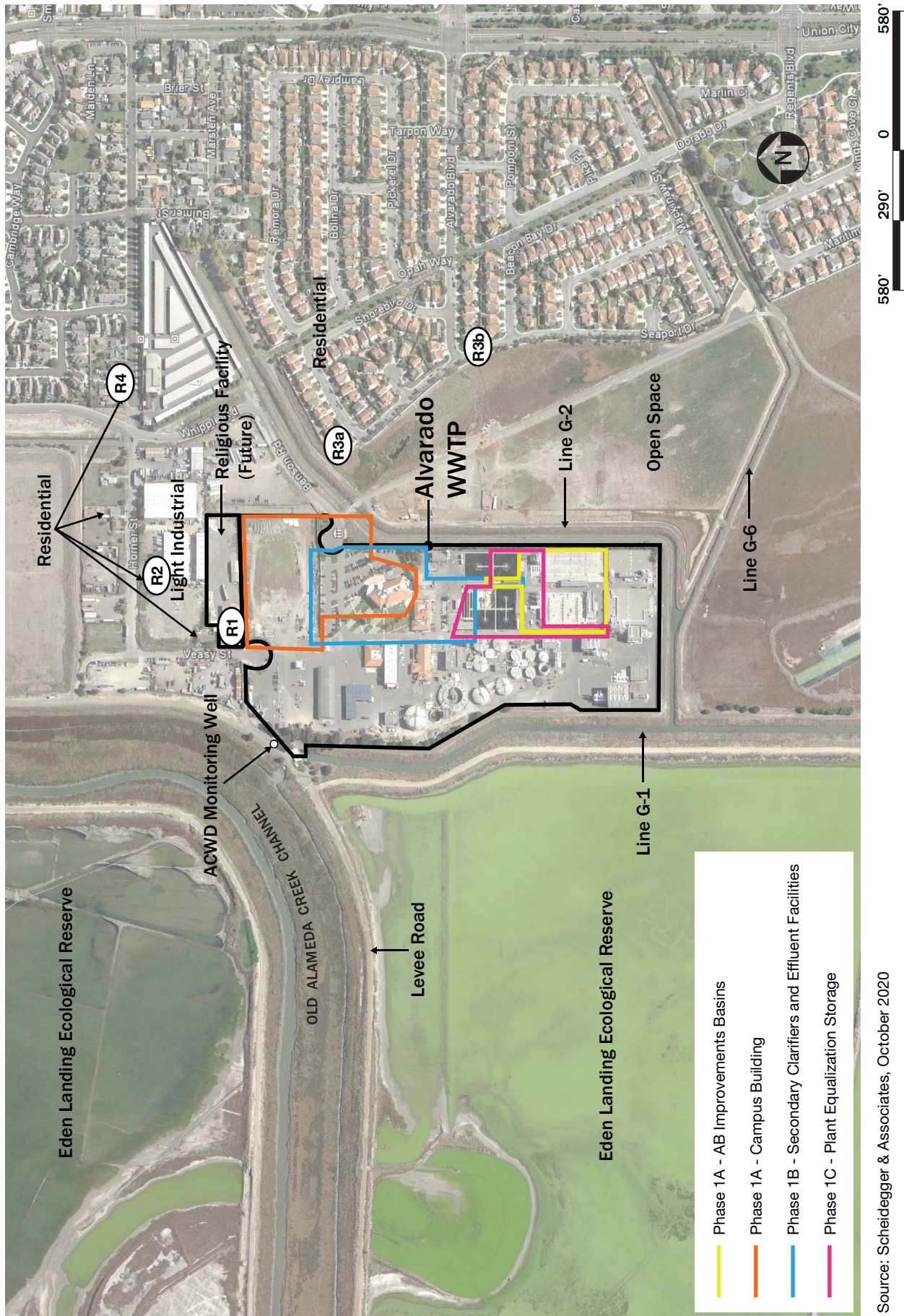
None required.

M. NOISE

A noise and vibration technical report for the proposed ETSU Phase 1 Program was prepared by Charles M. Salter Associates and is included in Appendix H.³⁹ The reader is referred to this report for a detailed discussion of the setting and impact analysis.

SETTING

Land use surrounding the ETSU Phase 1 Program site is shown on Figure 1-9 of Chapter 1 . Scattered residences exist to the north and northeast of the WWTP site while more dense residential development exists to the east. A potential religious temple is located just to the northeast of the plant site. Figure 3-8 shows the locations of the noise-sensitive receptors used



Source: Scheidegger & Associates, October 2020

Figure 3-8. Noise-Sensitive Receptor Locations

in the analysis. The noise environment in the vicinity of the WWTP is dominated by distant traffic and equipment noise. Based on ambient noise monitoring completed by Charles M. Salter Associates, measured hourly ambient noise levels L_{90} at each location were between 40 decibels (dB) and 50 dB depending on time of day. The local planning framework for the ETSU Phase 1 Program which is discussed thoroughly in Appendix H, consists of USD's existing Conditional Use Permit with Union City (UP-5-95),⁴⁰ the Union City General Plan²⁶ and the Union City Noise Ordinance.⁴¹

IMPACT ANALYSIS

Control Measures Incorporated by USD

M1. Comply with UP-5-95 which limits construction activity at the WWTP to the following hours:

Monday through Friday	8:00 a.m. to 8:00 p.m.
Saturday	9:00 a.m. to 8:00 p.m.
Sundays and holidays	10:00 a.m. to 6:00 p.m.

Construction activity would need to meet the requirements of Section 9.40.053 of the City's Noise Ordinance. Construction noise limitations would include at least one of the following:

- A. No individual piece of equipment shall produce a noise level exceeding 83 decibels (dBA) at a distance of 25 feet. If the device is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close to 25 feet from the equipment as possible.
- B. The noise level at any point outside the property plane of the project shall not exceed 86 dBA.

M2. Each of the 11 treatment blower fans in the Phase 1A-AB Improvements Project and Phase 1C-Plant Flow Equalization shall be selected to generate a maximum sound level of 85 dB (A-weighted sound pressure) at a distance of 3 feet from the outdoor emanating point (e.g., discharge opening).

IMPACT ANALYSIS

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
M. NOISE Would the project result in:						
1) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	26, 39, 40, 41
2) Generation of excessive groundbourne vibration or groundborne noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	26, 39, 40, 41
3) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16

No Impact: Criterion M3

The Project is not within the vicinity of an airport or private airstrip and no impact will occur.

Less Than Significant with Mitigation Incorporated: Criteria M1, M2

The ETSU Phase 1 Program includes upgrades to operational facilities, demolition of the existing administration building and construction of a new campus building. The impact analysis addresses the following potential sources of noise and vibration:

- Operational truck traffic noise
- Operational noise from blower fans and campus building heating, ventilation, and air conditioning (HVAC) equipment
- Demolition and construction noise and vibration
- Operational groundbourne vibration
- Construction groundbourne vibration

Operational Truck Traffic Noise. Currently, the WWTP produces about 4 20-cubic yard (cy) trucks per day of biosolids which must be transported off site. An additional 2 trucks per day are estimated to be required by the time Phase 1 is complete. The ETSU Phase 1 Program will not cause an increase in employees and in Phase 1A the new campus building will merely be relocated to its new location.

Cumulatively, truck traffic alone is not expected to increase noise levels on existing roadways by more than one decibel and would not be expected to increase existing noise beyond the DNL 60 dB (day-night average sound level) prescribed in the Union City General Plan as normally acceptable for residential development. The ETSU Phase 1 Program will have a less than significant impact on noise due to operational truck traffic.

Operational Equipment Noise. All ETSU Phase 1 Program projects, except Phase 1B, have operational sources of noise. These include treatment facility fans and building ventilation:

- **Treatment Facility Fans.** These fans are associated with the Phase 1A-AB Improvements Project and Phase 1C-Plant Equalization Storage. For the analysis, worst-case conditions were assumed that all 11 treatment facility blowers operate simultaneously and all might have direct line-of-sight to sensitive receptors. The blower noise could reach 47 dB at the nearest receptor which would meet the City Ordinance limit of 50 dB for nighttime noise. The calculated 24-hour average daily noise (with a penalty for nighttime noise) would be DNL 53 dB which would meet the City General Plan land-use compatibility standard of DNL 60 dB for neighboring residential areas. Most likely, noise levels will be further below the calculated level as some shielding is expected to be provided by intervening structures, buildings, and the concrete block sound wall along Receptors R3a/3b. In addition, directivity of the blower outlets could be utilized to direct the noise away from sensitive receptors.
- **Campus Building HVAC.** Mechanical equipment associated with the Phase 1A-Campus Building project could exceed noise standards. A detailed analysis and specific mitigation measures cannot be assembled until the mechanical systems are designed at the time of construction document plan review. Therefore, a performance criterion is proposed to reduce the potential noise impact. Based on the current site plan and the expected equipment setback from the nearest receptor (generally R1 and the potential future religious facility), we expect that the equipment could be designed to meet the City standards. Based on our experience, equipment needed to serve buildings of this size may generate noise levels between 75 dB and 85 dB at a distance of 3 feet. At a potential setback distance of 100 feet and located behind a noise barrier or parapet wall that breaks line-of-sight, these noise levels would be reduced to between 40 dB and 50 dB. If operated during daytime hours (estimated to be 7 AM to 7 PM), the average daily noise level would also be quieter than DNL 50 dB. Even if the equipment ran 24 hours per day, it would only reach DNL 56 dB. These levels would meet City standards.

Operational noise from the ETSU Phase 1 Program is expected to meet City standards, but mitigation measures are needed to assure impacts are reduced to less-than-significant levels.

Mitigation Measure NOI-1. Control Measure M2 provides that each of the 11 treatment blower fans are to be selected to generate a maximum sound level of 85 dB (A-weighted sound pressure) at a distance of 3 feet from the outdoor emanating point (e.g., discharge opening). Alternately, a refined analysis of the final design could be performed to address the actual configurations and/or incorporate additional noise reduction measures (e.g., noise barriers, duct silencers) to reduce noise to meet the City noise standards.

Mitigation Measure NOI-2. Cumulatively with other operational noise sources, the Phase 1A-Campus Building ventilation equipment is to be designed to meet the applicable noise limits. A detailed noise analysis of the final design will be performed to address the actual configurations and/or incorporate additional noise reduction measures (e.g., noise barriers, duct silencers) to reduce noise to meet the City noise standards. A qualified professional should be involved during the design phase of the project to advise the design team regarding effective noise-reduction measures, if needed.

Construction Noise. Construction equipment and activities could generate noise that exceeds local standards. For the ETSU Phase 1 Program, typical construction activities are associated with all Phase 1 projects and include use of heavy equipment for demolition, excavation, grading, foundation construction, building erection, and other activities. These noise generating activities, though temporary, could increase ambient noise levels at neighboring sensitive land uses.

For Phase 1A-Campus Building and Phase 1B-Secondary Clarifiers and Effluent Facilities, deep foundations consisting of structural piles or piers will be required for the foundations. Some installation methods such as impact driving can generate high noise levels and exceed the City daytime construction noise limit of 86 dB, through alternative methods can be used in some situations to moderate noise levels.

Construction truck traffic noise is not addressed by City Standards. However, the cumulative construction truck traffic plan projects that the excavation and related activities could result in up to 200 truck trips per day at the site under peak worst case assumptions. This truck traffic alone is estimated to generate noise levels of approximately DNL 58 dB (50 feet away from the roadway centerline), well below the City standard of DNL 60 dB. Cumulatively, this truck traffic would not be expected to significantly increase noise levels on existing roadways. Using 16 cy trucks instead of 10 cy would result in fewer trucks and reduced noise levels.

Construction impacts are considered to be short-term significant impacts which will vary through the Phase 1 construction schedule. Mitigation measures outlined below will reduce construction noise to be less than significant.

Mitigation Measure NOI-3: Construction-related activities for all Phase 1 projects are to be conducted in accordance with the following:

1. Properly muffle and maintain all construction equipment powered by internal combustion engines.
2. Prohibit unnecessary idling of combustion engines.
3. Locate all stationary noise-generating construction equipment such as air compressors as far as practical from existing nearby residences and other noise-sensitive land uses. Such equipment shall also be acoustically shielded.
4. Select quiet construction equipment, particularly air compressors, whenever possible. Fit motorized equipment with proper mufflers in good working order.
5. Residences adjacent to project sites shall be notified in advance in writing of the proposed construction schedule before construction activities commence.
6. The Contractor shall designate a "noise disturbance coordinator" responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of any noise complaint (e.g., starting too early, bad muffler, etc.) and shall require that reasonable measures be implemented to correct the problem. A telephone number for the disturbance coordinator shall be posted at the construction site.

Mitigation Measure NOI-4: For Phase 1A-Campus Building, a quieter deep foundation installation method such as drilled displacement columns, auger cast piles, or soil mixing (rather than impact pile driving) is to be used.

Mitigation Measure NOI-5: A detailed noise mitigation plan shall be completed for the Phase 1B-Secondary Clarifiers and Effluent Facilities Project as the design is refined. The plan will include an analysis of alternative and quieter deep foundation installation methods. If impact pile driving is required for structural reasons due to soil conditions, a more detailed analysis shall be performed to account for the anticipated type and size of the piles, quantity, locations, and potential noise reduction methods such as temporary sound barriers, shrouds, or jackets, and monitoring if needed.

Operational Groundborne Vibration. Vibration equipment associated with the Phase 1 Program has the potential to generate vibration at neighboring properties which would be a significant impact. However, with the following measure, this impact would be less than significant.

Mitigation Measure NOI-6. Vibration-generating equipment is to be adequately vibration isolated using spring isolation mounts and hangers per American Society of Heating,

Refrigerating, and Air Conditioning Engineers (ASHRAE) Guidelines to reduce groundborne vibration levels at neighboring properties.

Construction Groundborne Vibration. Construction activities would include site preparation work, excavation, foundation work, and new building framing. Short-term vibration levels would increase but would vary depending on soil conditions, construction methods, and equipment used at the site. It is understood that, if employed, vibratory pile driving would not be located within 100 feet of any sensitive receptors. Thus, no vibration impact from pile driving is expected. In practice, construction vibration levels from other sources are not expected to exceed the threshold limits related to building damage at any sensitive receptor. Only the "vibratory roller" might exceed the threshold limits related to human perception at the receptors closest to the proposed campus building (Phase 1A).

Construction vibration impacts are only expected to be temporary and potentially significant for Phase 1A-Campus Building. Mitigation measures outlined below are expected to reduce construction vibration to the extent feasible, to be less than significant.

Mitigation Measure NOI-7: Limit construction activities with the highest potential to produce significant vibration (e.g., such as vibratory roller) to less sensitive daytime hours (9 AM to 5 PM). In addition, to reduce potential vibration impact from construction-related activities, they are to be conducted in accordance with the following (and as required by the City Municipal Code):

1. Avoid the use of vibratory rollers (i.e., compactors) within 25 feet of buildings that are susceptible to damage from vibration.
2. Schedule construction activities with the highest potential to produce vibration to hours with the least potential to affect nearby institutional, educational, and office uses that the Federal Transit Administration identifies as sensitive to daytime vibration (ETA 2006).
3. Notify neighbors of scheduled construction activities that would generate vibration that might be perceptible to people. This includes vibratory rollers, vibratory drivers, and heavy equipment to be used within 100 feet of sensitive receptors.

N. POPULATION AND HOUSING

IMPACT ANALYSIS

Control Measures Incorporated by USD

None.

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
N. <u>POPULATION AND HOUSING</u>						
Would the Project:						
1) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
2) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16

No Impacts: Criteria N1-N7

The ETSU Phase 1 Program is intended to accommodate service area planned growth and will not increase the currently permitted capacity of 33 mgd to be exceeded as shown in Table 1-2 of Chapter 1. The program will not induce substantial unplanned population growth (Criterion N1). The ETSU Phase 1 Program will also not displace existing people or housing as it will be constructed at the existing WWTP site (Criterion N2). Relative to CEQA-Plus requirements and environmental justice, the Phase 1 Program does not involve an activity that is likely to be of particular interest to or have particular impact upon minority, low-income, or indigenous populations.

Mitigation Measures

None required.

O. PUBLIC SERVICES

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
O. <u>PUBLIC SERVICES</u>						
Would the Project:						
1) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which would cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:						
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16

No Impacts: Criteria O1a-O1e

The proposed ETSU Phase 1 Program will have no public service impacts as no construction of additional governmental facilities not already analyzed in this IS/MND are required.

Mitigation Measures

None required.

P. RECREATION

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
P. <u>RECREATION</u> Would the Project:						
1) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
2) Include recreational facilities or require the construction of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16

No Impacts: Criteria P1, P2

The proposed ETSU Phase 1 Program will take place entirely within an existing WWTP and will not increase the use of local parks nor will it involve construction of new recreational facilities.

Mitigation Measures

None required.

Q. TRANSPORTATION/TRAFFIC

A transportation impact analysis (TIA) was completed for the proposed ETSU Phase 1 Program by Abrams Associates and is included in Appendix I.⁴² The Appendix should be consulted for a full discussion of environmental setting and impact analysis.

SETTING

A summary of the roadways, traffic conditions, and other existing transportation characteristics in the vicinity of the Alvarado WWTP is provided below. Figure 1-7 in Chapter 1 shows the truck

access route from I-880 to the plant. Trucks would exit at Whipple Road, west to Union City Boulevard, south to Bettencourt, west to Whipple, and south to the WWTP. After crossing Bettencourt Way, trucks can either turn west on Horner and then south on Veasy Street or the trucks can continue south on Whipple as it transitions to Benson Road. These are the roadway segments included in the TIA.

Existing Roadway Network

Whipple Road is an east-west arterial with a raised center median. The posted speed limit is 40 mph, on-street parking is permitted, and striped bicycle lanes are provided in both directions. Just west of the Whipple/Union City Boulevard, the roadway ends.

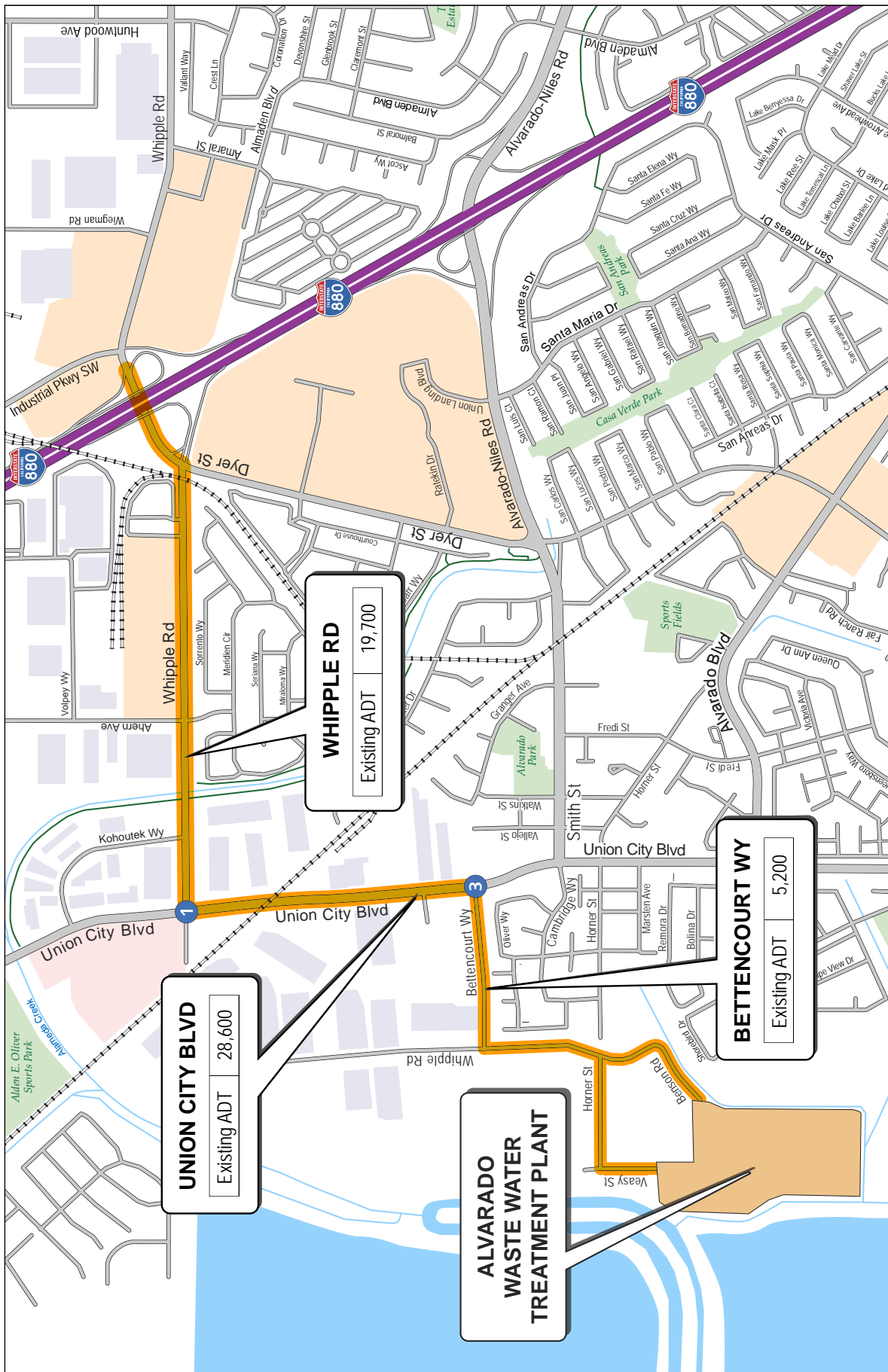
Union City Boulevard is a north-south four-lane arterial with a raised center median. It is a major truck route and in the WWTP area it is fronted by a mix of light industrial uses and distribution centers. The posted speed limit is 45 mph for most of the boulevard's length, bicycle lanes are provided between Alvarado Boulevard and Whipple Road, and on-street parking is available for most vehicles north of Horner Street.

Bettencourt Way is an east-west collector street that connects Union City Boulevard and Whipple Road. Bettencourt Way provides primary access to the WWTP. The posted speed limit is 35 mph, on-street parking is permitted, and the street includes some multi-family residential uses along portions of the roadway segment, particularly near the intersection with Union City Boulevard.

Existing Roadway Segment Capacity Conditions

The TIA summarizes the methodology used in the analysis of roadway segments. Level of service (LOS) is used which is an expression, in the form of a scale, of the relationship between the capacity of a roadway segment to accommodate the volume of traffic moving through it at any one time. As discussed in the TIA, under such conditions, there is a general instability in the traffic flow, which means that relatively small incidents (e.g., momentary engine stall) can cause considerable fluctuations in speeds and delays that lead to traffic congestion. This near-capacity situation is labeled LOS E. Beyond LOS E, the roadway segment capacity has been exceeded, and arriving traffic may exceed the ability of the roadway to accommodate it.

Figure 3-9 shows the roadway segments under analysis and their existing average daily traffic (ADT) conditions. Based on the analysis in the TIA, under existing ADT conditions, Whipple Road and Bettencourt Way both operate under LOS A and Union City Boulevard LOS C, which are acceptable daily traffic operations (mid-LOS D) or better during the weekday. Table 3-5 summarizes the existing AM and PM peak hour conditions. As indicated, the LOS under directional peak hour LOS conditions is acceptable with the exception of southbound Union City Boulevard during AM peak hour and eastbound Bettencourt Way in the PM peak hour which are at LOS E. Because the ETSU Phase 1 Program would not result in any appreciable change to long-term operational traffic volume at the WWTP (only an increase in near term construction



Source: Abrams Associates, February 2021

Figure 3-9. Average Daily Traffic Volumes for Existing Truck Route Segments

volumes), a more detailed analysis of current and future intersection LOS conditions was not conducted.

Table 3-5: Existing Directional Peak Hour Level of Service Conditions

Study Roadway Segments	Roadway Classification	Peak Hour	Existing Conditions			
			WB/SB	LOS	EB/NB	LOS
Whipple Road	Arterial – 2 Lanes	AM	1410	C	630	A
		PM	1230	B	740	A
Union City Boulevard	Arterial – 2 Lanes	AM	1631	E	1145	B
		PM	1321	C	1538	D
Bettencourt Way	Collector – 1 Lane	AM	231	A	107	A
		PM	116	A	409	E

Source: Abrams Associates, January 2021

Pedestrian and Bicycle Facilities

Union City Boulevard between Alvarado Boulevard and Paseo Padre Parkway is designated as a "planned" segment of the San Francisco Bay Trail. No marked bicycle lanes are provided along this segment of Union City Boulevard; bicyclists share the road with automobile traffic with "Share the Road" signage. The funded Union City Boulevard Class 2 Bike Lanes Gap Closure Project would construct Class 2 bike lanes along this segment of Union City Boulevard from about 600 feet south of Alvarado Boulevard to Fremont City limits to close a two-mile gap in the existing Class 2 facilities and would include a two-foot wide painted striped buffer between the bike and auto lanes. Striped bicycle lanes exist along Bettencourt Way. No other bicycle lanes exist in the project area. Pedestrian facilities include sidewalks, crosswalks, and pedestrian signals. Sidewalks are provided on most of the existing roadways in the study area, with the exception of Benson Road, Horner Street and Veasy Street. Also note there are marked crosswalks and pedestrian signal heads at the signalized Union City Boulevard study intersections.

Transit Service

Bus transit service in the project area is provided by AC Transit and Union City Transit with the nearest bus stops located on Union City Boulevard. AC Transit provides Transbay service within the project vicinity. Transbay routes provide commuter service on weekdays between downtown

San Francisco and East Bay communities. They typically operate westbound into San Francisco during the morning commute hours and eastbound out of San Francisco during the evening commute hours. Routes 97 and SB have stops within the project vicinity on Union City Boulevard in the vicinity of Bettencourt Way. Route SB only operates between 5:30 AM and 8:00 AM during the morning commute and between 4:00 PM and 7:00 PM during the evening commute. Frequency of service is approximately every 20 minutes in the morning and every 30 minutes in the evening.

Union City Transit provides local service exclusively within Union City. Route 1 operates through the project vicinity along Union City Boulevard. Route 1 provides direct access to the Union City BART station and the Union Landing Shopping Center via Alvarado-Niles Road. Transfers to AC Transit lines 97 and 210 provide connections to neighboring cities and beyond. Lines 5, 7, and 9 operate along Union City Boulevard, and provide service to areas to the north, Union City BART, and areas to the south of the project area via Dyer Street, Union City Boulevard, and Alvarado-Niles Road.

Regulatory Context

The California Department of Transportation (Caltrans) has jurisdiction over State highways. Therefore, Caltrans controls all construction, modification, and maintenance of State highways and freeways such as I-880. Any improvements to these roadways would require Caltrans' approval. The Guide for the Preparation of Traffic Impact Studies provides consistent guidance for Caltrans staff who view local development and land use change proposals. The Guide also informs local agencies about the information needed for Caltrans to analyze the traffic impacts to state highway facilities which include freeway segments, on- or off-ramps, and intersections.

The Circulation Element included in the City of Union City General also identifies roadway and transit goals and policies that have been adopted to ensure that the transportation system of the City will continue to have adequate capacity to serve planned growth.⁹ The City of Union City identifies a threshold of mid-LOS D for arterial and collector routes within the city (excepting regional routes such as I-880, Mission Boulevard, and Decoto Road).

IMPACT ANALYSIS

Control Measures Incorporated by USD

- Q1. The Contractor selected for each ETSU Phase 1 Program project shall prepare a traffic control plan (TCP) for review and approval by USD. The TCP will comply with USD standard specifications and address inconvenience to the general public, traffic flow with necessary safety devices and measures, obstruction of fire lanes, parking, and haul routes.
- Q2. USD shall allow a maximum of 5 outbound trucks per hour from the WWTP during the peak commute period between 4:00 and 6:00 PM, thereby restricting the truck traffic to

no more than 1% of the traffic volumes. Please note this restriction would apply to all construction phases (starting in mid-summer 2021 through quarter 1 of 2026) except for ETSU Phase 1C which has a much lower impact (approximately 4 trucks per day) and will take place after all other projects are completed.

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
Q. <u>TRANSPORTATION/TRAFFIC</u>						
Would the Project:						
1) Conflict with a plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	42
2) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	42
3) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	42
4) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	42, 43

ETSU Phase 1 Program Trip Generation

As a basis for assessing traffic impacts associated with the ETSU Phase 1 Program, additional vehicle trips are estimated for both construction and operation.

Construction Trip Generation. The proposed ETSU Phase 1 Program will generate a substantial amount of truck and worker traffic to and from the WWTP site during construction. In lieu of analyzing each Phase 1 Program individually, the approach was to identify the peak construction period during the approximate 6-year Phase 1 construction schedule when Phase 1 Program phases overlap, thus increasing traffic generation that would otherwise be experienced. In this manner, if impacts were found to be less than significant under conservative worst case conditions, then impacts for individual Phase 1 projects and during other times during construction would be less. The peak construction period (Figure 1-8) was judged to be during the first half of 2023 when the construction schedules for Phase 1A projects (AB Improvements and Campus Building) and Phase 1B (Secondary Clarifiers and Effluent Facilities) likely will overlap.

The forecast trip generation during this peak construction period is presented in Table 3-6.

Table 3-6: Peak Period Construction Trip Generation

Trip Generation Component	Daily Trips			Peak Hour Trips				
	Vehicle Trips	PCE ^a Rate	PCE Daily Trips	PCE Peak Hour Trips	AM In	AM Out	PM In	PM Out
Workers ^b	160	1.0	160	60	60	0	0	60
Trucks	200	2.0	400	40	20	20	20	20
Totals	360		560	100	80	20	20	80

^a The Passenger Car Equivalent (PCE) assumption for trucks is based on recommendations in the Highway Capacity Manual and assumes that a portion of the project generated trucks would be empty and that there would be a mixture of truck types.

^b The Vehicle trips associated with the workers represent 80 workers' access to the site and assumes that 75% of employee trips occur during the peak hour.

Source: Abrams Associates, 2021

The total trip generation reflects all vehicle trips that would be counted at the Phase 1 Program access driveways both inbound and outbound. The Phase 1 Program is forecast to generate approximately 100 passenger car equivalent (PCE) vehicle trips during the AM and PM peak hours conservative worst case assumption. For the purposes of determining the reasonable worst-case impacts of traffic on the surrounding street network from a proposed project, the trips generated by this proposed program are estimated for the peak commute hours that occur from 7:15 AM and 8:15 AM and from 4:45 PM and 5:45 PM. These peak hours represent the peak hours of "adjacent street traffic" which are the time periods when the Program traffic would generally contribute to the greatest amount of congestion.

Operation Trip Generation. As discussed in Chapter 1, the proposed ETSU Phase 1 Program will not result in an increase in long-term employees at the WWTP so no additional long-term changes to traffic generation are forecast to occur. However, the USD anticipates an increase in the amount of biosolids produced by the facility. Currently, approximately 4 20-cy trucks a day of biosolids are produced at the existing WWTP. With the ETSU program improvements, the trip generation is forecast to increase to 6 trucks per day by 2028, the first year after Phase 1 construction is completed, for an increase of about 2 trucks per day.

Less Than Significant Impacts: Criteria Q1-Q4.

Conflict with a Plan Ordinance or Policy Addressing the Circulation system: Criterion Q1. The Circulation Element of the City of Union City General Plan identifies a threshold of mid-LOS D for arterial and collector routes within the city. This section evaluates the existing (pre-Covid) traffic conditions with the addition of construction traffic from the Phase 1 Program under conservative assumptions.

Construction. The average daily traffic capacity calculations for the existing plus Program scenario are shown in Table 3-7 and the peak hour traffic capacity calculations are shown in Table 3-8. As shown in these tables, with the addition of Phase 1 Program traffic all study segments would continue to have acceptable conditions (mid-LOS D or better) with the exception of southbound Union City Boulevard during the AM peak hour and eastbound Bettencourt Way in the PM peak hour. During the AM peak hour southbound Union City Boulevard would continue to operate at LOS E with the addition of Project traffic and the volumes would be increased by less than 2%. However, during the PM peak hour the eastbound segment of Bettencourt Way is forecast to degrade from LOS E to LOS F and the Phase 1 Program is forecast to increase the volumes by about 10%.

Table 3-7: Existing Plus Program Average Daily Traffic (ADT) Level of Service Conditions

Study Roadway Segments	Roadway Classification	Existing		Existing Plus Program	
		ADT	LOS	ADT	LOS
Whipple Road	Arterial – 4 Lanes	19,700	A	20,153	A
Union City Boulevard	Arterial – 4 Lanes	28,600	C	29,053	D
Bettencourt Way	Collector – 2 Lanes	5,200	A	5,760	B

Source: Abrams Associates, 2021

Table 3-8: Existing Plus Program Directional Peak Hour Level of Service Conditions

Study Roadway Segments	Roadway Classification	Peak Hour	Existing Conditions				Existing Plus Program Conditions			
			WB/SB	LOS	EB/NB	LOS	WB/SB	LOS	EB/NB	LOS
Whipple Road	Arterial – 2 Lanes	AM	1410	C	630	A	1450	D	650	A
		PM	1230	B	740	A	1250	B	780	A
Union City Boulevard	Arterial – 2 Lanes	AM	1631	E	1145	B	1671	E	1165	B
		PM	1321	C	1538	D	1341	C	1578	D
Bettencourt Way	Collector – 1 Lane	AM	231	A	107	A	311	C	127	A
		PM	116	A	409	E	136	A	489	F

Source: Abrams Associates, 2021

The increase in truck traffic as a result of construction activities associated with the proposed ETSU Phase 1 Program has been quantified assuming the worst-case scenario with the amount of trucks and workers that would occur during any phase of construction, over an approximate 6-year construction period. Control Measures Q1 and Q2, however, address this issue.

Control Measure Q1 requires the selected Contractor(s) for each ETSU Program phase to prepare a TCP for USD review and approval prior to start of construction. The TCP will address needed traffic controls, safety measures, and haul rates acceptable to the City. Based on the analysis in

the TIA, Control Measure Q2 has been incorporated into the project to restrict outbound truck traffic from the WWTP to no more than 5 trucks per hour during the peak commute period between 4:00 and 6:00 PM, thereby restricting the truck traffic to no more than 1% of the traffic volume on eastbound Bettencourt Way. This restriction would apply to all construction phases (starting in mid-summer 2021 through quarter 1 of 2026) except for ETSU Phase 1C-Plant Equalization Storage which has a much lower impact (about 2 trucks per day) and will take place after all other projects are completed. The impact of the Phase 1 Program relative to Criterion Q1 and increased construction traffic is less than significant.

The weekday travel is expected to begin around 8:00 AM and end around 4:00 PM, though workers would typically begin arriving around 7:00 AM to prepare for the day's activities. The construction worker arrival peak would occur between 6:30 AM and 7:30 AM, and the departure peak would occur between 4:00 PM and 5:00 PM. As discussed in Chapter 1, because the WWTP has limited space for support functions, construction personnel will need to utilize off-site parking. It is expected that off-site parking will either be within walking distance to the WWTP or shuttle service will bring workers to and from the construction site. It is expected these provisions will soften traffic impacts that may otherwise occur. Therefore, the worker traffic to and from the site on a project-level or cumulative basis would not be expected to result in significant impacts or decreased traffic safety.

Operation. As discussed earlier, the ETSU Phase 1 Program will not cause an increase in employees and in Phase 1A the new campus building will merely be relocated to a new site within the WWTP. By the time Phase 1 is complete, there will be about 2 additional trucks per day required to off-haul biosolids produced by the facility. This number of trucks would increase long-term traffic volumes on roadways in the area by less than 1%, would not result in any noticeable changes to traffic operations in the area, and represents a less than significant impact.

Pedestrian and Bicycle Impacts. The proposed ETSU Phase 1 Program could generate additional pedestrian and bicycle traffic in the area from employees who may choose to travel by alternative modes, thereby potentially increasing conflicts between vehicles, bicycles, and pedestrians. However, although the proposed Phase 1 Program may increase pedestrian and bicycle traffic in the vicinity, it is not expected to significantly impact or change the design of any existing facilities or create any new safety problems for pedestrians or bicyclists in the area.

Transit Impacts. The proposed Phase 1 Program would not interfere with any existing bus routes and would not remove or relocate any existing bus stops. The proposed Phase 1 Program could also potentially help support existing bus service with additional transit ridership and would not conflict with any transit plans or goals of Alameda County. The amount of additional ridership from the proposed Phase 1 Program would not be expected to significantly impact existing bus operations in the area. Therefore, the impact of the Phase 1 Program on existing transit operations (or adopted plans related to transit) would be less than significant.

Conflict with CEQA Guidelines Section 15064.3 Subdivision (b): Criterion Q2

The proposed ETSU Phase 1 Program does not conflict with CEQA Guidelines Section 15064.3 Subdivision (b) which includes VMTs as a tool for assessing transportation impacts. While the Union City and Alameda County have not formally adopted screening criteria, various other agencies have interpreted the screening criteria in the CEQA guidelines as follows:

"Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, the following types of projects should be expected to cause a less-than-significant impact under CEQA and would not require further VMT analysis:

iv. Public facilities (e.g. emergency services, passive parks (low-intensity recreation, open space), libraries, community centers, public utilities and government buildings."

Therefore, this project would be considered a public utility project which can, therefore, be assumed to have a less-than-significant impact on VMT under CEQA and would not require additional VMT analysis.

Increased Hazards: Criterion Q3

Emergency Access: Criterion Q4

Criteria Q3 and Q4 addressed substantial increased hazards due to a geometric design feature of the project and effects on emergency access. Access to the WWTP site will continue to be via the two existing entrances on Benson Road and Veasy Street. Phase 1A-Campus Building will affect internal site circulation. However, no internal site circulation or access issues have been identified that would cause a traffic safety problem or any unusual traffic congestion or delay. As discussed Chapter 1 under Phase 1A-Campus Building, USD may acquire the Benson Road and Veasy Street cul-de-sacs and modified site plans have been developed (see Figures 1-5). As these cul-de-sacs currently provide turnaround space for Alameda County Fire Department (ACFD) vehicles which services the City of Union City, this acquisition by USD and incorporation into the campus site plan could adversely affect ACFD services, create unnecessary hazards, and affect emergency access. However, site planning provides for ACFD trucks to utilize entrance gates at either Benson Road or Veasy Street, thus providing unimpeded circulation through the campus site. During preliminary design, ACWD was consulted on the cul-de-sacs and a variety of other issues and had no issues with USD acquisition of the cul-de-sacs.⁴² Otherwise, no internal site circulation or access issues have been identified that would cause a traffic safety problem or any unusual traffic congestion or delay. All lane widths within the site would meet the minimum width that can accommodate emergency vehicles but the final emergency vehicle access plan would require approval from the ACFD. The impact is less than significant.

R. TRIBAL CULTURAL RESOURCES

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
R. <u>TRIBAL CULTURAL RESOURCES</u>						
1) Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 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), or	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16, 25
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 Resource Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16, 25

No Impacts: Criteria F1(a), F1(b)

Based on the Phase 1 Cultural Resources Evaluation discussed in Section E, no tribal cultural resources are known to exist within the ETSU Phase 1 Program area. Construction activities will occur in a disturbed area. Mitigation measures (ARCH 1-ARCH 5) provide for crew training, spot checking by an archaeologist, and protocol for accidental discovery of archaeological resources and human remains during construction. The ETSU Phase 1 Program will have no impact to a tribal cultural resource.

S. UTILITIES AND SERVICE SYSTEMS

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact		Information Sources
S. UTILITIES AND SERVICE SYSTEMS							
Would the Project:							
1) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		16
2) Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		16
3) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		16
4) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		16

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact		Information Sources
5) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		16

No Impact: Criteria S1-S5

The proposed ETSU Phase 1 Program will not require the construction or relocation of wastewater, water or other utilities (Criterion S1) or wastewater treatment capacity (Criterion S3) except for the actual program construction that is analyzed in this IS/MND. Any water used during construction would be minor, would be available from an on-site service, with no impact to local water supplies (Criterion S2). Standards measures in the construction industry are to have any solid waste materials generated (including demolition) recycled to the extent possible with disposal of the remainder at a permitted landfill facility (Criteria S4 and S5). Therefore, no impact will occur.

T. WILDFIRE

IMPACT ANALYSIS

Control Measures Incorporated by USD

- T1. Follow the requirements in California Code of Regulations, Title 8, Construction Safety Orders, Article 36, and General Safety Orders Article 88 for fire prevention.
- T2. Furnish and maintain fully charged fire extinguishers on the job site. When work is being performed that generates sparks or open flame activity, appropriate fire extinguishers shall be available at the specific work site for use in case of fire. All employees shall be trained to use fire extinguishers.

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficial Impact	Information Sources
T. WILDFIRE If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:						
1) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
2) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16, 38
3) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16
4) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, and as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16, 38

No Impacts: Criteria T1-T4

The Alvarado WWTP is not located within or near lands classified as very high fire hazard severity zones and the Phase 1 Program will have no impacts relative to Criteria T1-T4.³⁸ The contractor will comply with required fire prevention measures (Control Measures T1 and T2).

U. MANDATORY FINDINGS OF SIGNIFICANCE

IMPACT ANALYSIS

Significance Criteria

RESOURCE CATEGORY / SIGNIFICANCE CRITERIA	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact	Beneficia l Impact	Information Sources
U. <u>MANDATORY FINDINGS OF SIGNIFICANCE</u>						
1) Does the Project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16
2) 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 current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16
3) Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16

Criterion R1. The proposed Phase 1A-AB Improvements Project nor other Phase 1 projects will not, individually or cumulatively, degrade the quality of the environment. Important examples of major periods of California history or pre-history will not be eliminated. Mitigation Measures ARCH-1 through ARCH-5 shall be implemented to address construction crew training, a program of spot checking by an archaeologist, monitoring of future borings at the campus building site, accidental discovery of archaeological resources or redeposited human remains, an event considered to be extremely unlikely.

Mitigation Measure BIO-1 provides for development of a noise and vibration mitigation plan to be developed during final design of the Phase 1B-Secondary Clarifiers and Effluent Facilities. As a result, project-specific mitigation will be developed to reduce noise and vibrational impacts to rail nesting west of the WWTP to less than significant levels. In addition, Mitigation Measure BIO-2 shall be required to avoid inadvertent take of bird nests within the WWTP that may be prioritized under the Federal Migratory Bird Treaty Act and State Fish and Game Code.

Criterion R2. There are several areas of potential cumulative impact requiring mitigation as discussed previously in this chapter. Without controls, during the maximum overlap scenario of the Phase 1 construction projects, it has been calculated that 1.4 lbs/day of DPM would be produced by construction equipment, producing an unacceptably high health risk of cancer output of 34 in a million. With Mitigation Measure AQ-1, 80% of horsepower hours for onsite construction equipment for Phase 1 projects shall meet a minimum of Tier 4 interim emission standards which will reduce DPM generation to 0.34 lbs/day and a cancer risk of 8.2 in a million, below the BAAQMD threshold of 10 in a million.

Several cumulative noise and vibration issues are associated with construction and operation of the Phase 1 Program. To mitigate potential cumulative impacts, mitigation measures have been developed and include NOI-3 and the use of selected BMPs for noise control during construction, NOI-6 which calls for vibration-generating operational equipment to be adequately vibration isolated, and NOI-7 which places limitations on construction activities to reduce the vibration impact from construction-related activities. With these mitigation measures, impacts are reduced to less-than-significant levels.

Criterion R3. Criterion R3 addresses adverse effects on human beings. Health risk and noise and vibrational effects on humans were already discussed under Criterion R2. Construction workers are also at risk, primarily due to the hazards associated with excavation activities. Figures A1-A4 in Appendix A provide construction details for each Phase 1 project noting that many activities are at depth. A variety of control measures are identified in Section G, Geology and Soils, and Section I, Hazards and Hazardous Materials, to address worker health and safety issues and reduce impacts to less-than-significant levels.

Chapter 4

CHECKLIST AND INFORMATION SOURCES

1. City of Union City General Plan Land Use Map. January 25, 2017.
2. City of Union City Zoning Map. January 20, 2017.
3. Woodard and Curran. Enhanced Treatment and Site Upgrade Program. August 2019.
4. Woodard and Curran. Effluent Management Study, Appendix A to reference 3. August 2019.
5. Woodard and Curran. Report of Waste Discharge for Reissuance of NPDES Permit No. CA0038733. April 29, 2020.
6. Hazen & Sawyer. USD ETSU Phase 1A-Aeration Basin Modifications Project 30% Design Report. September 4, 2020.
7. RWQCB Order No. R2-2020-0027 for NPDES Permit No. CA0038733, adopted October 14, 2020.
8. ESA Union Sanitary District Phase 1 Environmental Site Assessment. June 27, 1996.
9. City of Union City. Transportation Element of the 2040 General Plan, adopted December 10, 2019.
10. ESA PWA. Preliminary Study of the Effect of Sea Level Rise on District Infrastructure. June 2013.
11. Scheidegger & Associates. IS/MND for the Primary Digester No. 7 Project. October 2018.
12. Scheidegger & Associates. IS/MND for the Standby Power Generation System Upgrade Project. February 2019.
13. ICF. IS/MND 31252 Veasy Street Religious Facility Project. October 2017.
14. Union City 511 Area Specific Plan, approved by City Council on September 14, 1997.
15. Archeo-Tec. Phase 1 Cultural Resource Assessment for the USD Emergency Outfall Project. March 14, 2018.
16. Professional judgment and expertise of the environmental specialist preparing this assessment, based upon a review of the Project site and surrounding conditions, and a review of engineering documents.

17. <http://www.conservation.ca.gov>.
18. BAAQMD. Final 2017 Clean Air Plan: Spare the Air, Cool the Climate. Adopted April 19, 2017.
19. BAAQMD. CEQA Air Quality Guidelines. May 2017.
20. Yorke Engineering, LLC. Air Quality and GHG Emissions Analysis: USD Phase 1 ETSU Program. February 2021.
21. EPA Design Manual, Odor and Corrosion Control in Sanitary Sewage Systems and Treatment Plants, October 1985. EPA/625/1-85/018.
- 22a. CARB. "Overview, Diesel Exhaust & Health" webpage. Accessed February 2021. <https://2.arb.ca.gov/resources/overview-exhaust-and-health>.
- 22b. BAAQMD. Recommended Methods for Screening and Modeling Local Risks and Hazards. May 2012.
- 22c. CARB. Tier 4 Off-Road Comparison-Ignition Engines. December 2012.
23. Environmental Collaborative. Biological Resource Assessment for the Standby Power Generation System Upgrade Project. January 14, 2019.
24. Species Lists from the USFW, CNDDDB, and CNPS for the ETSU Phase 1 Program.
- 24a. City of Union City Ordinance #318-89.
25. Archeo-Tech, Phase 1 Cultural Resources Evaluation, ETSU Phase 1 Program. January 4, 2021.
26. City of Union City, 2040 General Plan. Adopted December 10, 2019.
27. CE&G. Geotechnical Design Report, USD Campus Building. January 30, 2021.
28. Union City. Climate Action Plan. November 2010
29. <http://geotracker.swrcb.ca.gov>
30. <https://www.dtsc.ca.gov/SiteCleanup/CorteseList>
31. Brown and Caldwell. WWTP Annual Groundwater Monitoring Report. 2020.
32. FEMA, Flood Insurance Rate Map for Union City. Effective August 3, 2009.
33. <http://www.rivers.gov/publications.html.WildernessScenicPublications>

34. <http://epa.gov/region09/water/groundwater/ssa.html>
35. RWQCB. Water Quality Control Plan for the San Francisco Bay Basin. As Amended.
36. ACWD. Ordinance No. 2010-01 (ACWD Well Ordinance).
37. Marc Solomon. Hazen and Sawyer. January 2021.
38. http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland-zones_maps_citylist
39. Charles M. Salter Associates. Environmental Noise and Vibration Impact Technical Report for ETSU Phase 1 Program. February 4, 2021.
40. USD. Conditional Use Permit UP-5-95 with the City of Union City.
41. Union City Noise Ordinance 275-861 (part). 1986.
41. Abrams Associates. Transportation Impact Analysis. USD ETSU Phase 1 Program. January 25, 2021.
43. November 16, 2020 Meeting with Stan Fernandez, ACFD.