

SAN JOSÉ / SANTA CLARA REGIONAL  
WASTEWATER FACILITY PLANT INSTRUMENT  
AIR SYSTEM UPGRADE PROJECT  
INITIAL STUDY  
FILE NUMBER PP15-114

Prepared for

January 2016





### **MITIGATED NEGATIVE DECLARATION**

The Director of Planning, Building and Code Enforcement has reviewed the proposed project described below to determine whether it could have a significant effect on the environment as a result of project completion. "Significant effect on the environment" means a substantial or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.

**NAME OF PROJECT:** San Jose/Santa Clara Regional Wastewater Facility Plant Instrument Air System Upgrade Project

**PROJECT FILE NUMBER:** PP15-114

**PROJECT DESCRIPTION:** The high-pressure instrument air supply system and the Regional Wastewater Facility (Facility) needs to be upgraded to reduce the risk of submergence by raising the air compressors above the 100-year floodplain, to improve operation reliability and minimize interruptions to critical operations, and to provide power redundancy to reduce the risk of power loss at the high-pressure instrument air supply system. The project would construct a 1,800 square foot building with a 1,500 square foot parking lot located west of the Secondary Blower Building (SBB) at the Facility to operate the new high-pressure instrument air supply system. The new air supply system would route air into the SBB and distribute air through the existing air piping system at the Facility.

**PROJECT LOCATION & ASSESSORS PARCEL NO.:** 700 Los Esteros Road, San Jose CA 95002; APN: 015-31-024

**COUNCIL DISTRICT:** 4

**APPLICANT CONTACT INFORMATION:** Ken Davies, Environmental Compliance Officer, City of San Jose Environmental Services Department, 200 E. Santa Clara Street, 10<sup>th</sup> Floor, San Jose, CA 95113-1905, (408) 975-2587.

### **FINDING**

The Director of Planning, Building & Code Enforcement finds the project described above will not have a significant effect on the environment in that the attached initial study identifies one or more potentially significant effects on the environment for which the project applicant, before public release of this draft Mitigated Negative Declaration, has made or agrees to make project revisions that clearly mitigate the effects to a less than significant level.

## MITIGATION MEASURES INCLUDED IN THE PROJECT TO REDUCE POTENTIALLY SIGNIFICANT EFFECTS TO A LESS THAN SIGNIFICANT LEVEL

- A. **AESTHETICS** – The project will not have a significant impact on this resource, therefore no mitigation is required.
- B. **AGRICULTURE AND FOREST RESOURCES** – The project will not have a significant impact on this resource, therefore no mitigation is required.
- C. **AIR QUALITY** – The project will not have a significant impact on this resource, therefore no mitigation is required.
- D. **BIOLOGICAL RESOURCES.**

**Impact BIO-1:** Construction activities, especially those that involve ground disturbance and the use of heavy machinery, may affect nesting birds including special-status birds which may occur in the Project area. The addition of lighting associated with the construction and operation of new facilities may also result in adverse effects on breeding birds.

The following mitigation measures will be included as part of the project during the construction phase to avoid the inadvertent take of raptor and other protected migratory birds' nests under the federal Migratory Bird Treaty Act and State Fish and Game sections:

### Mitigation Measure BIO-1a: Preconstruction Surveys for Nesting Birds.

If possible, construction shall be scheduled between September and January (inclusive) to avoid the nesting season. If Project construction is scheduled during breeding bird season (February 1–August 31), City's Environmental Services Department (ESD) or its contractor shall retain a qualified biologist to conduct a survey for nesting raptors and migratory bird nests within 7 days of the start of construction or, after any construction breaks of 14 days or more, within 7 days prior to the resumption of construction. Surveys shall be performed for the Project area and for suitable habitat within 300 feet. If an active nest is identified, a no-disturbance buffer zone around the nest tree (or, for ground-nesting species, or nests identified on Facility buildings, the nest itself) shall be established. The no-disturbance zone shall be marked with flagging or fencing that is easily identified and avoided by the construction crew. In general, the minimum buffer zone widths shall be as follows: 100 feet (radius) for non-raptor species and 300 feet (radius) for raptor species; however, they may be adjusted if an obstruction, such as a building, is within line-of-sight between the nest and construction. Buffer widths may be modified based on consultation with California Department of Fish and Wildlife (CDFW). Buffers shall remain in place as long as the nest is active or young remain in the area and are dependent on the nest.

Construction activities that are scheduled to begin outside the breeding season (September through January) can proceed without surveys. If possible, all necessary tree and vegetation removal should be conducted before the start of breeding bird season to minimize the opportunity for birds to nest at the Project site and conflict with Project construction activities.

ESD will notify Planning, Building and Code Enforcement (PBCE) Senior Environmental Planner when the mitigation plan and mitigation actions will occur for approval.

Mitigation Measure BIO-21b: Minimize Light Pollution.

Lights at the Project site (during construction and operation) shall be directed downward and shielded where necessary to ensure that no fugitive light spills out into natural lands and interferes with typical avian behavior. ESD qualified personnel will inspect lighting plans and/or specifications. ESD will notify Planning, Building and Code Enforcement (PBCE) Senior Environmental Planner when the mitigation plan and mitigation actions will occur for approval.

**E. CULTURAL RESOURCES.**

**Impact CUL-1:** The proposed Project may encounter archaeological resources during construction activities.

The following mitigation measures will be included as part of the project during the construction phase for the protection of archaeological resources:

Mitigation Measure CUL-1: Inadvertent Discovery of Archaeological Resources.

If prehistoric or historic-era archaeological resources are encountered by construction personnel during Project implementation, all construction activities within 100 feet shall halt and the contractor shall notify the City of San José. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse.

City’s Environmental Services Department (ESD) or its contractor shall retain a Secretary of the Interior-qualified archaeologist to inspect the findings within 24 hours of discovery. If it is determined that the Project could damage a historical resource as defined by CEQA, construction shall cease in an area determined by the archaeologist until a mitigation plan has been prepared, approved by the PBCE Senior Environmental Planner, and implemented to the satisfaction of the archaeologist (and Native American representative if the resource is prehistoric, who will be identified by the Native American Heritage Commission [NAHC]). In consultation with the PBCE Senior Environmental Planner, the archaeologist (and Native American representative) shall determine when construction can resume.

The mitigation plan shall recommend preservation in place, as a preference, or, if preservation in place is not feasible, data recovery through excavation. If preservation in place is feasible, this may be accomplished through one of the following means: (1) modifying the construction plan to avoid the resource; (2) incorporating the resource within open space; (3) capping and covering the resource before building appropriate facilities on the resource site; or (4) deeding the resource site into a permanent conservation easement. If preservation in place is not feasible, a qualified archaeologist shall prepare and implement a detailed treatment plan to the satisfaction of the PBCE Senior Environmental Planner to recover the scientifically consequential information from the resource prior to any excavation at the resource site. Treatment for most resources would consist of (but would not necessarily be limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to

target the recovery of important scientific data contained in the portion(s) of the significant resource to be impacted by the project. The treatment plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, curation of artifacts and data at an approved facility, and dissemination of reports to local and state repositories, libraries, and interested professionals.

**Impact CUL-2:** The proposed Project may encounter human remains during construction activities.

Mitigation Measure CUL-2: Inadvertent Discovery of Human Remains.

If human remains are encountered by construction personnel during Project implementation, all construction activities within 100 feet shall halt and the contractor shall notify the PBCE Senior Environmental Planner. ESD shall contact the Santa Clara County Coroner to determine whether or not the remains are Native American. If the remains are determined to be Native American, the Coroner shall contact the Native American Heritage Commission (NAHC). The NAHC will then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn would make recommendations to the City for the appropriate means of treating the human remains and any associated funerary objects.

- F. **GEOLOGY AND SOILS** – The project will not have a significant impact on this resource, therefore no mitigation is required.
- G. **GREENHOUSE GAS EMISSIONS** – The project will not have a significant impact on this resource, therefore no mitigation is required.
- H. **HAZARDS AND HAZARDOUS MATERIALS.**

**Impact HAZ-1:** Excavation could potentially result in workers encountering hazardous materials in the soil during construction of the proposed Project facilities.

Mitigation Measure HAZ-1a: Pre-Construction Hazardous Materials Assessment.

Prior to construction, ESD or its contractor shall ensure that a limited soil and/or groundwater investigation is performed at proposed construction work areas to characterize soil and/or groundwater quality. ESD or its contractor shall conduct a site assessment including potential testing of soil and/or groundwater, and if testing reveals soil and/or groundwater concentrations that exceed applicable regulatory screening levels, the City shall contact the Santa Clara County Department of Environmental Health (SCCDEH) or Regional Water Quality Control Board (RWQCB), as appropriate, to secure regulatory oversight and the PBCE Senior Environmental Planner shall be notified.

The Health and Safety Plan (HASP), prepared in accordance with Mitigation Measure HAZ-1b, will establish the sampling and laboratory analysis program which may include the following: analysis of subsurface soil samples within the Project site for total petroleum hydrocarbons (as gasoline, diesel, and waste oil), Title 22 metals, and volatile organic compounds (VOCs) or any other chemicals of concern to evaluate the potential presence of contamination; groundwater samples if subsurface excavations are anticipated to require dewatering; and additional analyses for VOCs and semi-volatile organic compounds (SVOCs) for groundwater samples collected at construction locations within 1,000 feet of adjacent landfills.

The results of the pre-construction hazardous materials assessment shall be incorporated into the Site Health and Safety Plan prepared in accordance with Mitigation Measure HAZ-1b and the Soil and Groundwater Management Plan prepared in accordance with Mitigation Measure HAZ-1c to determine whether: specific soil and groundwater management and disposal procedures for contaminated materials are required; excavated soils are suitable for reuse; and construction worker health and safety procedures for working with contaminated materials are required. If the pre-construction hazardous materials assessment identifies the presence of soil and/or groundwater contamination at concentrations in excess of applicable regulatory screening levels (Environmental Screening Levels [ESLs] or California human health screening levels [CHHSLs]) for proposed site use, ESD or its contractor shall complete site assessment and remedial activities required by the regulatory agency to ensure that residual soil and/or groundwater contamination, if any, shall not pose a continuing significant threat to groundwater resources, human health, or the environment. A copy of the pre-construction hazardous materials assessment shall be submitted to the PBCE Senior Environmental Planner for approval.

Mitigation Measure HAZ-1b: Health and Safety Plan.

ESD or its contractor shall retain a qualified environmental professional to prepare a site-specific Health and Safety Plan (HASP) in accordance with federal OSHA regulations (29 CFR 1910.120) and Cal/OSHA regulations (8 CCR Title 8, Section 5192). Because anticipated contaminants vary depending upon the location of proposed improvements in the Project area and may vary over time, the HASP shall address site-specific worker health and safety issues during construction. The HASP shall include the following information:

- Results of sampling conducted in accordance with Mitigation Measure HAZ-1a.
- All required measures to protect construction workers and the general public by including engineering controls, monitoring, and security measures to prevent unauthorized entry to the construction areas and to reduce hazards outside of the construction areas. If prescribed contaminant exposure levels are exceeded, personal protective equipment shall be required for workers in accordance with state and federal regulations.
- Required worker health and safety provisions for all workers potentially exposed to contaminated materials, in accordance with state and federal worker safety regulations, and designated qualified individual personnel responsible for implementation of the HASP.
- The contractor shall have a site health and safety supervisor fully trained pursuant to hazardous materials regulations be present during excavation, trenching, or cut and fill operations to monitor for evidence of potential soil contamination, including soil staining, noxious odors, debris or buried storage containers. The site health and safety supervisor must be capable of evaluating whether hazardous materials encountered constitute an incidental release of a hazardous substance or an emergency spill. The site health and safety supervisor shall implement procedures to be followed in the event of an unanticipated hazardous materials release that may impact health and safety. These procedures shall be in accordance with hazardous waste operations and regulations and specifically include, but are not limited to, the following: immediately stopping work in the vicinity of the unknown hazardous materials release; notifying SCCDEH and retaining a qualified environmental firm to perform sampling, remediation, and/or disposal.
- Documentation that HASP measures have been implemented during construction.

- Provision that submittal of the HASP to ESD, or any review of the contractor's HASP ESD, shall not be construed as approval of the adequacy of the contractor as a health and safety professional, the contractor's HASP, or any safety measure taken in or near the construction site. The contractor shall be solely and fully responsible for compliance with all laws, rules, and regulations applicable to health and safety during the performance of the construction work.

A copy of the HASP shall be submitted to the PBCE Senior Environmental Planner for approval.

Mitigation Measure HAZ-1c: Soil and Groundwater Management Plan.

If ground-borne hazardous materials are identified under the pre-Construction hazardous materials assessment, done in accordance with Mitigation Measure HAZ-1a, ESD shall require the construction contractor to prepare and implement a Soil and Groundwater Management Plan, subject to review by the PBCE Senior Environmental Planner, that specifies the method for handling and disposal of contaminated soil and groundwater prior to construction. The plan shall include all necessary procedures to ensure that excavated materials and fluids generated during construction are stored, managed, and disposed of in a manner that is protective of human health and in accordance with applicable laws and regulations. The plan shall include the following information:

- Step-by-step procedures for evaluation, handling, stockpiling, storage, testing, and disposal of excavated material, including criteria for reuse and offsite disposal. All excavated materials shall be inspected prior to initial stockpiling, and spoils that are visibly stained and/or have a noticeable odor shall be stockpiled separately to minimize the amount of material that may require special handling. In addition, excavated materials shall be inspected for buried building materials, debris, and evidence of underground storage tanks; if identified, these materials shall be stockpiled separately and characterized in accordance with landfill disposal requirements. If some of the spoils do not meet the reuse criteria and/or debris is identified, these materials shall be disposed of at a permitted landfill facility.
- Procedures to be implemented if unknown subsurface conditions or contamination are encountered, such as previously unreported tanks, wells, or contaminated soils.
- Procedures for containment, handling and disposal of groundwater generated from construction dewatering, the method to be used to analyze groundwater for hazardous materials likely to be encountered and the appropriate treatment and/or disposal methods.

**Impact HAZ-2:** Contaminated soil or groundwater could occur on the Project site due to the presence of adjacent hazardous materials sites.

ESD or its contractor shall implement the following mitigation measures as described above in Mitigation Measure HAZ-1:

Mitigation Measure HAZ-1a: Pre-Construction Hazardous Materials Assessment,  
Mitigation Measure HAZ-1b: Health and Safety Plan, and  
Mitigation Measure HAZ-1c: Soil and Groundwater Management Plan.

- I. **HYDROLOGY AND WATER QUALITY** – The project will not have a significant impact on this resource, therefore no mitigation is required.
- J. **LAND USE AND PLANNING** – The project will not have a significant impact on this resource, therefore no mitigation is required.
- K. **MINERAL RESOURCES** – The project will not have a significant impact on this resource, therefore no mitigation is required.
- L. **NOISE** – The project will not have a significant impact on this resource, therefore no mitigation is required.
- M. **POPULATION AND HOUSING** – The project will not have a significant impact on this resource, therefore no mitigation is required.
- N. **PUBLIC SERVICES** – The project will not have a significant impact on this resource, therefore no mitigation is required.
- O. **RECREATION** – The project will not have a significant impact on this resource, therefore no mitigation is required.
- P. **TRANSPORTATION / TRAFFIC** – The project will not have a significant impact on this resource, therefore no mitigation is required.
- Q. **UTILITIES AND SERVICE SYSTEMS** – The project will not have a significant impact on this resource, therefore no mitigation is required.
- R. **MANDATORY FINDINGS OF SIGNIFICANCE**

**Impact MFS-1:** The Project could result in impacts that are individually limited, but cumulatively considerable.

Mitigation Measure C-TR: Implement Coordinated Transportation Management Plan.

Prior to construction, ESD or its contractor(s) shall develop a Coordinated Transportation Management Plan and work with other projects' contractors and appropriate City departments (e.g., Emergency Services, Fire, Police, Transportation) to prepare and implement a transportation management plan for roadways adjacent to and directly affected by the Project as well as planned Facility improvements and land uses, and to address the transportation impact of the overlapping construction projects within the vicinity of the Project in the region. The transportation management plan shall include, but not be limited to, the following requirements:

- Coordination of individual traffic control plans for the Project with nearby projects.
- Coordination between the Project contractor and other project contractors in developing circulation and detour plans that include safety features (e.g., signage and flaggers). The circulation and detour plans shall address:
  - Full and partial roadways closures

- Circulation and detour plans to include the use of signage and flagging to guide vehicles through and/or around the construction zone, as well as any temporary traffic control devices Bicycle/Pedestrian detour plans, where applicable
- Parking along public roadways
- Haul routes for construction trucks and staging areas for instances when multiple trucks arrive at the work sites
- Protocols for updating the transportation management plan to account for delays or changes in the schedules of individual projects.

## **PUBLIC REVIEW PERIOD**

Before 5:00 p.m. on **February 17, 2016**, any person may:

1. Review the Draft Mitigated Negative Declaration (MND) as an informational document only; or
2. Submit written comments regarding the information and analysis in the Draft MND. Before the MND is adopted, Planning staff will prepare written responses to any comments, and revise the Draft MND, if necessary, to reflect any concerns raised during the public review period. All written comments will be included as part of the Final MND.

Harry Freitas, Director  
Planning, Building and Code Enforcement

Circulated on: January 28, 2016

Meenaxi R. P.

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# CHAPTER 1

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## Introduction and Project Description

The following text provides relevant background for the San José / Santa Clara Regional Wastewater Facility Plant Instrument Air System Upgrade Project (Project), City of San José File Number PP15-114, identifies the Project location, describes the Project area, identifies Project objectives and need, reviews proposed facilities and operations, and summarizes proposed construction process and schedule.

### 1.1 Introduction

The San José / Santa Clara Regional Wastewater Facility (Facility) treats domestic, industrial, and commercial wastewater from the cities of San José, Santa Clara, Campbell, Los Gatos, Monte Sereno, Cupertino, Milpitas, and Saratoga; and unincorporated Santa Clara County. In total, the existing service area covers roughly 300 square miles and contains a service population of approximately 2 million people (1.4 million residents and 600,000 workers).

Originally constructed in 1956, the Facility treats an average of 110 million gallons per day (mgd) of wastewater, with an existing capacity of 167 mgd of average dry weather influent flow. The Facility provides a tertiary level of treatment, in accordance with state and local regulations. It produces recycled water for industrial use and toilet flushes, and also discharges treated wastewater to the South San Francisco Bay. The City of San José (City) manages the Facility and the surrounding Facility lands, which together total approximately 2,680 acres. About half of this area consists of current and former lagoons and drying beds used for biosolids management, and lands that have provided a buffer between Facility operations and neighboring land uses.

The Facility RWF has a high-pressure instrument air supply system used for controlling pneumatically-operated<sup>1</sup> valves, for process air for the dissolved air flotation thickening process<sup>2</sup>, and for powering various tools. The current instrument air compressor system is located in the lower level of the Secondary Blower Building (SBB), a location vulnerable to submergence during a flood event, and is supplied by a single power source. In order to increase reliability, the City proposes to construct a new instrument air compressor building with two power sources located above the 100-year flood elevation.

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<sup>1</sup> Systems commonly powered by compressed air or compressed inert gases.

<sup>2</sup> Polymers and air are injected into the wastewater to cause the algae and other particulate matter to coagulate and flocculate/bind, and rise to the top of the tank for easier removal.

## 1.2 Relationship to the Plant Master Plan

The City has prepared a Master Plan for the Facility that addresses various improvement projects needed to address aging infrastructure, reduce odors, accommodate projected population growth in the Facility's service area, and comply with changing regulations that affect the Facility. The Master Plan also includes a comprehensive land use plan for the Facility lands surrounding the Facility operational area. The master planning effort identified both near-term and long-term (to year 2040) Facility improvements and land uses, which have been evaluated in the San José/Santa Clara Water Pollution Control Plant Master Plan Environmental Impact Report (Plant Master Plan EIR; State Clearinghouse # 2011052074).<sup>3</sup> The Master Plan effort focuses on future planning efforts for the Facility and surrounding areas. The Project evaluated in this initial study was not characterized within the suite of projects evaluated under the Plant Master Plan EIR. Thus, this Initial Study/Mitigated Negative Declaration is considered to be entirely separate from the Plant Master Plan EIR, and does not rely on the Plant Master Plan EIR for tiering under CEQA.

## 1.3 Project Location and Facility Siting

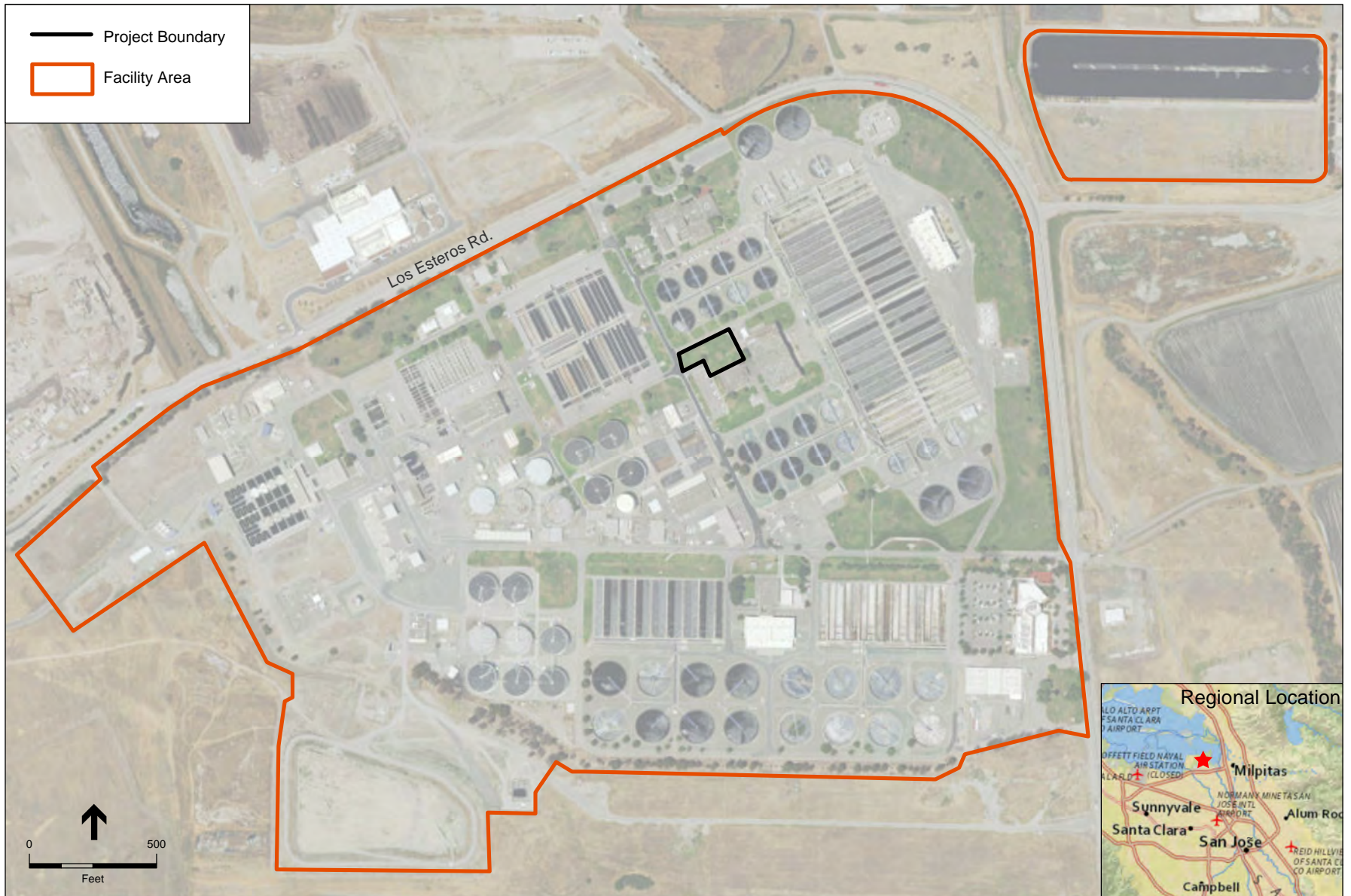
The Project would be located in the northern area of Santa Clara County, within the City, near the City's northern margin. The Project area is located within the existing Facility grounds, west of the existing SBB and south of one group of secondary clarifiers, as shown in **Figure 1-1**. The proposed building site is an undeveloped grassy area at an elevation of approximately 18 feet above mean sea level. Two internal Facility access roads are located adjacent to the site to the northwest (Main Street) and north ("C" Street). A portion of the SBB and paved parking lot are located south of the Project area. An electrical duct bank and pipelines are located adjacent to the southeast of the proposed building location.

The site is located approximately 0.75 mile (4,300 feet) from the nearest offices or community centers, located to the southwest of the Project site. The nearest residential development is approximately one mile (5,600 feet) west of the Project site. The southern reaches of the San Francisco Bay are located approximately 0.8 mile (4,000 feet) northwest of the Project area. The Project area is generally flat and low-lying.

The Project area shown in **Figure 1-1** reflects the largest potential area that would be disturbed by Project construction, including contractor staging (i.e., approximately 23,000 square feet).

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<sup>3</sup> The City circulated the San José/Santa Clara Water Pollution Control Plant Master Plan Draft EIR in January, 2013, and the City Council certified the EIR in November 2013.



SOURCE: CH2M, 2015

San José/Santa Clara Regional Wastewater Plant Instrument Air System Upgrade IS/MND . 131002.16

**Figure 1-1**  
Project Location and Facility Operational Area

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## 1.4 Project Need and Objectives

The high-pressure instrument air supply system needs to be upgraded for two primary reasons. First, the existing main set of air compressors are outdated and located in the lower level of the SBB and could be vulnerable to submergence during a flood event. Second, the compressors are currently connected to a single source of electric power and are therefore vulnerable to loss of power should that source be compromised.

The objectives of this project are to:

- reduce the risk of submergence by raising the air compressors above the 100-year floodplain;
- improve operation reliability and minimize interruptions to critical operations; and
- provide power redundancy to reduce the risk of power loss at the high-pressure instrument air supply system.

## 1.5 Proposed Facilities

A new building called the Plant Air Compressor Building would be constructed to house three air cooled air compressors, one wet air receiver tank, two refrigerator air dryers, and associated electrical panels, as shown in **Figure 1-2**. The building would be approximately 1,800 square feet and 20 feet high with an approximately four foot high, by five foot long retaining wall located at the southwest corner of the building. Building construction would be a concrete slab floor with concrete masonry unit walls and a metal roof. Refer to **Figure 1-3** for a conceptual rendering. The new facility would also include an approximately 1,500 square foot paved parking area north of the proposed building, adjacent to "C" Street. The new building would be powered by connections to both an existing switchgear located in the SBB and to an existing motor control center located in the Sludge Control Building. A new high pressure six-inch air pipe would be routed east from the new air compressor building into and through the basement of the existing SBB to the existing high pressure air piping system. This would include also connecting the compressors to the existing dry air receiver tanks in the SBB. One new three-inch drain pipe would be installed at the southwest corner of the building and extend south to connect to an existing eight-inch sanitary sewer line, to route process water to the Facility collection system for treatment

Air compressor systems are also located in the Filtration Building and Nitrification Building and act as backup for the equipment in their respective buildings if the primary compressor system is out of service. These compressor systems would be kept in service in these locations until they are no longer functional.

## 1.6 Facility Operations

Upon completion, the new high-pressure instrument air supply system would compress air in the new building and route the air to the SBB to be distributed through the existing Facility high pressure air piping system. The new Plant Air Compressor Building would not be manned. Plant operators would visually check the facility during regular shifts but are not expected to make routine maintenance trips to the system. No hazardous materials or potable water would be required for operation of the new high-pressure instrument air supply system.

**Table 1-1** summarizes the operational features of the existing system and proposed Project.

**TABLE 1-1  
PROJECT FEATURES**

<b>Feature</b>	<b>Existing</b>	<b>Proposed</b>
Compressors	3	3
Compressor Load (kW) <sup>1</sup>	145 per compressor	111.7 per compressor
Compressor Capacity (SCFM) <sup>2</sup>	750	750
Dryers	2	2
Dryer Load (kW)	9.5 per dryer	6.5 per dryer
Maximum Electrical Usage (kW)		250
Maximum Compressor Sound Level (dBA at 1 meter) <sup>3</sup>		74

NOTES:

<sup>1</sup> kW – kilowatts

<sup>2</sup> SCFM – standard cubic feet per minute

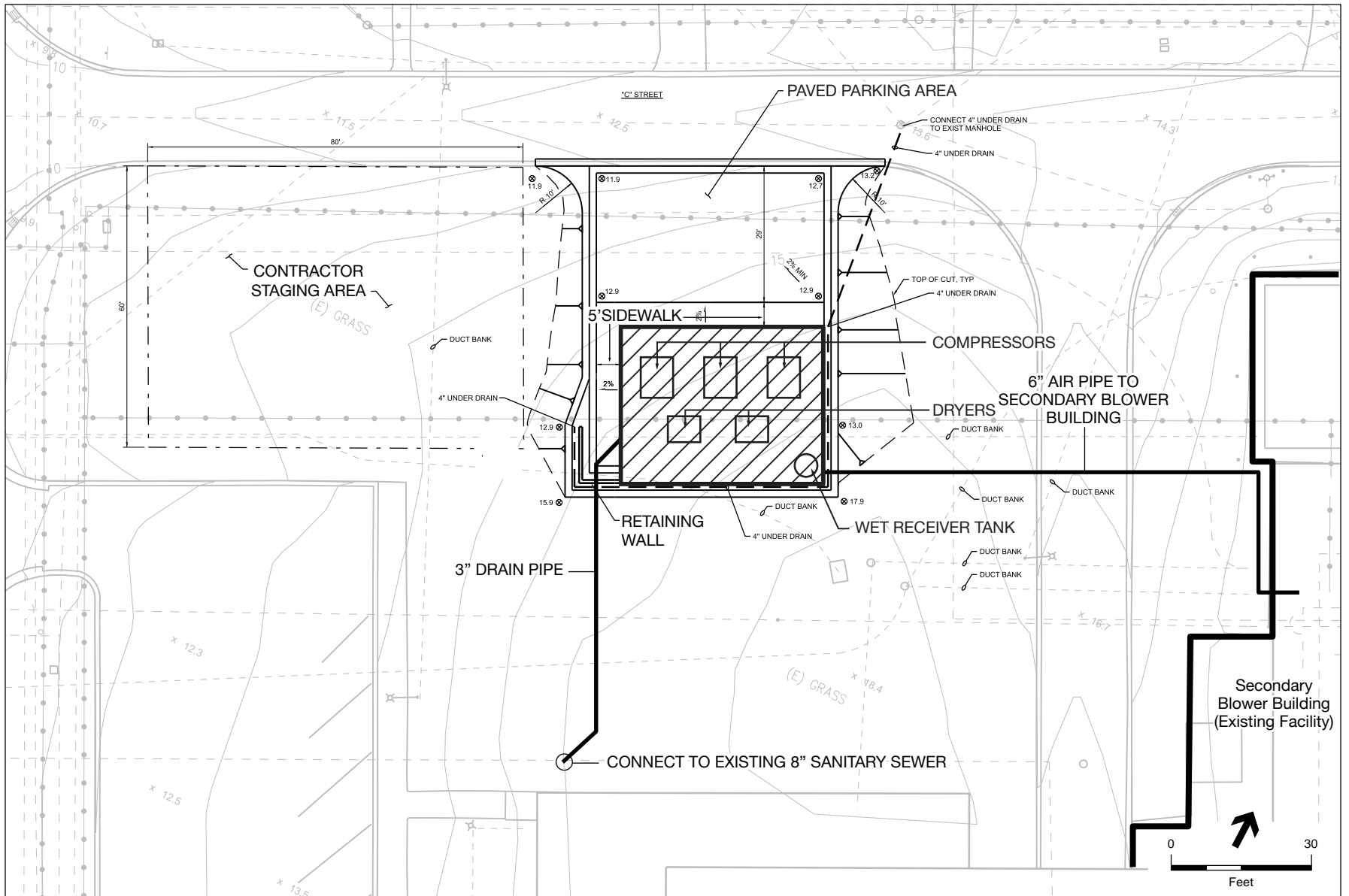
<sup>3</sup> dBA - The perceived loudness of sounds is dependent on many factors, including sound pressure level and frequency content. However, within the usual range of environmental sound levels, perception of loudness is relatively predictable, and can be approximated by frequency filtering using the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard descriptor for environmental noise assessment.


The existing compressors in the lower level of the SBB would continue to operate until the new facility is operational. No temporary system would be installed during construction.

The existing three compressors, two dryers, and one wet tank would be removed upon completion of the new high-pressure instrument air supply system. The air compressors would be salvaged, and the dryers and wet tank would be demolished.

## 1.7 Construction Process and Schedule

The following section summarizes the construction process that would be utilized on site and the anticipated construction schedule for the Project.



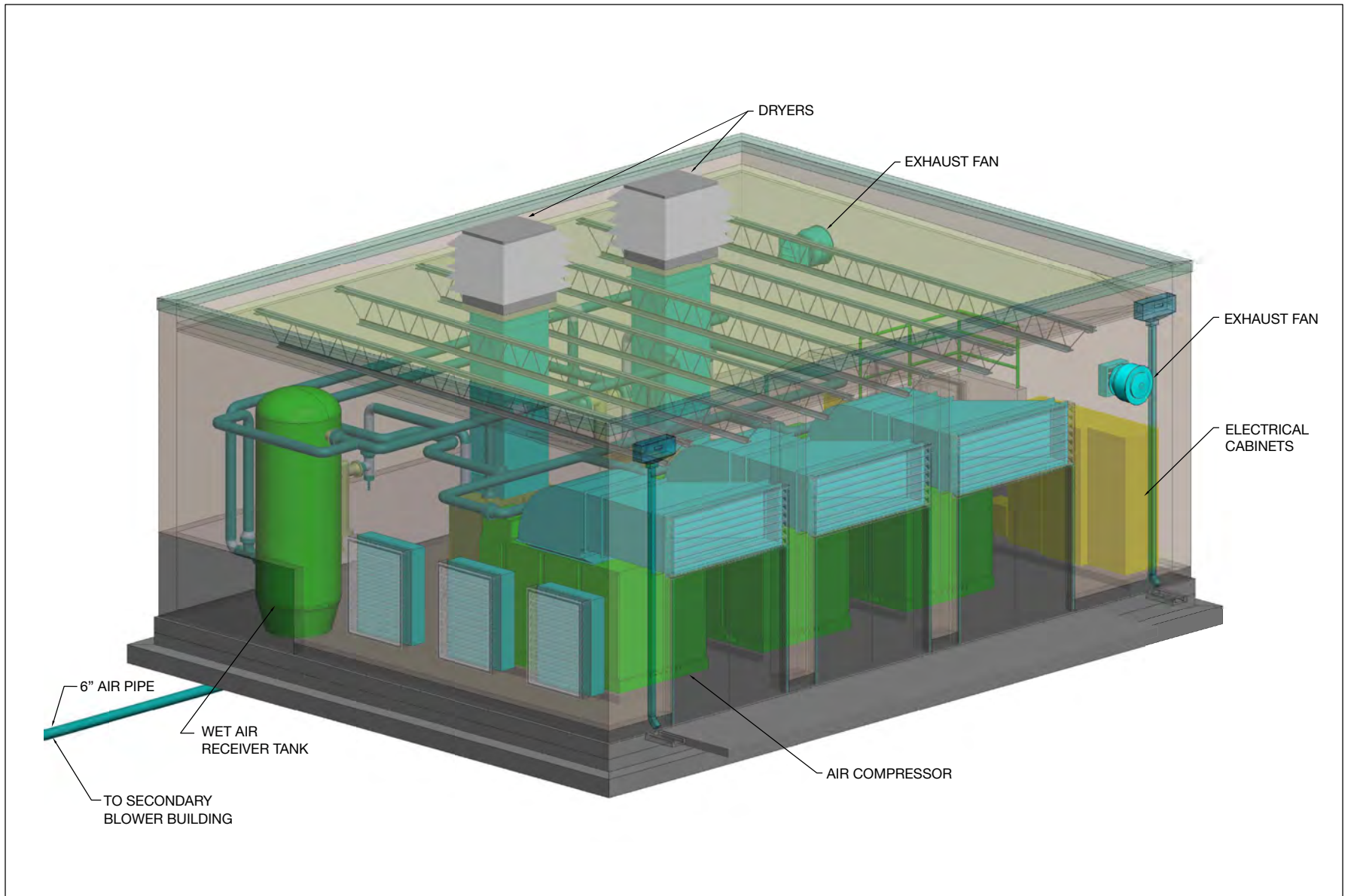
 Plant Instrument Air Building

SOURCE: CH2M, 2015

San José/Santa Clara Regional Wastewater Plant Instrument Air System Upgrade IS/MND . 131002.16

**Figure 1-2**  
Proposed Facilities

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SOURCE: CH2M, 2015

San José/Santa Clara Regional Wastewater Plant Instrument Air System Upgrade IS/MND . 131002.16

**Figure 1-3**  
Conceptual Building Rendering

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## 1.7.1 Construction Process

Initial construction activities at the Project site would consist of site investigation and pothole trenching. Following the site investigation and potholing, an approximately 5,200 square foot area would be graded to a maximum depth of eight feet. Two open-cut trenches would be excavated, one for the high pressure air pipeline and one for a drain pipe. The air pipeline trench would be approximately 130 feet long, two feet wide and six feet deep. The drain pipeline trench would be approximately 30 feet long, 1.5 feet wide and five feet deep. Approximately 300 cubic yards of excavated material would be hauled offsite, potentially to Newby Island Landfill. Approximately 50 cubic yards would be kept onsite and used as backfill. The soil stockpiled onsite would be inspected to determine if it is safe to be utilized as backfill. Up to three trees would be removed during grading.

The new pipelines and electrical conduit would be installed after completion of the earthwork. Then a foundation would be laid, the building would be constructed, and the air compressors, dryers, wet air receiver, and electrical components would be installed. The facility would then be tested and then mobilized.

Proposed typical construction hours for the Project are Monday through Friday, 7:00 am to 5:00 pm. However, the selected contractor may be required to work on Saturday and Sunday, or during extended hours to support a critical Project development timeframe. A total of 550 round-trip truck trips (approximately two per day) would be required over the course of the Project to deliver materials to the site and remove debris from the site. An average of seven workers per day would commute to the Project site during Project construction.

The machinery identified in **Table 1-2** would be used at least once during any phases of Project construction.

**TABLE 1-2  
CONSTRUCTION EQUIPMENT AND USE**

Equipment Type	Number of Equipment	Horsepower	Average Daily Use (hours/day)	Total Workdays Used
Aerial lifts	1	63	4	250
Air Compressors	1	78	3	50
Drill Rigs	1	206	8	5
Concrete Trucks	3	320	6	20
Cranes	1	150	2	12
Backhoes	1	100	6	60
Forklifts	1	89	1	200
Pavers	1	126	6	1
Rollers	1	81	6	4
Plate Compactors	1	8	6	40
Pumps	1	84	6	6
Welders	1	46	4	30

Construction access would be through the main entrance gate at Main Street. One construction staging area, approximately 4,200 square feet, would be located adjacent to the northwest side of the proposed Project site. Temporary fencing would be installed along the boundary of the construction area. Use of temporary lighting is not anticipated.

### **1.7.2 Affected Roadways**

Construction equipment and workers would access the site along Los Esteros Road and Zanker Road, connecting to State Route (SR) 237.

### **1.7.3 Schedule**

Construction would occur over approximately 14 months, from September 2016 through December 2017.

## **1.8 Project Approvals**

The project will require the following approvals:

- City of San José – Environmental Clearance
- City of San José - Grading Permit, Building Permit, Tree Removal Permit

## CHAPTER 2

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# Evaluation of Environmental Impacts

## 2.1 Aesthetics

### 2.1.1 Setting

The Project area is located near the southern tip of the San Francisco Bay, within and near the southern margin of the existing Facility operational area (see Figure 1-1). The Facility site is bounded on three sides by existing industrial areas and infrastructure, and by open fields, a business park to the south and southwest, and Alviso Village residences to the southwest and west. The proposed Project site is surrounded by existing wastewater treatment facilities on all sides. The Project area and vicinity is relatively flat, allowing for views from nearby offsite areas of the eastern foothills, Mount Hamilton, and the Diablo Mountains to the east, and the San Francisco Baylands to the north.

Roadways in the vicinity of the Project area include Zanker Road and Los Esteros Road, providing primary access to the Facility operational area and the primary means by which the public can observe the Project area. From outside the Facility, viewing opportunities of the Project area are limited, distant, and largely screened by other Facility operational area facilities and landscaping. These facilities are industrial in character, with most buildings being one to two stories high. The Facility operational area also contains storage tanks, utility infrastructure, and a railroad line. The periphery of the Facility consists of fencing plus landscaping including eucalyptus trees, shrubs, and manicured lawns.

The nearest residences where the Facility operational area could be visible are located in the Alviso Village area, which is approximately one mile (5,600 feet) west of the Project area. Portions of the Facility could be visible from George Mayne Elementary School, located 1.25 miles (6,500 feet) southwest of the Project area. The Facility is also visible from portions of SR 237, Los Esteros Road and Zanker Road. The Project site is surrounded by exiting wastewater treatment facilities and would not be visible from any of the surrounding roadways or land uses.

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Checklist Source(s)</i>
<b>1. AESTHETICS — Would the project:</b>					
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1, 2
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1, 2, 3
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1, 2
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1, 2

## 2.1.2 Discussion

- a,c) **Less than Significant Impact.** The Project is located in the existing Facility operational area, and would involve the installation and use a new building to house instrument air system components. There are no scenic vistas in the Project vicinity. The proposed facilities would be small and limited in height to approximately 20 feet (i.e., one story). Therefore, anticipated aesthetic changes would be limited in extent. Additionally, the Project would be installed adjacent to other industrial facilities that are similar in appearance, associated with the existing Facility. Therefore, the project would be consistent with the existing visual setting, would not result in a substantial adverse effect on any scenic vista, and would not substantially alter the existing visual character or quality of the Project area and its surroundings. This impact is considered less than significant.
- b) **Less than Significant Impact.** The Project area would be visible from SR 237, located approximately 0.6 mile south of the Project site. However, SR 237 is not listed as a state scenic highway, and there are no other scenic highways located in the vicinity of the Project.<sup>4</sup> Additionally, no rock outcroppings or historic buildings are located onsite or in the immediate vicinity of the Project area, such that views of such resources could be affected. Limited trees (i.e., existing Facility landscaping) are located adjacent to the Project area and tree removal would be required as part of the construction of the new building. However, this would not affect the overall views of the area because the tree removal would occur at the interior of the Facility, an area that is not highly visible to surrounding viewing opportunities. Therefore, this impact is considered less than significant.
- d) **Less than Significant Impact.** Nighttime lighting is currently used throughout the Facility operational area, including the area adjacent to the proposed Project site. The Project would add to existing lighting, sufficient to provide lighting needed for operations, access and security of the building.

<sup>4</sup> California Department of Transportation Officially Designated State Scenic Highways and Historic Parkways ([http://www.dot.ca.gov/hq/LandArch/scenic\\_highways/](http://www.dot.ca.gov/hq/LandArch/scenic_highways/))

The City of San José Public Streetlights Council Policy 4-2 requires that new streetlight lighting be dimmable and programmable, which would control the amount and color of light shining on streets and sidewalks. However, because lighting would be located within the interior of the Facility's fenced boundary and would be used to operate critical Facility components, this policy is not relevant to the proposed Project. Further, because there are no residences or other active nighttime uses in the immediate vicinity of the proposed Project facilities, lighting impacts on aesthetics would be less than significant.

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## 2.2 Agricultural and Forestry Resources

### 2.2.1 Setting

There are no existing agricultural lands or forest resource areas located on the Project area or in the immediate vicinity of the Project site.<sup>5</sup> The Project would occur entirely within land zoned *Heavy Industrial* by the City of San José.

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Checklist Source(s)</i>
<b>2. AGRICULTURAL AND FORESTRY RESOURCES —</b> In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. <b>Would the project:</b>					
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,2,4
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,2
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,2
d) 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"/>	1
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1

### 2.2.2 Discussion

a-e) **No Impact.** As noted above, the Project site is not located on or adjacent to any agricultural lands (including Prime Farmland, Unique Farmland, or Farmland of Statewide Importance), lands subject to a Williamson Act contract, or forest lands. The Project would not result in the construction of any facilities or other displacement, interference, or loss of agricultural or forest lands. Additionally, the Project would not alter other areas which could, directly or indirectly, result in the conversion of farmland or forest land to other uses.

<sup>5</sup> California Department of Conservation, [Map] Santa Clara County Important Farmland 2012. August, 2014.

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## 2.3 Air Quality

### 2.3.1 Setting

Under amendments to the federal Clean Air Act (CAA), the U.S. Environmental Protection Agency (USEPA) has classified air basins or portions thereof as either “attainment” or “non-attainment” for each criteria air pollutant, based on whether or not the national standards have been achieved. The California CAA, which is patterned after the federal CAA, also requires areas to be designated as “attainment” or “non-attainment” for the state standards. Thus, areas in California have two sets of attainment / non-attainment designations: one set with respect to the national standards and one set with respect to the state standards. The San Francisco Bay Area Air Basin (Bay Area) is currently designated as a nonattainment area for state and national ozone standards, state particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) standards, and federal PM<sub>2.5</sub>(24-hour) standard.

The Bay Area Air Quality Management District (BAAQMD) is the regional air quality authority in the Project area. The BAAQMD requires any person or facility that puts in place, builds, erects, installs, modifies, modernizes, alters or replaces any article, machine, equipment or other contrivance, the use of which may cause, reduce or control the emission of air contaminants, to obtain written authorization from the BAAQMD in the form of an Authority to Construct and Permit to Operate (unless the source is specifically excluded or exempt from permit requirements).

The most recently adopted air quality plan for the San Francisco Bay Area is the Bay Area 2010 Clean Air Plan (2010 CAP).<sup>6</sup> The 2010 CAP is an update to the BAAQMD 2005 Ozone Strategy to comply with state air quality planning requirements. The 2010 CAP also serves as a multi-pollutant air quality plan to protect public health and the climate. The primary goals of the 2010 CAP are to attain air quality standards, reduce population exposure and protect public health in the Bay Area, and reduce greenhouse gas emissions and protect the climate. The 2010 CAP control strategy includes revised, updated, and new measures in the three traditional control measure categories, including stationary source measures, mobile source measures, and transportation control measures. In addition, the 2010 CAP identifies two new categories of control measures, including land use and local impact measures, and energy and climate measures.

The BAAQMD *CEQA Air Quality Guidelines* (BAAQMD Guidelines) were adopted in 2010 and amended in 2012 to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area.<sup>7</sup> The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and greenhouse gas (GHG) emissions. In 2012, the Alameda County Superior Court ruled that the BAAQMD had failed to comply with CEQA when it adopted the thresholds of significance in the BAAQMD CEQA Air Quality Guidelines. In August 2013, the First District Court of Appeal reversed

<sup>6</sup> Bay Area Air Quality Management District (BAAQMD), 2010. Bay Area 2010 Clean Air Plan, adopted September 15, 2010.

<sup>7</sup> Bay Area Air Quality Management District (BAAQMD), 2012. CEQA Air Quality Guidelines, revised May 2012.

the trial court’s judgment and upheld the BAAQMD’s CEQA Guidelines. However, an appeal is pending at the California Supreme Court. Although reliance on the 2011 thresholds is no longer required, local agencies still have a duty to evaluate impacts related to air quality and GHG emissions. In addition, CEQA grants local agencies broad discretion to develop their own thresholds of significance, or to rely on thresholds previously adopted or recommended by other public agencies or experts so long as they are supported by substantial evidence. Accordingly, this analysis is based on the BAAQMD’s 2011 thresholds to evaluate project impacts in order to protectively evaluate the potential effects of the project on air quality. Despite the court ruling, the science and reasoning contained in the BAAQMD CEQA Guidelines provide the latest guidance available, with substantial evidence included in the Thresholds Options and Justification Report developed by BAAQMD staff in 2009.<sup>8</sup> For that reason, substantial evidence supports continued use of the BAAQMD CEQA Guidelines.

Sensitive receptors are defined as facilities and land uses 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. Examples include schools, hospitals, and daycare centers. Residential areas are also considered sensitive to poor air quality because people usually stay home for extended periods of time, which results in greater exposure to ambient air quality. There are no sensitive receptors (e.g., residences, schools) adjacent to the Project area. There are no hospitals, daycare centers, or long-term care facilities within one mile of the Project site. George Mayne Elementary School is located approximately 1.25 miles (6,500 feet) southwest of the Project site. Jubilee Christian Center (including a church and a children’s center/youth center) is located approximately 0.9 mile (5,000 feet) southwest of the Project site. The closest residences are located in the Alviso community and Westwinds Mobile Home Park located approximately one mile (5,600 feet) to the west and south of the Project site, respectively.

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Checklist Sources</i>
<b>3. AIR QUALITY —</b> Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. <b>Would the project:</b>					
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2,5
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2,5
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2,5

<sup>8</sup> Bay Area Air Quality Management District (BAAQMD), 2009. Revised Draft Options and Justification Report California Environmental Quality Act Thresholds of Significance, October 2009.

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Checklist Sources</i>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2

### 2.3.2 Discussion

- a) **Less than Significant Impact.** As noted earlier, the Bay Area 2010 CAP is the applicable Clean Air Plan that has been prepared to address ozone nonattainment issues in the Bay Area. For determining consistency of projects with the air quality plan, the BAAQMD recommends that agencies analyze the project with respect to the following questions: (1) does the project support the primary goals of the air quality plan; (2) does the project include applicable control measures from the air quality plan; and (3) does the project not disrupt or hinder implementation of any 2010 CAP control measures. If all the questions are concluded in the affirmative, BAAQMD considers the project to be consistent with the 2010 CAP. The BAAQMD-recommended measure for determining if a project supports the goals in the current CAP is consistency with BAAQMD thresholds of significance. If a project would not result in significant and unavoidable air quality impacts, after the application of all feasible mitigation measures, the project would be consistent with the goals of the 2010 CAP. As indicated in the following discussion with regard to air quality impact questions b) and c), the Project would result in less than significant impacts during both construction and operation.

There are no 2010 CAP control measures that would be directly applicable to the proposed Project; however, implementation of the City's standard permit conditions (see checklist item b, below) would ensure that BAAQMD basic construction control measures would be implemented.

The Project would support the primary goals of the 2010 CAP and it would not disrupt or hinder implementation of any 2010 CAP control measures. Therefore, this would be a less than significant impact.

- b) **Less than Significant Impact.** The Project entails the construction and operation of a new Plant Air Compressor Building and associated piping to replace the existing instrument air system equipment. The 1,800 square foot building would house three air cooled air compressors, one wet air receiver tank, two refrigerator air dryers, and associated electrical panels. The Project would also include an approximately 1,500 square foot paved parking area north of the proposed building.

Project-related air quality impacts fall into two categories: short-term potential impacts due to construction, and long-term potential impacts due to operation. As detailed below, construction and operation of the Project would not result in a violation of an air quality standard or contribute significantly to an existing or projected air quality violation.

## Construction

Criteria pollutant and precursor exhaust emissions of reactive organic gases (ROG), nitrogen oxides (NO<sub>x</sub>), respirable particulate matter (PM<sub>10</sub>), and fine particulate matter (PM<sub>2.5</sub>) from construction equipment and vehicles would incrementally add to the regional atmospheric loading of these pollutants during construction of the Project. Impacts related to the Project contributing to an existing or projected air quality violation are judged by comparing estimated direct and indirect Project exhaust emissions to the significance thresholds, which for short-term construction emissions are 54 pounds per day for ROG, NO<sub>x</sub>, and PM<sub>2.5</sub>; and 82 pounds per day for PM<sub>10</sub>. Only the exhaust portion of PM<sub>2.5</sub> and PM<sub>10</sub> emissions are compared against the construction thresholds.

BAAQMD recommends that analyses of fugitive dust focus on implementation of dust control measures rather than comparing estimated levels of fugitive dust to a quantitative significance threshold. Rather, BAAQMD considers implementation of BAAQMD-recommended basic mitigation measures for fugitive dust sufficient to ensure that construction-related fugitive dust is reduced to a less than significant level. The City has standard permit conditions designed to reduce environmental impacts of projects. For relatively small projects, such as the proposed Project, the City and/or its construction contractor(s) are required to implement the BAAQMD's basic construction mitigation measures as defined below. Therefore, the dust-related construction impact would be less than significant.

The California Air Resources Board (CARB)'s Offroad emissions inventory database model was used to develop specific construction equipment ROG, NO<sub>x</sub>, and PM<sub>10</sub> emission factors for the San Francisco air basin for the year 2016. The Offroad database provides data for only NO<sub>x</sub>, PM, and total hydrocarbons, so factors identified by CARB were applied to convert total hydrocarbon emissions rates to ROG emissions rates.<sup>9</sup> PM<sub>10</sub> and PM<sub>2.5</sub> construction equipment exhaust emission factors were calculated by multiplying the PM emission factors by the mass fractions of PM<sub>10</sub> and PM<sub>2.5</sub> emissions in diesel exhaust, as provided by South Coast Air Quality Management District's (SCAQMD's) *Final-Methodology to Calculate Particulate Matter (PM) 2.5 and PM2.5 Significance Thresholds*.<sup>10</sup> Construction equipment emissions, as shown in **Table 2-1** below, were calculated by multiplying the Offroad emission factors for different equipment with the number of each type of construction equipment proposed to be used and by the amount of use hours for each type of equipment.

Project construction would take place from September 2016 to December 2017 over a period of 14 months. Construction equipment parameters used in the analysis were provided by the City. Additional assumptions and calculations are included in **Appendix A**.

<sup>9</sup> California Air Resources Board (CARB), 2000. Public Meeting to Consider Approval of Revisions to the State's On-road Motor Vehicle Emissions Inventory, Technical Support Document, Section 4.13 – Factors for Converting THC Emission rates to TOG/ROG, May 2000.

<sup>10</sup> South Coast Air Quality Management District, 2006. Final – Methodology to Calculate PM2.5 and PM2.5 Significance Thresholds, October 2006.

**TABLE 2-1  
CONSTRUCTION-RELATED EXHAUST EMISSIONS<sup>a</sup>**

Construction Phase	ROG	NOx	PM <sub>10</sub> <sup>b</sup>	PM <sub>2.5</sub> <sup>b</sup>
<b>Average Daily Emissions (pounds/day)</b>				
Pollutant Emissions	1.0	8.6	0.5	0.5
BAAQMD Construction Threshold	54	54	82	54
Significant Impact?	No	No	No	No
<b>Maximum Annual Emissions (tons/year)<sup>c</sup></b>				
Pollutant Emissions	0.12	1.04	0.06	0.06

<sup>a</sup> Emissions were estimated using CARB EMFAC and Offroad emission factors along with construction equipment and vehicle data provided by the City. Additional information is included in Appendix A.

<sup>b</sup> BAAQMD's proposed construction-related significance thresholds for PM<sub>10</sub> and PM<sub>2.5</sub> apply to exhaust emissions only and not to fugitive dust.

<sup>c</sup> There are no BAAQMD's proposed construction-related significance thresholds for annual emissions.

Emissions of ROG, NOX, PM<sub>10</sub>, and PM<sub>2.5</sub> from motor on-road vehicles were calculated by multiplying the estimated vehicle-miles-traveled (VMT) by each type of vehicle estimated to be used during the construction period by emission factors that were compiled by running CARB's EMFAC2014 Model. EMFAC2014 emission factors were estimated for average model years and average speed in Santa Clara County for the year 2016. The Project is expected to generate an average of seven worker commute trips per day along with two truck deliveries per day. The exact end points for the daily trips are not known at this time, so the on-road emission estimates were developed under the assumption that each worker trip would be 25 miles round trip, and each haul truck trip would be 40 miles round trip. Daily emissions by vehicle class (i.e., light-duty gasoline-fueled trucks and heavy-duty trucks) are estimated using the EMFAC2014 emission factors multiplied by the estimated project-related vehicle trips and the estimated daily mileage traveled by the vehicles.

In addition to exhaust and fugitive dust emissions, there would be some ROG off-gassing from asphalt during construction of the proposed 841 square foot parking area. However, given the relatively small size of the proposed parking area and the assumption that 2.62 pounds ROG would be released per acre paved, the associated ROG off-gassing emissions would be less than 0.1 pound.<sup>11</sup>

As shown in Table 2-1 above, estimated construction emissions would be below the respective BAAQMD significance thresholds. Therefore, impacts associated with construction-related exhaust emissions would be less than significant. However, the BAAQMD recommends that projects implement a set of Basic Construction Measures as best management practices regardless of the significance determination for exhaust emissions.

<sup>11</sup> California Air Pollution Control Officers Association (CAPCOA), 2013. California Emissions Estimator Model (CALEEMod), Appendix A Calculation Details for CalEEMod, revised July 2013.

Implementation of these BAAQMD recommended measures are required by the City as part of the project conditions of approval

***BAAQMD Basic Construction Measures***

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. 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.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. 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.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
8. 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.

**Operation**

Operation of the new Plant Air Compressor Building would not generate any emissions. The building would not be manned. Plant operators would visually check the facility during regular shifts but would not be expected to make routine maintenance trips to the building. Therefore, no new vehicle trips would be generated. The equipment in the building would operate using electric power and would therefore not generate any direct emissions at the Project site.

- c) **Less than Significant Impact.** In developing thresholds of significance for air pollutants, BAAQMD has considered the emission significance threshold levels for a project's individual emissions to also identify projects that would be cumulatively considerable. Based on BAAQMD guidance, if a project would result in an increase in ROG, NO<sub>x</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub> of more than its respective daily mass thresholds, then it would also be considered to contribute considerably to a significant cumulative impact.<sup>12</sup> Therefore, if a project would

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<sup>12</sup> Bay Area Air Quality Management District (BAAQMD), 2012. CEQA Air Quality Guidelines, revised May 2012.

exceed the identified significance thresholds, its emissions would be cumulatively considerable, and if a project would not exceed the significance thresholds, its emissions would not be cumulatively considerable.

Emissions of Project-related criteria pollutants associated with short-term construction (14 months) would be less than the identified significance thresholds and would not be considered to result in a significant contribution to existing air quality violations (see discussion for checklist item b, above). Therefore, the impact associated with short-term increases in criteria pollutant emissions would not be cumulatively considerable and would be less than significant.

- d) **Less than Significant Impact.** The new Plant Air Compressor Building would not generate any new long-term emissions. The building would not be manned and would not create any new vehicle trips. The equipment in the building would operate using electric power and would therefore not generate any new direct emissions at the Project site. Therefore, there would be no long-term operations-related impacts associated with exposure of sensitive receptors to substantial pollutant concentrations.

Construction activities over the 14-month period would generate air pollutant emissions, including diesel particulate matter associated with equipment and heavy truck exhaust emissions. However, the closest sensitive receptors to the Project area are located at a distance of at least one mile (5,600 feet) from the site. The BAAQMD has identified a distance of 1,000 feet from the source to the closest sensitive receptor locations within which community health risk impacts are likely. Given the relatively long distance from the Project site to the closest sensitive receptors, project-related construction emissions would be sufficiently diluted at the nearest sensitive receptor locations and construction health risk impacts would be less than significant.

- e) **Less than Significant Impact.** The Project would not introduce any new odor sources or sensitive receptors to the area. Therefore, the Project would not create odors impacts affecting a substantial number of people. This impact would be less than significant.

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## 2.4 Biological Resources

The approach to analysis for this Project is as follows: (1) review available biological resource surveys and relevant biological literature of the Project site and surrounding vicinity; and (2) review special-status species lists derived from the California Natural Diversity Database (CNDDDB), the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW), and the California Native Plant Society (CNPS).

**Previous Biological Resources Surveys and Relevant Biological Literature.** Certain project sites in the vicinity of the Facility and Project area have been previously surveyed for biological resources, including special-status wildlife and flora, waters of the United States (U.S.) and of the State, and other sensitive natural communities. No focused special-status wildlife or plant surveys were performed for this Project analysis.

The following documents were reviewed and are referenced to support the analysis of potential environmental impacts of the project:

- San José/Santa Clara Regional Wastewater Facility Iron Salt Feed Station Project Initial Study<sup>13</sup>
- Results of Top of Bank and Wetland Delineation, Iron Salts Feed Station, Technical Memorandum<sup>14</sup>
- San José/Santa Clara Water Pollution Control Plant Master Plan Draft EIR<sup>15</sup>
- Santa Clara Valley Habitat Plan<sup>16</sup>

**Special-Status Species.** Special-status species lists were derived from the CNDDDB, USFWS, CDFW, and CNPS for the Milpitas, Mountain View, Calaveras Reservoir, Newark, Niles, La Costa Valley, Cupertino, San José East, and San José West 7.5-minute U.S. Geological Survey quadrangles. The primary sources of data referenced in support of this analysis are as follows:

- Federal Endangered and Threatened Species that May be Affected by Projects in the Milpitas, Mountain View, Calaveras Reservoir, Newark, Niles, La Costa Valley, Cupertino, San José East, and San José West, California, U.S. Geological Survey 7.5-minute topographic quadrangles<sup>17</sup>
- CNDDDB, Rarefind 5 computer program<sup>18</sup>

<sup>13</sup> ESA, 2015. San José/Santa Clara Regional Water Facility Iron Salt Feed Station Project Initial Study. May 2015.

<sup>14</sup> ESA, 2015a. Results of Top of Bank and Wetland Delineation, Iron Salts Feed Station, City of San José/Santa Clara Regional Water Facility, Technical Memorandum. Prepared February 5, 2015.

<sup>15</sup> ESA | Jones and Stokes, 2013. San José/Santa Clara Water Pollution Control Plant Master Plan DEIR. November 2013.

<sup>16</sup> ICF International, 2012. Final Santa Clara Valley Habitat Plan. Prepared for the City of Gilroy, City of Morgan Hill, City of San José, County of Santa Clara, Santa Clara Valley Transportation Authority, and Santa Clara Valley Water District. August 2012.

<sup>17</sup> USFWS, 2015. Federal Endangered and Threatened Species that Occur in or May be Affected by Projects in the Milpitas\*, Mountain View, Calaveras Reservoir, Newark, Niles, La Costa Valley, Cupertino, San Jose East, and San Jose West U.S. Geological Survey 7.5-minute Quadrangles. USFWS Endangered Species Division. [http://www.fws.gov/sacramento/ES\\_Species/Lists/es\\_species\\_lists-form.cfm](http://www.fws.gov/sacramento/ES_Species/Lists/es_species_lists-form.cfm). Accessed October 27, 2015.

<sup>18</sup> CDFW, 2015a. Natural Diversity Database Rarefind 5. Biogeographic Data Branch, Sacramento. Data dated November 3, 2015.

- CNPS, Online Inventory of Rare and Endangered Plants<sup>19</sup>
- Special Vascular Plants, Bryophytes, and Lichens List<sup>20</sup>
- Special Animals List<sup>21</sup>

## 2.4.1 Setting

### Regional Setting

The project is located in the Bay Area–Delta Bioregion,<sup>22</sup> as defined by the State of California’s Natural Communities Conservation Program. This bioregion consists of a variety of natural communities that range from the open waters of San Francisco Bay and Delta to salt and brackish marshes to grassland, chaparral, and oak woodlands. The temperate climate is Mediterranean, with relatively mild, wet winters and warm, dry summers. The high diversity of vegetation and wildlife in the region is a result of soil, topographic, and microclimate variations, which combine to promote relatively high levels of endemism.<sup>23</sup> This, in combination with a long history of uses that have altered the natural environment and the increasingly rapid pace of development in the region, has endangered some of the local flora and fauna.

The San Francisco Bay-Delta is the second-largest estuary in the United States and supports numerous aquatic habitats and biological communities. It encompasses 479 square miles and includes shallow mudflats, tidal marshes, and open waters. The San Francisco Bay-Delta is an important wintering and migratory stopover site on the Pacific Flyway. More than 300,000 wintering waterfowl use the region.

### Local Project Setting

The Project is located approximately 3,900 feet south of the southern reaches of the San Francisco Bay and associated salt marsh and mudflat habitats. Land use surrounding the Project site includes other Facility operations. The Project includes the construction of a new instrument air compressor building within the Facility property (Figures 1-1 and 1-2).

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<sup>19</sup> CNPS, 2015. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, California. <http://www.cnps.org/cnps/rareplants/inventory> Accessed October 27, 2015.

<sup>20</sup> CDFW, 2015b. Natural Diversity Database. October 2015. Special Vascular Plants, Bryophytes, and Lichens List. Quarterly publication. 125 pp.

<sup>21</sup> CDFW, 2015c. Natural Diversity Database. October 2015. Special Animals List. Periodic publication. 50 pp.

<sup>22</sup> A bioregion is an area defined by a combination of ecological, geographic, and social criteria and consists of a system of related interconnected ecosystems. The Bay-Delta bioregion is considered the immediate watershed of the Bay Area and the Delta, not including the major rivers that flow into the Delta. It is bounded on the north by the northern edge of Sonoma and Napa Counties and the Delta and extends east to the edge of the valley floor; on the south, it is bounded by the southern edge of San Joaquin County, the eastern edge of the Diablo Range, and the southern edge of Santa Clara and San Mateo Counties.

<sup>23</sup> Endemism refers to the degree to which organisms or taxa are restricted to a geographical region or locality and thus are individually characterized as endemic to that area.

The Project area is located within the existing Facility grounds, west of the existing SBB and south of one group of secondary clarifiers. The proposed building site is an undeveloped grassy area at an elevation of approximately 18 feet above mean sea level. Two internal Facility access roads are located adjacent to the site to the northwest (Main Street) and north (“C” Street). A portion of the SBB and paved parking lot are located south of the Project area. Pavement, a maintained, non-native grass lawn, and two planted trees occur at the proposed site. The two would be removed under the Project.

### *Vegetation Communities and Habitat Types*

**Developed.** The existing wastewater treatment Facility that surrounds the Project site supports various tanks, treatment ponds, and operations or administrative buildings and is mostly paved or graveled with little or poor quality supportive habitat for vegetation or wildlife. The proposed Project would be located in an area that includes mown ornamental lawn grass surrounded by paved roads, parking and buildings. A few ornamental trees are located within or adjacent to the project site. Developed areas may support American crow (*Corvus brachyrhynchos*), Canada goose, (*Branta canadensis*), western scrub jay (*Aphelocoma californica*), northern mockingbird (*Mimus polyglottos*), and house finch (*Haemorhous mexicanus*). Several species of gull (*Larus* sp.) have also been observed over the Facility ponds during recent reconnaissance surveys for other projects at the Facility.

### *Special-Status Species*

A list of special-status plant and animal species that could occur in the vicinity of the Project area was compiled based on data described above in Approach to Analysis. **Table 2.4-1** and **Table 2.4-2** list special-status plants and animals, respectively, their preferred habitats and plant blooming periods, and their potential to occur in the Project area. **Figures 2.4-1** and **2.4-2** present special-status plant and animal occurrences, respectively, documented in the CNDDDB database and in the vicinity of the Project area. Conclusions regarding habitat suitability and the potential for species occurrence within the Project area are based on a reconnaissance survey of the project site, results described in previous studies and the analysis of existing literature and database queries described above.

### **Special-Status Plants**

No special-status plants were determined to have potential to occur on the Project site. Special-status plant species listed in Table 2.4-1 are considered to be absent from the Project site. The overall potential of the Project site to support special-status plants lacking, based on the lack of native plants and native vegetation communities and the presence of established populations of non-native and invasive weedy species on undeveloped areas and adjacent to the Project area. In addition, a review of historic aerial imagery of undeveloped portions of the Project area indicates continuous use of the Project site for several decades consistent with its current condition, as well as immediately surrounding areas. Evidence of recent disturbance reinforces the conclusion that special-status plants are unlikely to occur in the Project area.<sup>24</sup>

<sup>24</sup> “San José/Santa Clara Regional Wastewater Facility.” 37°25′39.53” N 121°56′48.09” W, GOOGLE EARTH. May 2011. October 2015.

**TABLE 2.4-1  
SPECIAL-STATUS PLANTS WITH POTENTIAL TO OCCUR IN THE PROJECT REGION**

Scientific and Common Names	Status Federal/State/CRPR	Geographic Distribution	Habitat Requirements	Potential Occurrence in Project Area
<i>Astragalus tener</i> var. <i>tener</i> Alkali milk-vetch	--/--/1B.2	Southern Sacramento Valley, northern San Joaquin Valley, east San Francisco Bay Area. Considered extirpated from Santa Clara County.	Alkali playas, on adobe clay in valley and foothill grassland, vernal pools on alkaline soils; below 60 meters above MSL. Blooms March - June	Absent; There is no suitable habitat within the Project area. May occur in the seasonal wetland located approximately 0.5 mile south of operational facility area.
<i>Atriplex depressa</i> Brittlescale	--/--/1B.2	Western and eastern Central Valley and adjacent foothills on west side of Central Valley	Alkaline clay soils in chenopod scrub, playas, valley and foothill grasslands, meadows and seeps and vernal pools on alkaline, clay soils; below 320 meters above MSL. Blooms April - October	Absent; there is no suitable habitat within the Project area.
<i>Atriplex joaquiniana</i> San Joaquin spearscale	--/--/1B.2	West edge of Central Valley from Glenn County to Tulare County. Also reported from Monterey and San Luis Obispo Counties	Alkaline soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland; below 835 meters above MSL. Blooms April - September	Absent; there is no suitable habitat within the Project area.
<i>Atriplex minuscula</i> Lesser saltscale	--/--/1B.1	Sacramento and San Joaquin Valley, Butte County and from Merced County to Kern County. Also recorded from Don Edwards NWR in Alameda County.	Sandy alkaline soils in chenopod scrub, playas, valley and foothill grassland; 15-200 meters above MSL. Blooms May - October	Absent; there is no suitable habitat within the Project area.
<i>Centromadia parryi</i> ssp. <i>congdonii</i> Congdon's tarplant	--/--/1B.1	East San Francisco Bay Area, Salinas Valley, Los Osos Valley	Alkaline soils in annual grassland, on lower slopes, flats, and swales, sometimes on saline soils; below 230 meters above MSL. Blooms May - October	Absent; No suitable habitat present at the project site. the species is documented in alkali grassland west of the Project area, outside of the operational facility area
<i>Chorizanthe robusta</i> var. <i>robusta</i> Robust spineflower	E/--/1B.1	Coastal central California, from San Mateo to Monterey County	Coastal bluff scrub, coastal dunes openings in cismontane woodland, on sandy soil. Blooms April - September	Absent; there is no suitable habitat within the Project area.
<i>Chloropyron maritimum</i> ssp. <i>palustre</i> Point Reyes bird's-beak	--/--/1B.2	Coastal northern California, from Humboldt to Santa Clara County, though presumed extirpated from Santa Clara County	Coastal salt marsh, tidal salt marsh; below 10 meters above MSL. Blooms June - October	Absent; there is no suitable habitat within the Project area.
<i>Eryngium aristulatum</i> var. <i>hooveri</i> Hoover's button-celery	--/--/1B.1	South San Francisco Bay area, South Coast Ranges in Alameda, San Benito, Santa Clara, and San Luis Obispo Counties, though presumed extirpated from Santa Clara County	Vernal pools; 3-45 meters above MSL. Blooms June - August	Absent; There is no suitable habitat within the Project area. May occur in the seasonal wetland located approximately 0.5 mile south of operational facility area.

**TABLE 2.4-1 (Continued)**  
**SPECIAL-STATUS PLANTS WITH POTENTIAL TO OCCUR IN THE PROJECT REGION**

Scientific and Common Names	Status Federal/State/CRPR	Geographic Distribution	Habitat Requirements	Potential Occurrence in Project Area
<i>Lasthenia conjugens</i> Contra Costa goldfields	E/--/1B.1	Scattered occurrences in Coast Range valleys and southwest edge of Sacramento Valley, Alameda, Contra Costa, Monterey, Marin, Napa, Solano and Sonoma Counties. Presumed extirpated in Mendocino, Santa Barbara and Santa Clara Counties	Wet areas in cismontane woodland, valley and foothill grassland, vernal pools, alkaline playas or saline vernal pools and swales; seasonal wetlands below 470 meters above MSL. Blooms March - June	Absent; there is no suitable habitat within the Project area.
<i>Malacothamnus arcuatus</i> arcuate bush-mallow	--/1B.2	Santa Clara, Santa Cruz, and San Mateo Counties	Chaparral, between 15-355 meters above MSL. Blooms April - September	Absent; there is no suitable habitat within the Project area.
<i>Malacothamnus hallii</i> Hall's bush mallow	--/1B.2	Alameda, Contra Costa, Merced, Santa Clara, and Stanislaus Counties	Chaparral and coastal scrub between 30-2,500'. Blooms May - September	Absent; there is no suitable habitat within the Project area.
<i>Navarretia prostrate</i> Prostrate vernal pool navarretia	--/1B.1	Western San Joaquin Valley, interior South Coast Ranges, central South Coast, Peninsular Ranges: Alameda, Los Angeles, Merced, Monterey, Orange, Riverside, San Diego, and San Luis Obispo Counties.	Vernal pools and mesic areas in coastal scrub and alkali grasslands, seasonal wetlands in alkaline soils; between 15-700 meters above MSL. Blooms April - July	Absent; there is no suitable habitat within the Project area.
<i>Suaeda californica</i> California seablite	E/--/1B.1	Morro Bay, San Luis Obispo County, and San Francisco and Contra Costa Counties; historically found in the south San Francisco Bay.	Margins of tidal salt marsh; below 15 meters above MSL. Blooms June - October	Absent; there is no suitable habitat within the Project area.
<i>Trifolium hydrophilum</i> ( <i>T. depauperatum</i> var. <i>hydrophilum</i> ) Saline clover	--/1B.2	Sacramento Valley, central western California.	Salt marsh, mesic alkaline areas in Valley and foothill grasslands, vernal pools, marshes and swamps; below 300 meters above MSL. Blooms April - June	Absent; There is no suitable habitat within the Project area. May occur in the seasonal wetland located approximately 0.5 mile south of operational facility area.

## NOTES:

**Potential Occurrence in the Project area:**

High = Species is expected to occur and habitat meets species requirements.

Moderate = Habitat is only marginally suitable or is suitable but not within species geographic range.

Low = Habitat does not meet species requirements as currently understood in the scientific community.

**Status Codes:****Federal**

E = listed as endangered under the ESA

T = listed as threatened under the ESA

-- = no listing

**State**

E = listed as endangered under CESA

T = listed as threatened under CESA

-- = no listing

**California Rare Plant Rank (CRPR):**

Rank 1A = Plants presumed extirpated in California and either rare or extinct elsewhere.

Rank 1B = Plants rare, threatened, or endangered in California and elsewhere.

Rank 2A = Plants presumed extirpated in California, but more common elsewhere.

Rank 2B = Plants rare, threatened, or endangered in California, but more common elsewhere.

Rank 3 = Plants about which we need more information – a review list

Rank 4 = Plants of limited distribution – a watch list

An extension reflecting the level of threat to each species is appended to each rarity category as follows:

.1 – Seriously endangered in California.

.2 – Fairly endangered in California.

.3 – Not very endangered in California.

SOURCE: CNPS, 2015; USFWS, 2015; CDFW, 2015a; CDFW, 2015b.

**TABLE 2.4-2  
SPECIAL-STATUS ANIMALS WITH POTENTIAL TO OCCUR IN THE PROJECT VICINITY**

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Project Area
<b>Invertebrates</b>				
<i>Branchinecta conservatio</i> Conservancy fairy shrimp	E/--	Disjunct occurrences in Solano, Merced, Tehama, Ventura, Butte, and Glenn Counties	Large, deep vernal pools in annual grasslands	Absent; Project area is outside of the species' known range.
<i>Euphydryas editha bayensis</i> Bay checkerspot butterfly	T/--	Disjunct occurrences in San Mateo and Santa Clara Counties.	Associated with specific host plants that typically grow on serpentine soils.	Absent; there is no suitable habitat for this species, as there are no serpentine soils in the Project area.
<i>Lepidurus packardii</i> Vernal pool tadpole shrimp	E/--	Shasta County south to Merced County.	Vernal pools and ephemeral stock ponds.	Absent; there is no suitable habitat in the Project area.
<b>Amphibians</b>				
<i>Ambystoma californiense</i> California tiger salamander	T/T	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Sonoma County south to Santa Barbara County	Small ponds, lakes, or vernal pools in grasslands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy.	Absent; No suitable habitat present at the project site. Suitable upland grassland habitat and suitable aquatic breeding habitat occurs in the seasonal wetland located approximately 0.5 mile south of the Project area, outside the operational facility; however there are no documented occurrences of this species within 4.5 miles of the Project area.
<i>Rana draytonii</i> California red-legged frog	T/SSC	Found along the coast and coastal mountain ranges of California from Mendocino County to San Diego County and in the Sierra Nevada from Butte County to Stanislaus County.	Permanent and semipermanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation; may aestivate in rodent burrows or cracks during dry periods	Absent; there is no suitable habitat in the Project area.
<b>Reptiles</b>				
<i>Emys marmorata</i> Western pond turtle	--/SSC	The western pond turtle is uncommon to common in suitable aquatic habitat throughout California, west of the Sierra-Cascade crest and absent from desert regions, except in the Mojave Desert along the Mojave River and its tributaries.	Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests. Nests are typically constructed in upland habitat within 0.25 mile of aquatic habitat.	Absent; there is no suitable habitat in the Project area.
<i>Masticophis lateralis euryxanthus</i> Alameda whipsnake	T/T	Restricted to Alameda and Contra Costa Counties; fragmented into 5 disjunct populations throughout its range	Valleys, foothills, and low mountains associated with northern coastal scrub or chaparral habitat; requires rock outcrops for cover and foraging	Absent; marginal habitat is present in the annual grasslands adjacent to the Project; however the Project area is outside of the known range for this species.

**TABLE 2.4-2 (Continued)**  
**SPECIAL-STATUS ANIMALS WITH POTENTIAL TO OCCUR IN THE PROJECT VICINITY**

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Project Area
<b>Mammals</b>				
<i>Reithrodontomys raviventris</i> Salt marsh harvest mouse	E/E	The San Francisco Bay Estuary and Suisun Marsh.	Saline to brackish salt marsh habitat.	Absent; there is no suitable habitat in the Project area.
<i>Sorex vagrans halicoetes</i> Salt-marsh wandering shrew	-/SSC	Southern arm of the San Francisco Bay in San Mateo, Santa Clara, Alameda, and Contra Costa Counties.	Salt marshes from 6 to 9 feet above mean sea level (MSL).	Absent; there is no suitable habitat in the Project area.
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	E/T	Principally occurs in the San Joaquin Valley and adjacent open foothills to the west; recent records from 17 counties extending from Kern County north to Contra Costa County	Saltbush scrub, grassland, oak, savanna, and freshwater scrub	Absent; outside of known range and there is no suitable habitat in the Project area.
<b>Birds</b>				
<i>Agelaius tricolor</i> Tricolored blackbird	--/SSC	Permanent resident in the Central Valley from Butte County to Kern County. Breeds at scattered coastal locations from Marin County south to San Diego County; and at scattered locations in Lake, Sonoma, and Solano Counties. Rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields. Habitat must be large enough to support 50 pairs. Probably requires water at or near the nesting colony	Low (foraging only); may occur over the Project area on a transient basis. There is no suitable nesting habitat in the Project area.
<i>Aquila chrysaetos</i> Golden eagle	--/ FP	Foothills and mountains throughout California. Uncommon non-breeding visitor to lowlands such as the Central Valley	Nest on cliffs and escarpments or in tall trees overlooking open country. Forages in annual grasslands, chaparral, and oak woodlands with plentiful medium and large-sized mammals	Low (foraging only); may occur over the Project area on a transient basis. There is no suitable nesting habitat in the Project area.
<i>Ardea herodias</i> Great blue heron (rookery)	--/--	Nests in suitable habitat throughout California except at higher elevations in Sierra Nevada and Cascade mountain ranges.	Widely distributed in freshwater and calm-water intertidal habitats.	Low (foraging only); may occur over the Project area on a transient basis. There is no known rookery in the Project area.
<i>Athene cunicularia hypugaea</i> Western burrowing owl	--/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast	Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows	Low (foraging only); western burrowing owl is known to forage and breed in the non-native grassland south and west of the Project area outside of the operational facility. Suitable habitat does not occur in areas that would be disturbed by the Project.

**TABLE 2.4-2 (Continued)**  
**SPECIAL-STATUS ANIMALS WITH POTENTIAL TO OCCUR IN THE PROJECT VICINITY**

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Project Area
<b>Birds (cont.)</b>				
<i>Charadrius alexandrinus nivosus</i> Western snowy plover	T/SSC	Population defined as those birds that nest adjacent to or near tidal waters, including all nests along the mainland coast, peninsulas, offshore islands, and adjacent bays and estuaries. Twenty breeding sites are known in California from Del Norte to Diego County	Coastal beaches above the normal high tide limit in flat, open areas with sandy or saline substrates; vegetation and driftwood are usually sparse or absent	Absent; there is no suitable habitat in the Project area.
<i>Circus cyaneus</i> Northern harrier	--/SSC	Occurs throughout lowland California. Has been recorded in fall at high elevations	Grasslands, meadows, marshes, and seasonal and agricultural wetlands	Low (foraging only); northern harrier is documented in the ruderal areas south and west of the Project area outside of the operational facility, and has the potential to forage in the Project area. Suitable habitat does not occur in areas that would be disturbed by the Project.
<i>Elanus leucurus</i> White-tailed kite	--/CFP	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border.	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	Low (foraging and nesting); white-tailed kite may forage in open grasslands outside of the operational facility. Suitable habitat does not occur in areas that would be disturbed by the Project.
<i>Falco mexicanus</i> Prairie falcon	--/--	Permanent resident in the south Coast, Transverse, Peninsular, and northern Cascade Ranges, the southeastern deserts, Inyo-White Mountains, foothills surrounding the Central Valley, and in the Sierra Nevada in Modoc, Lassen, and Plumas Counties. Winters in the Central Valley, along the coast from Santa Barbara County to San Diego County, and in Marin.	Nests on cliffs or escarpments, usually overlooking dry, open terrain or uplands	Low (foraging only); prairie falcon has the potential to forage within the Project area, but outside of the operational facility. Suitable nesting habitat is not present within the Project area.
<i>Falco peregrines anatum</i> American peregrine falcon	--/E, CFP	Permanent resident along the north and south Coast Ranges. May summer in the Cascade and Klamath Ranges and through the Sierra Nevada to Madera County. Winters in the Central Valley south through the Transverse and Peninsular Ranges and the plains east of the Cascade Range	Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers, or marshes that support large prey populations	Low (foraging only); American peregrine falcon has the potential to forage within the non-native grassland and other open habitat within the Project area, but outside of the operational facility. Suitable nesting habitat is not present within the Project area.

**TABLE 2.4-2 (Continued)**  
**SPECIAL-STATUS ANIMALS WITH POTENTIAL TO OCCUR IN THE PROJECT VICINITY**

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Project Area
<b>Birds (cont.)</b>				
<i>Geothlypis trichas sinuosa</i> Saltmarsh common yellowthroat	--/SSC	Found only in the San Francisco Bay Area in Marin, Napa, Sonoma, Solano, San Francisco, San Mateo, Santa Clara, and Alameda Counties	Freshwater marshes in summer and salt or brackish marshes in fall and winter; requires tall grasses, tules, and willow thickets for nesting and cover	Low; may occur over the Project on a transient basis. There is no suitable habitat in the Project area.
<i>Melospiza melodia pusillula</i> Alameda song sparrow	--/SSC	Found only in marshes along the southern portion of the San Francisco Bay	Brackish marshes associated with pickleweed; may nest in tall vegetation or among the pickleweed	Absent – there is no suitable habitat in the Project area.
<i>Pelecanus occidentalis californicus</i> California brown pelican	D/E	The Pacific coast from Canada through Mexico.	Coastal areas. Nests on islands. Occasionally along Arizona's lakes and rivers.	Low; may occur over the Project on a transient basis. There is no suitable habitat in the Project area.
<i>Rallus longirostris obsoletus</i> Ridgway's (=California clapper) rail	E/CFP	Found along the Pacific Coast in Monterey and San Luis Obispo Counties.	From tidal mudflats to tidal sloughs	Absent; there is no suitable habitat in the Project area.
<i>Sternula antillarum browni</i> California least tern	E/E	Found along the Pacific Coast of California from San Francisco to Baja California	Nest on open beaches kept free of vegetation by natural scouring from tidal action	None; there is no suitable habitat in the Project area.

## NOTES:

**Potential Occurrence in the Project area:**

High = Species is expected to occur and habitat meets species requirements.

Moderate = Habitat is only marginally suitable or is suitable but not within species geographic range.

Low = Habitat does not meet species requirements as currently understood in the scientific community.

**Status Codes:****Federal**

E = listed as endangered under the ESA

T = listed as threatened under the ESA

-- = no listing

**State**

E = listed as endangered under CESA

T = listed as threatened under CESA

SSC = California Department of Fish and Wildlife designated "species of special concern"

CFP = California Department of Fish and Wildlife designated "fully protected"

-- = no listing

SOURCE: USFWS, 2015; CDFW, 2015a; CDFW, 2015c.

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CNDDB version October 2015. The occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not yet been surveyed and/or mapped. Details on documented locations of special-status species is withheld by CNDDB due to the sensitivity of the information.

San José / Santa Clara Regional Wastewater Facility Plant Instrument Air System Upgrade IS/MND. 131002.16  
SOURCE: ESRI, 2015; ESA, 2015

**Figure 2.4-1**  
Special-Status Plant Occurrences in the Project Vicinity

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CNDDDB version October 2015. The occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not yet been surveyed and/or mapped. Details on documented locations of special-status species is withheld by CNDDDB due to the sensitivity of the information.

San José / Santa Clara Regional Wastewater Facility Plant Instrument Air System Upgrade IS/MND. 131002.16  
SOURCE: ESRI, 2015; ESA, 2015

**Figure 2.4-2**  
Special-Status Animal Occurrences in the Project Vicinity

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### Special-Status Animals

The following special-status animals were determined to have a moderate potential to occur in or next to the Project area:

- Resident and migratory birds

#### *Breeding Birds*

Fish and Game Code Sections 3503 and 3503.5, and the Migratory Bird Treaty Act protect raptors and passerines and their eggs and nests from incidental “take”. These protections apply to special-status birds identified in Table 2.4-2 and other resident or migratory birds that may occur in the project area.

**Western burrowing owl** (*Athene cunicularia*), a California species of special concern, is a California resident that prefers open annual or perennial grasslands and disturbed sites with existing burrows, elevated perches, large areas of bare ground or low vegetation, and few visual obstructions. Ground squirrel colonies often provide a source of burrows and are typically located near water and areas with large numbers of prey species, primarily insects. Breeding takes place between March and August, with a peak in April and May. Breeding burrowing owls are documented to the south, southwest, and southeast of the Project area in annual grasslands where suitable burrows for nesting are prevalent, and where ongoing vegetation management activities are aimed at enhancing burrowing owl habitat. Western burrowing owl is known to forage and breed in the non-native grassland south and west of the Project site outside of the Facility operational area. Suitable habitat does not occur in areas that would be disturbed by the Project, therefore the Project would not affect burrowing owl nesting or foraging habitat.

**Other resident and migratory birds.** Several birds could nest within the Project area in trees, shrubs, and on buildings or adjacent to the Project site. Raptors such as white-tailed kite (*Elanus leucurus*), a CDFW fully protected species, red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), American kestrel (*Falco sparverius*), Cooper’s hawk (*Accipiter cooperi*), and great horned owl (*Bubo virginianus*) may nest in mature river red gum eucalyptus on the bank of Artesian Slough Channel, located approximately 1,500 feet southwest of the Project site. Additional native birds that may nest in the Project area include European starling (*Sturnus vulgaris*), black phoebe (*Sayornis nigricans*), house finch, Anna’s hummingbird (*Calypte anna*), mourning dove (*Zenaida macroura*), and white-crowned sparrow (*Zonotrichia leucophrys*).

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Checklist Sources</i>
<b>4. BIOLOGICAL RESOURCES — Would the project:</b>					
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1,2,8,9
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1,2,8
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1,2,8
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1,2
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2,9

## 2.4.2 Discussion

- a) **Less than Significant with Mitigation.** Land cover within the Project area includes developed areas. No special-status plants are anticipated to occur within the Project area due to the lack of supportive vegetation communities required for the regional species listed in Table 2.4-1, above. Special-status animals with potential to occur in the Project area or its vicinity include golden eagle, western burrowing owl, northern harrier, white-tailed kite, prairie falcon, American peregrine falcon, and other resident and migratory birds protected under the Migratory Bird Treaty Act and California Department of Fish and Game Code. With the exception of the burrowing owl and white-tailed kite, none of these raptors are known to breed in the vicinity of the Project site due to lack of suitable nest sites for these species, or the Project site is located outside of their known breeding range; therefore, they are only expected to forage over the Project area. Other raptors and smaller passerines could nest in trees, shrubs, or buildings within the Project or surrounding vicinity.

Construction activities, especially those that involve ground disturbance and the use of heavy machinery, as well as the removal of trees, may affect nesting birds including special-

status birds which may occur in the Project area. The addition of lighting associated with the construction and operation of new facilities may also result in adverse effects on breeding birds. The loss of any active nest or disruption of nesting efforts would be considered a potentially significant impact. (**IMPACT BIO-1**)

Implementation of **Mitigation Measures BIO-1a** and **BIO-2b** would ensure that potential impacts are mitigated to a less- than-significant level.

**Mitigation Measure BIO-1a: Preconstruction Surveys for Nesting Birds.**

If possible, construction shall be scheduled between September and January (inclusive) to avoid the nesting season. If Project construction is scheduled during breeding bird season (February 1–August 31), City’s Environmental Services Department (ESD) or its contractor shall retain a qualified biologist to conduct a survey for nesting raptors and migratory bird nests within 7 days of the start of construction or after any construction breaks of 14 days or more, within 7 days prior to the resumption of construction. Surveys shall be performed for the Project area and for suitable habitat within 300 feet. If an active nest is identified, a no-disturbance buffer zone around the nest tree (or, for ground-nesting species, or nests identified on Facility buildings, the nest itself) shall be established. The no-disturbance zone shall be marked with flagging or fencing that is easily identified and avoided by the construction crew. In general, the minimum buffer zone widths shall be as follows: 100 feet (radius) for non-raptor species and 300 feet (radius) for raptor species; however, they may be adjusted if an obstruction, such as a building, is within line-of-sight between the nest and construction. Buffer widths may be modified based on consultation with California Department of Fish and Wildlife (CDFW). Buffers shall remain in place as long as the nest is active or young remain in the area and are dependent on the nest.

Construction activities that are scheduled to begin outside the breeding season (September through January) can proceed without surveys. If possible, all necessary tree and vegetation removal should be conducted before the start of breeding bird season to minimize the opportunity for birds to nest at the Project site and conflict with Project construction activities.

ESD will notify Planning, Building and Code Enforcement (PBCE) Senior Environmental Planner when the mitigation plan and mitigation actions will occur for approval.

**Mitigation Measure BIO-1b: Minimize Light Pollution.**

Lights at the Project site (during construction and operation) shall be directed downward and shielded where necessary to ensure that no fugitive light spills out into natural lands and interferes with typical avian behavior. ESD qualified personnel will inspect lighting plans and/or specifications. ESD will notify Planning, Building and Code Enforcement (PBCE) Senior Environmental Planner when the mitigation plan and mitigation actions will occur for approval.

- b) **No Impact.** The Project area does not include 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; therefore, no impact to sensitive natural communities are expected to occur.

- c) **No Impact.** No wetlands occur within the Project site or surrounding area; therefore, no impacts to federally protected wetlands are expected to occur.
- d) **Less than Significant with Mitigation.** The Project site is currently within the greater San José/Santa Clara Regional Wastewater Facility fence. As such no significant wildlife movement and no known migratory corridors occur within the Project area; therefore, no impacts to wildlife movement or migratory corridors would occur. Breeding bird nests which may be disrupted by Project activities are discussed under checklist item a. (**IMPACT BIO-1**) Potential adverse effects resulting from Project development are reduced through the implementation of Mitigation Measure BIO-1a: Preconstruction Surveys for Nesting Birds, and Mitigation Measure BIO-1b: Minimize Light Pollution.
- e) **Less than Significant.** The City of San José Tree Ordinance requires a Tree Permit Adjustment for the removal of any tree on industrial properties, and offers additional protections to trees measuring 56 inches in circumference or greater when measured two feet above ground level (City of San José Municipal Code Section 13.32.020 I). Trees protected under the ordinance are referred to as “Ordinance Trees”. The Project would result in the removal of up to three mature trees of native species (Chinese Pistache [*Pistacia chinensis*]) located within the Project site. The Project will be required to conform to the City’s tree ordinance, and the City will provide replacement trees in conformance with the policy. Typical mitigation is planting four 24-inch box trees for each tree removed; however, final mitigation required is subject to approval by the Director of Planning. Implementation of the following project condition of approval would reduce Project impacts associated with removal of Ordinance Trees to a less-than-significant level.

#### **Compensate for Removal of Protected Trees.**

As part of the project condition of approval, the three trees to be removed will be replaced on-site or off-site, in consultation with the City Arborist, at the accepted ratios or pay an in-lieu fee to Our City Forest to compensate for the loss of the three trees. Protected trees that are lost as a result of the Project will be replaced at a minimum of four 24-inch box trees per tree removed. Tree replacement amounts shall be subject to the City’s Director of Planning, who will determine the final mitigation for impacts to protected trees. Replacement trees can be planted in a suitable location on Facility property or on other City property, to be identified by the City Arborist and approved by the Director of Planning.

- f) **Less than Significant Impact.** The Project is outside of the Santa Clara Valley Habitat Plan (SCVHP) study area. It is not a covered activity under the SCVHP. However, the SCVHP includes an Expanded Study Area for Burrowing Owl Conservation, as defined in the SCVHP, and the Project site is located within this area (refer to **Figure 2.4-3**). Although the Project site is located within the SCVHP Expanded Study Area for Burrowing Owl Conservation, the Project would not result in impacts to burrowing owl nesting or foraging habitat. Therefore, the Project is deemed consistent with the SCVHP. No other SCVHP covered species would be impacted by the Project.



SOURCE: ESA, 2015; ESRI, 2015

San José/Santa Clara Regional Wastewater Plant Instrument Air System Upgrade IS/MND. 131002.16

**Figure 2.4-3**  
Santa Clara Valley Habitat Plan

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## 2.5 Cultural Resources

### 2.5.1 Setting

Cultural resources include architectural resources, archaeological resources, tribal cultural resources, and human remains. Paleontological resources include fossilized remains of vertebrate and invertebrate organisms, fossil tracks and trackways, and plant fossils. This section provides an assessment of cultural and paleontological resources that might be present in the vicinity of the proposed Project.

#### Historical Architectural Resources

The Facility was originally constructed in 1956 with major alterations and additions through the late 1970s. The 1950s-era facilities are now of a sufficient age that they could be considered historical resources if other criteria apply, such as significant associations with historical events, people, or architectural styles or master architects/engineers, and if sufficient integrity remains to convey such associations (if any). Based on the analysis completed for the Master Plan, there are no buildings or structures within the Facility that have been previously identified as a historical resource as defined in CEQA Guidelines Section 15064.5, or as a City of San José Landmark. The Facility as a whole has been altered substantially within the last 35 years and does not qualify as a historic district due to a lack of physical integrity. Two buildings (the Pump & Engine building and the Training Center) largely retain their original appearance and with additional research and upon further review may qualify as historical resources or a City Landmark. These potential architectural resources are located approximately 1,100 and 1,300 feet to the west of the Project area.

#### Archaeological Resources, Tribal Cultural Resources, and Human Remains

Environmental Science Associates (ESA; environmental consultant to the City for the Master Plan EIR and this Project) completed a cultural resources study for the Master Plan and this Project.<sup>25</sup> Research included a records search at the Northwest Information Center of the California Historical Resources Information System on August 1, 2011 (File No. 11-0118) that was updated on November 5, 2014 (File No. 14-0594) and February 12, 2015 (File No. 14-4014). Previous surveys, studies, and archaeological site records were reviewed. Records were also examined in the Historic Property Data File for Santa Clara County, which contains information on locations of recognized historical significance including those evaluated for listing in the National Register of Historic Places (National Register), the California Register of Historical Resources (California Register), the California Inventory of Historic Resources, California Historic Landmarks, and California Points of Historical Interest. The purpose of the records search was to (1) determine whether known cultural resources have been recorded within or adjacent to the Project area and a one mile radius; (2) assess the likelihood for unrecorded cultural resources to be present based on historical references and the distribution of nearby sites; and (3) develop a context for the identification and evaluation of cultural resources.

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<sup>25</sup> ESA, 201. Cultural Resources Study for the Plant Instrument Air System Upgrade Project. October 2015.

Six archaeological resources have been recorded within the one mile records search radius; all six are prehistoric occupation sites with midden soils, fire-affected rock, faunal remains, and/or Native American artifacts. At least two of the sites are known to contain human burials. None of these resources are located within the Project area; the nearest is approximately ½-mile to the southeast.

ESA completed a surface survey of the Project site on October 15, 2015. The survey completed in approximately 10-meter-wide zigzag transects in order to ensure maximum ground coverage. Ground visibility was limited (approximately 10%) due to the existing landscaping (ornamental grasses) covering the entire Project site. Rodent holes, holes from recent lawn aeration, and the soil around landscaped trees were inspected. The topsoil consisted of artificially deposited gravel and fill that had been graded during construction of the Facility. Soil observed in rodent holes consisted of medium brown silty clay with some rounded and angular cobbles. No archaeological resources, including midden soil, shell fragments, or other evidence of past human use, were identified at the Project site.

The general Project vicinity is mapped as Holocene-age alluvium, which consists of primarily fine-grained sands, silt, and mud that have been deposited by the creeks and streams of the region as they discharge into the bay. This geologic formation has a high potential to contain buried “paleosols” or surfaces that would have once been available for human use and occupation prior to being covered by naturally occurring sediment deposits. Numerous deeply buried sites have been uncovered in the Santa Clara Valley, at depths varying between one and more than 10 feet below the current ground surface. In fact, more than 60 percent of the recorded archaeological sites in this region have been found in a buried context. The Project area is in a location disturbed from previous impacts related to the construction and operation of the Facility. Geotechnical boring logs record imported or reworked fill ranging from 3.5 to 11.5 feet in depth throughout the greater Facility. For the Project, the depth of ground disturbance would be approximately eight feet below existing ground surface. Boring logs from an investigation immediately adjacent to the Project area indicate depth of fill at this location to be approximately eight feet deep. The Project would therefore be conducted within artificially deposited and disturbed fill and despite the general sensitivity of the Project vicinity for deeply buried archaeological resources, there appears to be a low possibility of encountering intact paleosols with cultural materials.

ESA submit a Sacred Lands File search request to the Native American Heritage Commission (NAHC) on August 1, 2011 that was updated on March 30, 2015. ESA received a response on April 27, 2015. The NAHC responded that a search of their Sacred Lands File failed to indicate the presence of Native American cultural resources in the immediate vicinity of the Project area. The NAHC cautioned, however, that the absence of specific site information in the Sacred Lands File does not indicate the absence of cultural resources. The NAHC provided a list of 11 Native American individuals and organizations that might have additional information.

Previous requests for information during analysis for the Master Plan EIR indicate that there are no tribal cultural resources in the Project area. The City sent updated letters to each Native American individuals and organizations on October 23, 2015 and will engage in additional consultation as requested.

## Paleontological Resources

The Project area overlies young Holocene-age geologic units. Beneath a cap of 3.5 to 11.5 feet of artificial fill lies deposits of mud and silt associated with the present-day bay estuary (bay mud) and the distal edges of alluvial fans. Artificially deposited fill and young Holocene-age geologic units do not have the potential to contain paleontological resources. For these reasons, in accordance with Society of Vertebrate Paleontology standards, there is a low paleontological potential within the Project area.

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Checklist Source(s)</i>
<b>5. CULTURAL RESOURCES — Would the project:</b>					
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,2,7
b) 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"/>	1,2,7
c) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in §21074?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,7
d) 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"/>	1,2,7
e) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1,2,7

### 2.5.2 Discussion

- a) **No Impact.** CEQA Guidelines Section 15064.5 requires the lead agency to consider the effects of a project on historical resources. A historical resource is defined as a building, structure, site, object, or district (including landscapes) listed in or determined to be eligible for listing in the California Register, or determined by a lead agency to be significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California. The following discussion will focus on architectural and structural resources. Archaeological resources, including archaeological resources that are potentially historical resources according to Section 15064.5, are addressed below.

Based on the analysis provided above under the subheading “Historical Resources”, the proposed Project would result in no impacts to historical resources as defined by CEQA Section 15064.5, as no such resources are located in or near the Project site. The proposed Project would be constructed at least 1,100 feet from potentially eligible historical resources at the Facility, and due to the relatively far distance between these potential resources and the Project site, the proposed Project would have no direct or indirect effects upon them. No mitigation is required.

- b) **Less than Significant with Mitigation.** This section discusses archaeological resources, both as historical resources according to Section 15064.5 as well as unique archaeological resources as defined in Section 21083.2(g).

Based on the analysis provided above under the subheading “Archaeological Resources, Tribal Cultural Resources, and Human Remains”, the proposed Project has a low potential to uncover archaeological resources. While unlikely, given the general sensitivity of the Project vicinity, the inadvertent discovery of archaeological resources cannot be entirely discounted. Impacts to archaeological resources would be potentially significant. **(IMPACT CUL-1)**

In the event that archaeological resources are encountered during ground disturbing activities the following mitigation measure would reduce impacts to a less than significant level.

**Mitigation Measure CUL-1: Inadvertent Discovery of Archaeological Resources.**

If prehistoric or historic-era archaeological resources are encountered by construction personnel during Project implementation, all construction activities within 100 feet shall halt and the contractor shall notify ESD personnel and PBCE Senior Environmental Planner. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, hand stones, or milling slabs); battered stone tools, such as hammer stones and pitted stones. Historic-era materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse.

City’s Environmental Services Department (ESD) or its contractor shall retain a Secretary of the Interior-qualified archaeologist to inspect the findings within 24 hours of discovery. If it is determined that the Project could damage a historical resource as defined by CEQA, construction shall cease in an area determined by the archaeologist until a mitigation plan has been prepared, approved by the PBCE Senior Environmental Planner, and implemented to the satisfaction of the archaeologist (and Native American representative if the resource is prehistoric, who will be identified by the Native American Heritage Commission [NAHC]). In consultation with the PBCE Senior Environmental Planner, the archaeologist (and Native American representative) shall determine when construction can resume.

The mitigation plan shall recommend preservation in place, as a preference, or, if preservation in place is not feasible, data recovery through excavation. If preservation in place is feasible, this may be accomplished through one of the following means: (1) modifying the construction plan to avoid the resource; (2) incorporating the resource within open space; (3) capping and covering the resource before building appropriate facilities on the resource site; or (4) deeding the resource site into a permanent conservation easement. If preservation in place is not feasible, a qualified archaeologist shall prepare and implement a detailed treatment plan to the satisfaction of the PBCE Senior Environmental Planner to recover the scientifically consequential information from the resource prior to any excavation at the resource site. Treatment for most resources would consist of (but would not necessarily be limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the significant

resource to be impacted by the project. The treatment plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, curation of artifacts and data at an approved facility, and dissemination of reports to local and state repositories, libraries, and interested professionals.

- c) **No Impact.** CEQA Section 21074.2 requires the lead agency to consider the effects of a project on tribal cultural resources. As defined in Section 21074, tribal cultural resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing, on the national, state, or local register of historical resources.

Based on the analysis provided above under the subheading “Archaeological Resources, Tribal Cultural Resources, and Human Remains”, background research and previous requests for information indicate that there are no tribal cultural resources in the Project area. The Project would have no impact to tribal cultural resources. No mitigation is required.

- d) **No Impact.** A significant impact would occur if a project would destroy a unique paleontological resource or site, or a unique geologic feature. Paleontological resources are the fossilized evidence of past life found in the geologic record. Despite the tremendous volume of sedimentary rock deposits preserved worldwide, and the enormous number of organisms that have lived through time, preservation of plant or animal remains as fossils is an extremely rare occurrence. Because of the infrequency of fossil preservation, fossils—particularly vertebrate fossils—are considered to be nonrenewable resources. Because of their rarity, and the scientific information they can provide, fossils are highly significant records of ancient life.

The Project site is underlain by artificial fill deposits over bay mud and the distal edges of alluvial fans. This geologic deposit is not likely to yield significant paleontological remains, because it is a surface deposit that is not considered to be a fossil-bearing rock unit. The proposed Project would have no impact on paleontological resources. No mitigation is required.

- e) **Less than Significant with Mitigation.** There is no indication that the Project site has been used for burial purposes in the recent or distant past. In the unlikely event of the discovery of human remains during Project construction, the following mitigation measure would reduce impacts to a less than significant level. (**IMPACT CUL-2**)

**Mitigation Measure CUL-2: Inadvertent Discovery of Human Remains.**

If human remains are encountered by construction personnel during project implementation, all construction activities within 100 feet shall halt and the contractor shall notify the PBCE Senior Environmental Planner. ESD shall contact the Santa Clara County Coroner to determine whether or not the remains are Native American. If the remains are determined to be Native American, the Coroner shall contact the Native American Heritage Commission (NAHC). The NAHC will then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn would make recommendations to the City for the appropriate means of treating the human remains and any associated funerary objects.

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## 2.6 Geology, Soils, and Seismicity

### 2.6.1 Setting

The Project is located near southern end of the San Francisco Bay, which is within the geologically complex California Coast Ranges geomorphic province.<sup>26,27</sup> The Coast Ranges province is characterized by a series of northwest-trending ridges and valleys that run roughly parallel to the San Andreas fault zone, and can be further divided into the northern and southern ranges that are separated by the San Francisco Bay. The San Francisco Bay lies within a broad depression created from an east-west expansion between the San Andreas and the Hayward fault systems. The tectonic forces that dominate the region developed from the margin between the Pacific Plate and the North American Plate where the Pacific Plate slowly creeps northward past the North American Plate on the San Andreas, Hayward, and associated subsidiary faults.

Topography on the Project site is largely flat, gently sloping from an elevation of 18 feet above mean sea level (msl) at the southeast corner of the site, to 10 feet msl at the northwestern corner. The Project area has been historically underlain by artificial fills. Fill may be engineered or non-engineered material, and both may occur on site or in the vicinity of the Project. A geotechnical investigation conducted for the Project identified artificial fill ranging in thickness from approximately nine to 11 feet.<sup>28</sup>

The native soils underlying the Project area and vicinity have a high shrink-swell potential due to the presence of saturated clays with high plasticity<sup>29</sup>. However, shrink-swell potential on site is expected to be more limited due to the historic placement of several feet of fill material as noted above.

The Project lies within a region of California that contains many active and potentially active faults and is considered an area of high seismic activity. Accounting for the wide range of possible earthquake sources and for multi-fault ruptures, it is estimated that the Bay Area as a whole has a 72 percent chance of experiencing an earthquake of magnitude 6.7 or higher before 2045.<sup>30</sup> According to a recent forecast published by the U.S. Geological Survey, the individual faults posing the greatest threat to the Bay Area are the Hayward-Rodger's Creek fault and the San Andreas fault. Other faults capable of producing significant earthquakes in the Bay Area include the Calaveras, Concord–Green Valley, Marsh Creek–Greenville, and the San Gregorio faults. However, the Project area is not located on or immediately adjacent to any active faults.

<sup>26</sup> California's geomorphic provinces are naturally defined geologic regions that display a distinct landscape or landforms with unique, defining features based on geology, faults, topographic relief, and climate.

<sup>27</sup> California Geological Survey. *California's Geomorphic Provinces*, CGS Note 36, 2002.

<sup>28</sup> AECOM, 2015. Draft Memorandum: Geotechnical Investigation and Recommendations, Plant Air Compressor Building, San Jose/Santa Clara Regional Wastewater Facility (RWF). September 22.

<sup>29</sup> National Resources Conservation Service, Linear Extensibility – Santa Clara Area, California, Western Part. Version 3, September 18, 2014.

<sup>30</sup> Field, E.H., and 2014 Working Group on California Earthquake Probabilities, 2015, UCERF3: A new earthquake forecast for California's complex fault system: U.S. Geological Survey 2015–3009, 6 p., <http://dx.doi.org/10.3133/fs20153009>.

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Checklist Source(s)</i>
<b>6. GEOLOGY, SOILS, AND SEISMICITY — Would the project:</b>					
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:					
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2,8
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2,9
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2,9
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,2

## 2.6.2 Discussion

- a.i) **Less than Significant Impact.** No Alquist-Priolo zones are mapped on the Project area or in their vicinity.<sup>31</sup> While it is possible that surface rupture could occur outside of these zones, the risk of occurrence is not substantial. The extent to which the Project would expose people or structures to impacts involving rupture of a known earthquake fault is less than significant.
- a.ii, iii) **Less than Significant Impact.** As noted above, the Project area is located within a seismically active region. As a result, the proposed facilities, including the proposed tanks, pumps, and various other Project features, could be subject to strong seismic ground shaking, seismic failure, or liquefaction during an earthquake. The Project is within a liquefaction zone of required investigation.<sup>32</sup> Strong seismic shaking could occur as a result of seismic activity

<sup>31</sup> California Geological Survey, *Special Studies Zones, Milpitas, Revised Official Map*. Effective January 1, 1982.

<sup>32</sup> California Geological Survey, *Seismic Hazard Zones, Milpitas Quadrangle, Official Map*. Released October 19, 2004.

along any of the faults noted above and trigger liquefaction in the Project area. As required for zones of required investigation, a geotechnical investigation has been prepared for the Project (Appendix B), which identifies the extent of settlement that could occur at the site during a large earthquake and provides feasible engineering recommendations to remedy potentially adverse soil and seismic conditions, in addition to providing the necessary soil and foundation information required by the structural engineer designing the building.<sup>33</sup> The site could experience up to two inches of settlement resulting from liquefaction. The Project would be designed in accordance with geotechnical recommendations made in this investigation, and would be required to incorporate standard engineering and construction techniques related to seismicity, in accordance with the requirements of the California Building Code. Geotechnical investigation recommendations include the use of flexible piping connections, the design of the building foundation and retaining wall to accommodate lateral earthquake loading, and the compaction of fill to accepted engineering standards.<sup>34</sup> Adherence to these recommendations and requirements would minimize potential impacts of strong seismic ground shaking, seismic-related ground failure, and liquefaction on site.

- a.iv) **Less than Significant Impact.** The Project area has limited topographic relief, with elevations on site spanning a differential of less than 10 feet. Therefore, potential for landslides on the sites, including seismically induced landslides, is considered remote.
- b) **Less than Significant Impact.** Project construction would involve construction staging, as well as ground disturbance during on site grading and trenching. In the event of a rain storm, erosion on site could occur, with sediment from the Project area becoming entrained in stormwater runoff from the site. However, potential for erosion and loss of sediment from the site during construction would be minimized via adherence to applicable permitting requirements, as discussed in greater detail for Checklist Item c in Section 2.9, Hydrology and Water Quality. Additionally, soils onsite would be stabilized near the end of the construction process, and the proposed facility (which would include paved surfaces and a building) are not expected to be subject to substantial erosion or topsoil loss.
- c) **Less than Significant Impact.** The potential for seismic-related ground failure, including liquefaction, and landslides for the project are discussed above under a.iii) and a.iv). Soils at the site are not considered collapsible due to the depositional environment of the sediments (collapsible soils are usually deposited in arid climates). Ground subsidence in response to groundwater withdrawal has occurred in the Santa Clara Valley historically; however, the Santa Clara Valley Water District now actively manages groundwater levels in the area such that subsidence is limited. The Project would not contribute to subsidence. Lateral spreading could occur during excavation if a liquefiable layer is present in the subsurface; however, graded areas would be required to comply with California OSHA, which would limit the

<sup>33</sup> AECOM, 2015. Draft Memorandum: Geotechnical Investigation and Recommendations, Plant Air Compressor Building, San Jose/Santa Clara Regional Wastewater Facility (RWF). September 22.

<sup>34</sup> AECOM, 2015. Draft Memorandum: Geotechnical Investigation and Recommendations, Plant Air Compressor Building, San Jose/Santa Clara Regional Wastewater Facility (RWF). September 22.

- potential for lateral spreading by sloping and shoring excavated areas. Compliance with these state standards, in addition to measures in the geotechnical investigation, would reduce the potential hazard from unstable soils, including lateral spreading, subsidence, or liquefaction would reduce impacts to less-than-significant.
- d) **Less than Significant Impact.** Expansive soils can damage overlying structures over time through different periods of wetting and drying. Although native soils underlying the Project area have high shrink-swell potential, this potential is limited due to the placement of fill on the sites, where the fill is anticipated to have limited shrink-swell potential. Additionally, adherence to standard engineering and construction techniques in accordance with the requirements of the California Building Code would further minimize potential effects of expansive soils on the Project site, as the California Building Code includes building permit requirements that mitigate the hazard posed by expansive soils. Geotechnical investigation recommendations regarding compaction of fill material would also reduce the potential damage resulting from expansive soils. With compliance with applicable construction requirements in the California Building Code that require application of design criteria from the geotechnical engineer or engineering geologist, and implementation of measures identified in the geotechnical investigation, this impact would be less than significant.
- e) **No Impact.** The Project would not utilize septic systems or other alternative disposal systems for the disposal of wastewater. No impact would occur.

## 2.7 Greenhouse Gas Emissions

### 2.7.1 Setting

Various gases in the Earth's atmosphere, classified as atmospheric greenhouse gases (GHGs), play a critical role in determining the Earth's surface temperature. Solar radiation enters the atmosphere from space and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower frequency infrared radiation. GHGs, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect, or climate change, are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), ozone (O<sub>3</sub>), water vapor, nitrous oxide (N<sub>2</sub>O), and chlorofluorocarbons (CFCs). Unlike emissions of criteria and toxic air pollutants, which have local or regional impacts, emissions of GHGs have a broader, global impact. Anthropogenic or man-made emissions of these GHGs in excess of natural ambient concentrations are responsible for enhancing the greenhouse effect and global climate change. Some of the potential effects of global warming may include loss of snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years.

Assembly Bill (AB) 32, signed in September 2006, requires the state's global warming emissions to be reduced to 1990 levels by 2020. After completing a comprehensive review and update process, the CARB approved a 1990 statewide GHG level and 2020 limit of 427 million metric tons (MMT) of carbon dioxide equivalents (CO<sub>2</sub>e). In December 2008, CARB approved the AB 32 Scoping Plan outlining the state's strategy to achieve the 2020 GHG emissions limit. The Scoping Plan estimates a reduction of 174 MMT CO<sub>2</sub>e and proposes a comprehensive set of actions designed to reduce overall GHG emissions in California. The BAAQMD regulates GHG emissions through the 2010 CAP. The 2010 CAP provides a comprehensive plan to improve Bay Area air quality and protect public health through implementation of a control strategy designed to reduce emissions and decrease ambient concentrations of harmful pollutants. The 2010 CAP also includes measures designed to reduce GHG emissions. In 2011, the City adopted the Envision San José 2040 General Plan (2040 General Plan). As part of the 2040 General Plan, the City adopted a Greenhouse Gas Reduction Strategy (GHG Strategy)<sup>35</sup> in accordance with the BAAQMD CEQA Guidelines and CEQA Guidelines Section 15183.5. The GHG Strategy identifies policies and measures to reduce GHG generation within the City.

With regard to impacts from GHGs, both BAAQMD and the California Air Pollution Control Officers Association (CAPCOA) consider GHG impacts to be exclusively cumulative impacts; therefore, assessment of significance is based on a determination of whether the GHG emissions from a project represent a cumulatively considerable contribution to the global atmosphere.

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<sup>35</sup> City of San Jose, 2011. Greenhouse Gas Reduction Strategy for the City of San Jose, June 2011.

Separate thresholds of significance have been established in the BAAQMD CEQA Guidelines for operational emissions from stationary sources (such as generators, furnaces, and boilers) and non-stationary sources (such as on-road vehicles). No threshold has been established for construction-related emissions, the operational emissions thresholds are applied in this analysis. The threshold for stationary sources is 10,000 metric tons of CO<sub>2</sub>e per year (i.e., emissions above this level may be considered significant). For non-stationary sources, three separate thresholds have been established:

- Compliance with a Qualified Greenhouse Gas Reduction Strategy (i.e., if a project is found to be out of compliance with a Qualified Greenhouse Gas Reduction Strategy, its GHG emissions may be considered significant); or
- 1,100 metric tons of CO<sub>2</sub>e per year (i.e., emissions above this level may be considered significant); or
- 4.6 metric tons of CO<sub>2</sub>e per service population per year (i.e., emissions above this level may be considered significant). (Service population is the sum of residents plus employees expected for a development project.)

If the project construction or operational GHG emissions would exceed these thresholds then, consistent with BAAQMD CEQA Guidelines, it would be considered to have a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact on climate change.

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Checklist Source(s)</i>
<b>7. GREENHOUSE GAS* EMISSIONS — Would the project:</b>					
a) 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"/>	1,2,5
b) 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"/>	1,2,5
* Note: GHGs include, but are not limited to, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride					

## 2.7.2 Discussion

- a) **Less than Significant Impact.** GHG emissions worldwide cumulatively contribute to the significant adverse environmental impacts of global climate change. No single project could generate sufficient GHG emissions on its own to noticeably change the global average temperature. The combination of GHG emissions from past, present, and future projects in San José, the entire state of California, across the nation and around the world, contribute cumulatively to the phenomenon of global climate change and its associated environmental impacts.

The combustion of diesel fuel to provide power for the operation of various construction equipment results in the generation of GHGs. Construction emissions that would be

associated with the proposed Project were estimated using Project-specific information such as the types and number of construction equipment used, daily usage in terms of hours per day, and total days for each piece of equipment and their horsepower rating.

Off-road construction equipment diesel fuel consumption rates for the construction year 2016 were generated for the San Francisco Bay Area Air Basin using CARB's Offroad 2011 emissions inventory database model. GHG emissions from off-road construction equipment were estimated by multiplying the total diesel fuel consumed by each piece of equipment with the CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> emission factors obtained from The Climate Registry (TCR) for diesel fuel combustion. N<sub>2</sub>O and CH<sub>4</sub> emissions were multiplied by their respective global warming potentials (i.e., 310 and 21, respectively) and added to the CO<sub>2</sub> emissions to obtain CO<sub>2</sub>e emissions.<sup>36</sup>

GHG emissions from on-road motor vehicles used during construction were estimated using EMFAC2014 emission factors. Since the EMFAC2014 model provides GHG emission factors only for CO<sub>2</sub> emissions, N<sub>2</sub>O and CH<sub>4</sub> emission factors for gasoline and diesel combustion were obtained from TCR. GHG emissions in the form of CO<sub>2</sub>e were calculated by multiplying the estimated total miles travelled by Project-related worker vehicles and trucks by the GHG emission factors, then multiplying the N<sub>2</sub>O and CH<sub>4</sub> emissions by their respective global warming potential, and then adding the CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> emissions. The Project is expected to generate an average of seven worker commute trips per day along with two material truck deliveries per day over the 14-month construction period from September 2016 to December 2017. The exact end points for the daily trips are not known at this time, so the on-road emission estimates were developed under the assumption that each worker trip would be 25 miles round trip, and each haul truck trip would be 40 miles round trip. Daily emissions by vehicle class (i.e., light-duty gasoline-fueled trucks and heavy-duty trucks) were estimated using the EMFAC2014 emission factors multiplied by the estimated Project-related vehicle trips and the estimated daily mileage traveled by the vehicles. Refer to **Appendix A** for details on the calculations and assumptions used to estimate construction GHG emissions.

Based on these estimates, the Project would generate a total of approximately 82 metric tons CO<sub>2</sub>e during construction. Upon completion of construction, the new Plant Air Compressor Building would not generate any direct emissions. The building would not be manned and plant operators would visually check the facility during regular shifts but are not expected to make routine maintenance trips to the system. Therefore, no new vehicle trips would be generated. The equipment in the building would operate using electric power and would therefore not generate any direct emissions at the Project site. As the Project would replace existing equipment that consumes electricity, any net increase in consumption of electricity by the new equipment within the building and the associated indirect GHG emissions would be negligible.

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<sup>36</sup> The Climate Registry (TCR), 2015. Emission Factors for Transport Fuels, 2015. Available at <http://www.theclimateregistry.org/wp-content/uploads/2015/04/2015-TCR-Default-EF-April-2015-FINAL.pdf>

GHG emissions generated by the Project would be well below the BAAQMD's threshold of 1,100 metric tons of CO<sub>2</sub>e per year. This impact would be less than significant.

b) **Less than Significant Impact.**

The City's GHG Strategy includes policies and measures to reduce GHG emissions. Adoption of a GHG Strategy provides environmental clearance for GHG impacts of proposed development as per the BAAQMD CEQA Guidelines and CEQA Guidelines Section 15183.5. Project evaluation in light of City requirements is provided for through an evaluation of Project conformance with the City's GHG Reduction Strategy.

In order to conform to the GHG Reduction Strategy, projects must be consistent with the Land Use/Transportation assumptions in the 2020 General Plan and incorporate applicable features into the project that meet the mandatory implementation policies. The Project would not involve changes in land uses as envisioned under the 2040 General Plan, and therefore, would be consistent with the Land Use/Transportation Diagram. Additionally, construction-related Project emissions would be limited due to its relatively limited construction intensity. Therefore, based on a review of anticipated Project emissions in comparison to the City's GHG Strategy and the BAAQMD CEQA Guidelines, the Project is expected to be consistent with the 2040 General Plan and GHG Strategy. Consequently, it would also not be considered to conflict with the State's AB 32 GHG emissions. This impact would therefore be less than significant.

## 2.8 Hazards and Hazardous Materials

### 2.8.1 Setting

#### Hazardous Materials in Soil and Groundwater

This discussion of the potential presence of hazardous materials at the Project area is based on the results of regulatory agency database searches using the California State Water Resources Control Board (SWRCB) GeoTracker database<sup>37</sup> and the California Department of Toxic Substances Control (DTSC) EnviroStor database,<sup>38</sup> and review of prior documentation completed for the Facility in support of the Master Plan EIR. The GeoTracker database includes the following hazardous materials site lists: leaking underground storage tank (LUST) cleanup sites; spills, leaks, investigation and cleanup (SLIC) sites; permitted underground storage tank (UST) facilities; land disposal sites; military cleanup sites; and other cleanup sites. The EnviroStor database includes: federal Superfund; state response; voluntary cleanup; school cleanup; and hazardous waste corrective action. The Facility was identified by the database searches. The Facility was included on hazardous material site lists by multiple regulatory agencies, including the cleanup and voluntary cleanup lists. Based on the records search and listed locations of the recorded sites, as well as a review of previously compiled information in support of the Plant Master Plan EIR, the Project site do not contain any hazardous materials sites. The San José Police Department operates a bomb disposal facility within the inactive biosolids lagoons area, located to the north of the Project area.

#### Wildfire Hazards

Based upon fire hazard mapping by the CAL FIRE Forest Resource Assessment Program<sup>39</sup> and the Santa Clara County Wildland Urban Fire Interface Map,<sup>40</sup> the Project site is not located within an area identified as a high fire hazard area.

#### Airports

The nearest airports to the Project are the Norman Y. Mineta San José International Airport, located approximately four miles south of the Project area and the Moffett Federal Airfield, located approximately five miles west of the Project area. No private airstrips occur in the Project vicinity.

<sup>37</sup> State Water Resources Control Board, GeoTracker database, available online at <http://geotracker.swrcb.ca.gov>, Accessed November 3, 2015.

<sup>38</sup> California Department of Toxic Substances (DTSC) Control EnviroStor database, <http://envirostor.dtsc.ca.gov>. Accessed November 3, 2015.

<sup>39</sup> California Department of Forestry and Fire Protection, Fire and Resource Assessment Program, Fire Hazard Severity Zones in State Responsibility Areas, Santa Clara County, California. November 7, 2007.; California Department of Forestry and Fire Protection, Fire and Resource Assessment Program, Very Fire Hazard Severity Zones in Local Responsibility Areas, Santa Clara County, California. May 2008.

<sup>40</sup> Santa Clara County Planning Office, *Santa Clara County Wildland Urban Interface Fire Area*, Adopted February 24, 2009.

## Emergency Response

The Santa Clara County Operational Area Emergency Operations Plan<sup>41</sup> establishes emergency organization, assigns tasks, specifies policies and general procedures, and provides for coordination of response in the event of an emergency. The Plan does not identify specific emergency response or evacuation routes.

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Checklist Source(s)</i>
<b>8. HAZARDS AND HAZARDOUS MATERIALS — Would the project:</b>					
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1,2
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,2
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1,2,10,11
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,2
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,2
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,2
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2

<sup>41</sup> Santa Clara County, 2008, *Santa Clara County Operational Area Emergency Operations Plan*, March 18, 2008, available online at [http://www.sccgov.org/sites/oes/Documents/EOP\\_Complete.pdf](http://www.sccgov.org/sites/oes/Documents/EOP_Complete.pdf)

## 2.8.2 Discussion

- a) **Less than Significant Impact.** Project construction could involve the routine use of small quantities of hazardous materials commonly used during construction activities such as fuels, lubricants, paints, and degreasers. Storage and use of hazardous materials at the construction site could result in the accidental release of small quantities of hazardous materials, which could degrade soil, groundwater, and surface water within the Project area.

The Project would be subject to the requirements of the San José-Santa Clara Regional Wastewater Facility and Collection Systems National Pollutant Discharge Elimination System (NPDES) permit and the San Francisco Bay Region Municipal Regional Stormwater NPDES Permit (Please refer to Section 2.9, Hydrology and Water Quality, for additional discussion of these permits). Adherence to the conditions of these permits would be required under state and federal law. Permit conditions would require implementation of best management practices (BMPs) to minimize the risk of a hazardous materials release during construction activities. The BMPs would include protection measures for the temporary on site storage of fuel and other hazardous materials used during construction, including requirements for secondary containment and berming to prevent any such release from reaching an adjacent waterway or stormwater collection system. All equipment and materials storage would need to be routinely inspected for leaks, and records maintained for documenting compliance with the storage and handling of hazardous materials. Thus, potential adverse effects related to the routine use and possible release of hazardous construction chemicals into the environment would be minimized.

Project operation would not involve the routine use of hazardous materials. There would be no impact related to the regular transport or use of hazardous materials during Project operation.

- b) **Less than Significant with Mitigation.** A number of prior releases of hazardous materials have also occurred at the existing Facility, near but not within the Project site. However, the extent of contaminated soils may not be known with certainty. Therefore, excavation anywhere within the Project site could potentially result encountering contaminated soils. As a result, the potential exists for workers to encounter hazardous materials in the soil during construction of the proposed Project facilities. Any hazardous materials encountered in excavated soil during Project construction could result in a release to the environment, which could potentially expose construction workers and plant workers to hazardous materials and chemical vapors. Depending on the nature and extent of any contamination encountered, adverse health effects and nuisance vapors could result if proper precautions are not taken. Contaminated soil could also require disposal as a hazardous waste. The Project would not affect or disturb the existing bomb disposal facility, which is located north of the Project site.

Because existing contamination could expose workers to hazardous materials, and/or could result in a reasonably foreseeable release of hazardous materials into the environment, this impact is considered potentially significant. **(IMPACT HAZ-1)**

**Mitigation Measures:** Implementation of the following mitigation measures would reduce this impact to a less than significant level by requiring pre-construction assessment of hazardous materials, preparation of a Health and Safety Plan, and preparation of a Soil and Groundwater Management Plan to ensure appropriate management of soil and groundwater encountered during construction.

**Mitigation Measure HAZ-1a: Pre-Construction Hazardous Materials Assessment.**

Prior to construction, ESD or its contractor shall ensure that a limited soil and/or groundwater investigation is performed at proposed construction work areas to characterize soil and/or groundwater quality. ESD or its contractor shall conduct a site assessment including potential testing of soil and/or groundwater, and if testing reveals soil and/or groundwater concentrations that exceed applicable regulatory screening levels, the City shall contact the Santa Clara County Department of Environmental Health (SCCDEH) or Regional Water Quality Control Board (RWQCB), as appropriate, to secure regulatory oversight and the PBCE Senior Environmental Planner shall be notified.

The Health and Safety Plan (HASP), prepared in accordance with Mitigation Measure HAZ-1b, will establish the sampling and laboratory analysis program which may include the following: analysis of subsurface soil samples within the Project site for total petroleum hydrocarbons (as gasoline, diesel, and waste oil), Title 22 metals, and volatile organic compounds (VOCs) or any other chemicals of concern to evaluate the potential presence of contamination; groundwater samples if subsurface excavations are anticipated to require dewatering; and additional analyses for VOCs and semi-volatile organic compounds (SVOCs) for groundwater samples collected at construction locations within 1,000 feet of adjacent landfills.

The results of the pre-construction hazardous materials assessment shall be incorporated into the Site Health and Safety Plan prepared in accordance with Mitigation Measure HAZ-1b and the Soil and Groundwater Management Plan prepared in accordance with Mitigation Measure HAZ-1c to determine whether: specific soil and groundwater management and disposal procedures for contaminated materials are required; excavated soils are suitable for reuse; and construction worker health and safety procedures for working with contaminated materials are required. If the pre-construction hazardous materials assessment identifies the presence of soil and/or groundwater contamination at concentrations in excess of applicable regulatory screening levels (Environmental Screening Levels [ESLs] or California human health screening levels [CHHSLs]) for proposed site use, ESD or its contractor shall complete site assessment and remedial activities required by the regulatory agency to ensure that residual soil and/or groundwater contamination, if any, shall not pose a continuing significant threat to groundwater resources, human health, or the environment. A copy of the pre-construction hazardous materials assessment shall be submitted to the PBCE Senior Environmental Planner for approval.

**Mitigation Measure HAZ-1b: Health and Safety Plan.**

ESD or its contractor shall retain a qualified environmental professional to prepare a site-specific Health and Safety Plan (HASP) in accordance with federal OSHA regulations (29 CFR 1910.120) and Cal/OSHA regulations (8 CCR Title 8, Section 5192). Because anticipated contaminants vary depending upon the location of proposed improvements in the Project area and may vary over time, the HASP shall address site-specific worker health and safety issues during construction. The HASP shall include the following information.

- Results of sampling conducted in accordance with Mitigation Measure HAZ-1a.
- All required measures to protect construction workers and the general public by including engineering controls, monitoring, and security measures to prevent unauthorized entry to the construction areas and to reduce hazards outside of the construction areas. If prescribed contaminant exposure levels are exceeded, personal protective equipment shall be required for workers in accordance with state and federal regulations.
- Required worker health and safety provisions for all workers potentially exposed to contaminated materials, in accordance with state and federal worker safety regulations, and designated qualified individual personnel responsible for implementation of the HASP.
- The contractor shall have a site health and safety supervisor fully trained pursuant to hazardous materials regulations be present during excavation, trenching, or cut and fill operations to monitor for evidence of potential soil contamination, including soil staining, noxious odors, debris or buried storage containers. The site health and safety supervisor must be capable of evaluating whether hazardous materials encountered constitute an incidental release of a hazardous substance or an emergency spill. The site health and safety supervisor shall implement procedures to be followed in the event of an unanticipated hazardous materials release that may impact health and safety. These procedures shall be in accordance with hazardous waste operations and regulations and specifically include, but are not limited to, the following: immediately stopping work in the vicinity of the unknown hazardous materials release; notifying SCCDEH and retaining a qualified environmental firm to perform sampling, remediation, and/or disposal.
- Documentation that HASP measures have been implemented during construction.
- Provision that submittal of the HASP to ESD, or any review of the contractor's HASP ESD, shall not be construed as approval of the adequacy of the contractor as a health and safety professional, the contractor's HASP, or any safety measure taken in or near the construction site. The contractor shall be solely and fully responsible for compliance with all laws, rules, and regulations applicable to health and safety during the performance of the construction work.

A copy of the HASP shall be submitted to the PBCE Senior Environmental Planner for approval.

### **Mitigation Measure HAZ-1c: Soil and Groundwater Management Plan.**

If ground-borne hazardous materials are identified under the pre-Construction hazardous materials assessment, done in accordance with Mitigation Measure HAZ-1a, ESD shall require the construction contractor to prepare and implement a Soil and Groundwater Management Plan, subject to review by the PBCE Senior Environmental Planner, that specifies the method for handling and disposal of contaminated soil and groundwater prior to construction. The plan shall include all necessary procedures to ensure that excavated materials and fluids generated during construction are stored, managed, and disposed of in a manner that is protective of human health and in accordance with applicable laws and regulations. The plan shall include the following information.

- Step-by-step procedures for evaluation, handling, stockpiling, storage, testing, and disposal of excavated material, including criteria for reuse and offsite disposal. All excavated materials shall be inspected prior to initial stockpiling, and spoils that are visibly stained and/or have a noticeable odor shall be stockpiled separately to minimize the amount of material that may require special handling. In addition, excavated materials shall be inspected for buried building materials, debris, and evidence of underground storage tanks; if identified, these materials shall be stockpiled separately and characterized in accordance with landfill disposal requirements. If some of the spoils do not meet the reuse criteria and/or debris is identified, these materials shall be disposed of at a permitted landfill facility.
  - Procedures to be implemented if unknown subsurface conditions or contamination are encountered, such as previously unreported tanks, wells, or contaminated soils.
  - Procedures for containment, handling and disposal of groundwater generated from construction dewatering, the method to be used to analyze groundwater for hazardous materials likely to be encountered and the appropriate treatment and/or disposal methods.
- c) **No Impact.** There are no schools within 0.25-miles of the Project area; therefore, there would be no impact related to this criterion.
- d) **Less than Significant Impact with Mitigation.** While the Project site itself is not listed on a regulatory agency list of hazardous materials sites, it is possible that contaminated soil or groundwater could occur due to adjacent hazardous materials site listings. As discussed above under criterion b, contaminated soil or groundwater could be encountered during excavation and grading for Project construction, potentially exposing construction workers, the public, and/or the environment to hazardous materials. This impact is considered potentially significant. **(IMPACT HAZ-2)**

**Mitigation Measures HAZ-2:** ESD or its contractor shall implement the following mitigation measures as described above:

- MM HAZ-1a: Pre-Construction Hazardous Materials Assessment,

- MM HAZ-1b: Health and Safety Plan,
- MM HAZ- HAZ-1c: Soil and Groundwater Management Plan

By adhering to applicable hazardous materials regulations, and with implementation of **Mitigation Measures HAZ-1a** through **HAZ-1c**, the potential impact of Project siting on a known hazardous waste site would be less than significant.

- e) **No Impact.** The nearest airports to the Project is the Norman Y. Mineta San José International Airport, located approximately four miles south of the Project site and the Moffett Federal Airfield, located approximately five miles west of the Project site. Because the Project site is more than two miles from an airport, and because implementation of the Project would not involve the construction greater than two stories and would not interfere with air traffic, there would be no impact related to safety hazards in the vicinity of an airport.
- f) **No Impact.** Similarly, there are no private airstrips within two miles of the Project area; therefore, there would be no impact related to this criterion.
- g) **No Impact.** Santa Clara County does not have an adopted emergency response plan or emergency evacuation plan that designates specific emergency response or evacuation routes within the Project area; therefore, no impact would occur.
- h) **Less than Significant Impact.** The Project site is not within a high fire hazard area and, in the unlikely event of a fire, the potential to expose people or structures to a significant risk involving fires is low. The use of construction equipment and the possible temporary on site storage of fuels and/or other flammable construction chemicals could pose an increased fire risk resulting in injury to workers or the public during construction. In the event that a fire were to spread to the existing bomb disposal facility located north of the Project site, a hazardous condition could occur. However, contractors would be required to comply with hazardous materials storage and fire protection regulations, which would minimize potential for fire creation, and ensure that the risk of hazards related to fires during construction would be less than significant.

Compliance with existing safety regulations and widely-accepted industry standards would minimize the hazard to the public and the environment. The local fire agency would be responsible for enforcing the provisions of the fire code. Furthermore, the Project site is not within a high fire hazard area and, in the unlikely event of a fire, the potential to expose people or structures to a significant risk is low. Therefore, this impact would be less than significant.

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## 2.9 Hydrology and Water Quality

### 2.9.1 Setting

#### Environmental Setting

The San Francisco Bay Area, including the Project site, experiences a Mediterranean climate characterized by mild, wet winters and dry, warm summers. The South Bay typically receives about 90 percent of its precipitation in the fall and winter months, with the greatest average rainfall occurring in January. The average annual rainfall in the counties surrounding the South Bay is approximately 20 inches, although the actual rainfall can be highly variable due to annual or longer-duration large-scale deviations in ocean and atmospheric temperature (El Niño and La Niña) and the influence of local topography.

The nearest surface waters to the Project site include Coyote Creek and Guadalupe River, as well as sloughs, marshes, and ponds associated with the southern margin of the Bay. Stormwater drainage within the Facility operational area is provided by existing infrastructure, which collects stormwater and routes it into the existing headworks of the Facility for treatment.

As shown in **Figure 2.9-1**, the Project would be located entirely within a 100-year flood zone, defined by the Federal Emergency Management Agency (FEMA) as an area having a one percent annual chance of occurrence for flooding.

The Project overlies the groundwater aquifer of the Santa Clara Valley Groundwater Basin. The aquifer is generally characterized by alternating layers of impermeable Bay mud and permeable alluvial sand and gravel deposits. Groundwater in the Basin is generally recharged in upland areas and flows toward the Bay. A geotechnical investigation conducted for the Project site located groundwater ranging from 13 to 19 feet below ground surface, corresponding to 3 to -2 feet (NAVD 88).<sup>42</sup>

#### Regulatory Setting

##### *National Pollutant Discharge Elimination System Permit for the San José-Santa Clara Regional Wastewater Facility and Collection Systems*

Discharges of treated water from the Facility are regulated pursuant to National Pollutant Discharge Elimination System (NPDES) permit No. CA0037842 (Order No. R2-2014-0034). The Facility provides primary, secondary and tertiary treatment of wastewater from San José and Santa Clara, followed by filtration and disinfection of the water prior to discharge into Artesian Slough. This individual permit identifies limitations on the levels of pollutants present in Facility effluent and requires that the Facility comply with these effluent limitations pursuant to state and federal law.

<sup>42</sup> AECOM, 2015. Draft Memorandum: Geotechnical Investigation and Recommendations, Plant Air Compressor Building, San Jose/Santa Clara Regional Wastewater Facility (RWF). September 22.

### ***Municipal Stormwater NPDES Permit***

The City of San José is required to operate under a Municipal Stormwater NPDES Permit (NPDES Permit No. CAS612008) to discharge stormwater from the City's storm drain system to surface waters. On October 14, 2009, the San Francisco Bay Regional Water Quality Control Board adopted the San Francisco Bay Region Municipal Regional Stormwater NPDES Permit (MRP) for 76 Bay Area municipalities, including the City of San José.

The Municipal Regional Permit mandates the City of San José use its planning and development review authority to require that stormwater management measures such as Site Design, Pollutant Source Control and Treatment measures are included in new and redevelopment projects to minimize and properly treat stormwater runoff.

Provision C.3 of the MRP regulates the following types of development projects:

- Projects that create or replace 10,000 square feet or more of impervious surface.
- Special Land Use Categories that create or replace 5,000 square feet or more of impervious surface.

The Municipal Regional Permit also requires regulated projects to include measures to control hydromodification impacts where the project would otherwise cause increased erosion, silt pollutant generation, or other adverse impacts to local rivers and creeks. Development projects that create and/or replace 1 acre or more of impervious surface and are located in a subwatershed or catchment that is less than 65 percent impervious, must manage increases in runoff flow and volume so that post-project runoff shall not exceed estimated pre-project rates and durations.

### ***City of San José Municipal Code***

All development projects within the City of San José that disturb less than one acre of land surface must conform with the City of San José NPDES storm water permit and are required to include BMPs as specified in the Blueprint for a Clean Bay to control the discharge of storm water pollutants including sediments associated with construction activities.<sup>43</sup>

BMPs identified in the Blueprint for a Clean Bay include practices that limit the entry of pollutants from construction sites into stormwater. The recommended practices apply to construction activities such as material storage and spills, earthwork, pavement construction, equipment maintenance, concrete, and waste disposal.

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<sup>43</sup> San Jose Municipal Code, Section 20.100.470.



SOURCE: FEMA; ESRI, 2013

San José/Santa Clara Regional Wastewater Plant Instrument Air System Upgrade IS/MND . 131002.16

**Figure 2.9-1**  
FEMA Flood Zones

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<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Checklist Source(s)</i>
<b>9. HYDROLOGY AND WATER QUALITY — Would the project:</b>					
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
c) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, in a manner that would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
d) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,2,12
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2,12
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2

## 2.9.2 Discussion

a, c, f) **Less than Significant Impact.** Construction of the proposed Project would involve the use of heavy construction machinery on site, including for the grading or leveling of soils, excavation, installation of Project components, and decommissioning/removal of existing equipment as relevant. These activities could result in potential for the accidental release of sediment and construction-related water quality pollutants from the Project area. For

example, during storms, surface soils and sediment loosened during the construction process could become entrained in stormwater, resulting in erosion on site, increases in sediment loading off site, and potential for sedimentation downstream. Other construction-related water quality pollutants could also become entrained in stormwater, including pollutants associated with heavy construction equipment such as oils, greases, fuels, antifreeze, and other lubricants, as well as other construction related pollutants such as cement wash-out or construction related debris. If entrained in stormwater, these pollutants could be carried off site and affect downstream waters.

Potential water quality pollution during the Project's operation could occur as a result of stormwater runoff from impervious surfaces. These pollutants could become entrained in stormwater and could thereby be released from the Project area, degrading water quality downstream.

Potential construction and operation period water quality degradation would, however, be avoided via existing and proposed stormwater drainage design and treatment, and via adherence to applicable permit conditions. With respect to drainage design and treatment, under existing conditions, stormwater runoff within and around the Project site located in the operational area is collected and routed into the Facility headworks for subsequent treatment within that facility's wastewater treatment process. Water quality pollutants from these areas would be minimized through the Facility's treatment process (as required by the Facility's NPDES permit).

With respect to applicable permit conditions, the maximum ground disturbance for the Project totals approximately 23,000 square feet, which is less than one acre. The Project would therefore be required to comply with the San José Municipal code requirements, which in part are based on the requirements of the San Francisco Bay Region Municipal Regional Stormwater NPDES Permit. This permit would require the implementation of construction period BMPs designed to reduce and minimize construction related stormwater pollution, construction and operation period water quality monitoring for all discharges, and implementation of various industrial site controls designed to minimize and reduce the emission of polluted stormwater from the Project area. The City would be bound to comply with these requirements under state law, and adherence to these requirements during project construction and operation would ensure that potential impacts to water quality would be minimized.

- b) **Less than Significant Impact.** The Project would involve construction of new impervious surfaces. Impervious surfaces prevent the infiltration of groundwater into the subsurface. Groundwater was encountered at depths of 13 to 19 feet below ground surface. While it is anticipated that construction excavations would not reach these depths, groundwater removal could be required during rainy seasons as surface runoff could collect in excavations. However, given limited extent of new impervious surfaces proposed under the Project, and the low likelihood of groundwater pumping during excavation, implementation of the Project is not anticipated to noticeably reduce groundwater recharge. Therefore,

groundwater levels would not be noticeably affected by the Project and the impact of the Project on groundwater levels would be less than significant.

- d, e) **Less than Significant.** The Project would result in the installation of new impervious surfaces on site. Impervious surfaces would be associated with the proposed building and parking area. Impervious surfaces prevent the infiltration of stormwater into the subsurface. As a result, during a storm event, impervious surfaces can result in a net increase in the volume of water discharged from a site, and can also result in an increase in the peak discharge rate of water from the site. However, as noted for checklist items a, c, and f, all stormwater drainage from the Project area would be routed into the Facility's existing headworks for treatment. Potential increases in stormwater volume due to Project implementation would be relatively limited due to the limited area of new impervious surfaces that would be installed. Any anticipated increases in stormwater generated on the sites could be managed within the Facility's available capacity. Therefore, impacts would be less than significant.
- g) **No Impact.** The Project would not involve the construction of any housing. Therefore, no impact would occur.
- h) **Less than Significant Impact.** As shown on Figure 2.9-1, the Project would be located entirely within a FEMA-defined 100-year flood zone. While the Project would raise the elevation of the air compressors above the 100-year flood surface, due to the state of the levees between the San Francisco Bay and the Project site the entire area is shown as within the FEMA 100-year flood zone. Flooding would be associated with run-up from the south San Francisco Bay. The Project would result in the installation of new facilities, which could, on a very localized basis, alter flood flows during a major flood event. However, as shown on Figure 2.9-1, the 100-year floodplain is wide and expansive in the vicinity of the Project. Therefore, because the Project would have a limited extent (less than one acre) with only select facilities having potential to displace flood flows, displacement of flood waters would be negligible.
- i) **Less than Significant Impact.** There are no dams or levees within the Project vicinity. The Project would involve installation of an air compressor building and parking lot within the Project area. The Project would not include any construction or other procedures on, adjacent to, or within a levee, dam, or other flood control feature, and therefore would not directly affect such facilities. Additionally, Project operations would not interfere with levees or dams or cause potential failure of such facilities. Finally, the Project would temporarily require additional construction workers to be on site, in an area that is not protected from 100-year flooding. However, due to the nature of flooding in the area (associated with Bay run-up), sufficient notice prior to a potential flooding event would be available to permit evacuation, and minimize exposure of people to risk of flooding.
- j) **Less than Significant Impact.** The Project is not located immediately adjacent to an enclosed water body, such that it could be affected by seiche. Additionally, the Project is not located in an area that is considered susceptible to mudflows, such as downstream of high relief areas

denuded of vegetation, or near potential volcanic activity. The Project site is located in a lowlands area adjacent to south San Francisco Bay, and could theoretically be subject to tsunami related hazards. Because the characteristic seiche periods of the Bay are significantly longer than surface wave periods for waves caused by earthquakes, earthquake-caused local tsunamis are not considered to pose a hazard to the Facility or the Project area.<sup>44</sup> When a suite of tsunami events, including local tsunamis and teletsunamis (tsunamis originating from distant points in the Pacific Ocean), were modeled in support of the Plant Master Plan EIR,<sup>45</sup> the combined upper bound of tsunami inundation at mean high water was at the northeast corner of Pond A18, located north of the Project site along the margin of the south San Francisco Bay.<sup>46</sup> No inundation was shown within the Project site. This was due to dampening effects Bay geography as an incoming tsunami passed through the Golden Gate and dissipated across the central and south portions of the Bay. Therefore, tsunamis would not affect the Project site.

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<sup>44</sup> Borrero, J.C., Dengler, L., Uslu, B., and Synolakis, C., *Numerical Modeling of Tsunami Effects at Marine Oil Terminals in San Francisco Bay*, Marine Facilities Division of The California State Lands Commission, 2006.

<sup>45</sup> ESA | Jones and Stokes, 2013. San José/Santa Clara Water Pollution Control Plant Master Plan Environmental Impact Report; State Clearinghouse No. 2011052074; City of San José File Number PP11-403. November 19, 2013.

<sup>46</sup> California Emergency Management Agency, California Geological Survey, and University of Southern California, 2009, Tsunami Inundation Map for Emergency Planning. Milpitas Quadrangle. July 31.

## 2.10 Land Use and Land Use Planning

### 2.10.1 Setting

With respect to the designations, the Project site is designated in the Envision San José 2040 General Plan as *Public/Quasi-Public*, a category that is typically used to designate public land uses such as water treatment facilities and the bufferlands. The Project site is zoned as *Heavy Industrial*.

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Checklist Source(s)</i>
<b>10. LAND USE AND LAND USE PLANNING — Would the project:</b>					
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,2
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,13
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,6

### 2.10.2 Discussion

- a) **No Impact.** The Project would include installation of additional industrial facilities within the Facility operational areas. The Project would not include any construction within or near an established community, and therefore would not physically divide or interfere with any established community. No impact would occur.
- b) **No Impact.** The Project would be entirely located within the Facility operational area. The proposed Project, including all proposed facilities and operations, would be consistent with existing zoning and land use designations applicable to the Project area. No impact would occur.
- c) **No Impact.** The Project area is situated outside of the SCVHP study area, and therefore the Project is not a covered activity under the SCVHP. However, the Project is within the Expanded Study Area for Burrowing Owl Conservation, as defined in the SCVHP, wherein the burrowing owl is a covered species under the SCVHP. Although the Project is located within the SCVHP Expanded Study Area for Burrowing Owl Conservation, the Project would not result in impacts to burrowing owl nesting or foraging habitat. Therefore, the project would not conflict with the SCVHP and no impact would occur.

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## 2.11 Mineral Resources

### 2.11.1 Setting

The Project area is not within an aggregate resource area, and is mapped by the California Division of Mines and Geology being within Mineral Resource Zone 1.<sup>47</sup> Mineral Resource Zone 1 identifies areas where adequate information exists to determine that no significant aggregate resources are present. Both published geologic maps and borings collected for previous geotechnical investigations in the Project vicinity confirm that subsurface materials are generally too fine-grained to be suitable as aggregate. Additionally, according to the USGS Mineral Resources Data System, there are no known mineral occurrences, prospects, or past or present mineral producers within or immediately adjacent to the Project area.<sup>48</sup>

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Checklist Source(s)</i>
<b>11. MINERAL RESOURCES — Would the project:</b>					
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,13

### 2.11.2 Discussion

a, b) **No Impact.** As noted above, no known mineral resources of importance to the state or region are located on the Project site. Additionally, no locally important mineral resource recovery sites are delineated for the Project area, including in a general plan or other land use plan. Therefore, the Project would not result in the loss of availability of mineral resources, or otherwise interfere with the extraction of existing mineral resources. No impact would occur.

<sup>47</sup> California Division of Mines and Geology. Update of Mineral Land Classification: Aggregate Materials in the South San Francisco Bay Production-Consumption Region. DMG Open File Report 96-03, 1996.

<sup>48</sup> U.S. Geologic Survey, *Mineral Resources Data System (MRDS), Mineral Resources On-Line Spatial Data*, available <http://mrddata.usgs.gov/mineral-resources/mrds-us.html>. Accessed October 13, 2015.

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## 2.12 Noise

Noise may be defined as unwanted sound. The objectionable nature of a particular sound could be caused by its pitch or its loudness. Pitch is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. Loudness is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In determining the daily level of environmental noise, it is important to account for the difference in response of people to daytime and nighttime noises. During the nighttime, exterior background noises are generally lower than the daytime levels. Most people sleep at night and are very sensitive to noise intrusion. To account for human sensitivity to nighttime noise levels, a descriptor, DNL (day/night average sound level), was developed. The DNL divides the 24-hour day into the daytime of 7:00 AM to 10:00 PM and the nighttime of 10:00 PM to 7:00 AM. The nighttime noise level is weighted 10 decibels (dB) higher than the daytime noise level. The equivalent sound level ( $L_{eq}$ ) represents an average of the sound energy occurring over a specified time period. In effect, the  $L_{eq}$  is the steady-state sound level containing the same acoustical energy as the time-varying sound that actually occurs during the same period. The maximum sound level ( $L_{max}$ ) is the highest instantaneous sound level measured during a specified period.

### 2.12.1 Setting

There are no noise sensitive receptors (e.g., residences, schools) in the immediate vicinity of the Project site. The closest sensitive receptor is a church at the Jubilee Christian Center (including a church and a children's center/youth center) that is approximately 0.9 miles (approximately 5,000 feet) southwest of the Project site. The closest residences are located in the Alviso Village neighborhood, which is approximately one mile (5,600 feet) west of the Project site. The closest commercial facility is to the southwest, approximately 0.8 miles (4,200 feet) from the Project site. George Mayne Elementary School is located approximately 1.25 miles (6,500 feet) southwest of the Project site.

Ambient noise levels were recently measured in the Alviso Village neighborhood during a long-term (72-hour) survey that was completed from May 15 through May 18, 2012 for the Plant Master Plan EIR.<sup>49</sup> The noise measurements conducted during the survey represent the ambient noise environments at the closest noise-sensitive uses to the Project site. **Table 2.12-1** presents a summary of the ambient average noise measurement results. As shown in the table, the daytime  $L_{eq}$  averaged 58 dB, the nighttime  $L_{eq}$  averaged 51 dB, and the DNL averaged 59 dB, during the 72-hour survey period.

<sup>49</sup> San José/Santa Clara Water Pollution Control Plant Master Plan Environmental Impact Report; State Clearinghouse No. 2011052074; City of San José File Number PP11-403. November 19, 2013.

**TABLE 2.12-1  
SUMMARY OF AMBIENT NOISE LEVEL MEASUREMENT RESULTS**

Description of Measurement Site	Average Noise Level (Range), dB		
	Daytime L <sub>eq</sub> (7 a.m.-10 p.m.)	Nighttime L <sub>eq</sub> (10 p.m.-7 a.m.)	DNL
Alviso Village Residential area at the intersection of Wabash Street & Spreckles Avenue	58 (50-66)	51 (43-60)	59 (57-61)

NOTE: The long-term measurement was collected May 15 through 18, 2012.

SOURCE: San José/Santa Clara Water Pollution Control Plant Master Plan Environmental Impact Report; State Clearinghouse No. 2011052074; City of San José File Number PP11-403. November 19, 2013.

## Applicable Noise Standards and Policies

The City's 2040 General Plan includes policies applicable to all development projects in San José. The City's noise and land use compatibility guidelines are shown in **Table 2.12-2**, below. The land use compatibility guidelines state that the City's normally acceptable exterior noise level is 60 dBA<sup>50</sup> DNL or less for residential and most institutional land uses. The acceptable interior noise level is 45 dBA DNL.

## Significance Thresholds

The following General Plan policies establish the thresholds to be used in the determination of the significance of environmental impacts related to noise and vibration.

1. **Policy EC-1.2:** Minimize the noise impacts of new development on land uses sensitive to increased noise levels [Categories 1, 2, 3 and 6] by limiting noise generation and by requiring use of noise attenuation measures such as acoustical enclosures and sound barriers, where feasible. The City considers significant noise impacts to occur if a project would:
  - a. Cause the DNL at noise sensitive receptors to increase by five dB DNL or more where the noise levels would remain "Normally Acceptable"; or
  - b. Cause the DNL at noise sensitive receptors to increase by three dB DNL or more where noise levels would equal or exceed the "Normally Acceptable" level.
2. **Policy EC-1.3:** Mitigate noise generation of new nonresidential land uses to 55 dB DNL at the property line when located adjacent to existing or planned noise sensitive residential and public/quasi-public land uses.
3. **Policy EC-2.3:** Require new development to minimize vibration impacts to adjacent uses during demolition and construction. A vibration limit of 0.20 in/sec peak particle velocity (PPV) will be used to minimize the potential for cosmetic damage at buildings of normal conventional construction.

<sup>50</sup> The perceived loudness of sounds is dependent on many factors, including SPL and frequency content. However, within the usual range of environmental sound levels, perception of loudness is relatively predictable, and can be approximated by frequency filtering using the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard descriptor for environmental noise assessment. All noise levels reported in this section are in terms of A-weighting.

**TABLE 2.12-2  
PROPOSED GENERAL PLAN LAND USE COMPATIBILITY GUIDELINES (GP TABLE EC-1)**

Land Use Category	Exterior DNL Value in Decibels					
	55	60	65	70	75	80
Residential, Hotels and Motels, Hospitals and Residential Care <sup>1</sup>		■	■	■	■	■
Outdoor Sports and Recreation, Neighborhood Parks and Playgrounds		■	■	■	■	■
Schools, Libraries, Museums, Meeting Halls, and Churches		■	■	■	■	■
Office Buildings, Business Commercial, and Professional Offices				■	■	■
Sports Arena, Outdoor Spectator Sports				■	■	■
Public and Quasi-Public Auditoriums, Concert Halls, and Amphitheaters	■	■	■	■	■	■

<sup>1</sup> Noise mitigation to reduce interior noise levels pursuant to Policy EC-1.1 is required.

- Normally Acceptable:**  
 Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
- Conditionally Acceptable:**  
 Specified land use may be permitted only after detailed analysis of the noise reduction requirements and noise mitigation features included in the design.
- Unacceptable:**  
 New construction or development should generally not be undertaken because mitigation is usually not feasible to comply with noise element policies. Development will only be considered when technically feasible mitigation is identified that is also compatible with relevant design guidelines.

In addition to the above General Plan policies, the Project would be subject to the following code and ordinance:

- **San José Municipal Code §20.100.450:** Limits construction hours within 500 feet of residences to 7:00 AM – 7:00 PM weekdays, with no construction on weekends or holidays; and
- **City of San José Zoning Ordinance:** The City Zoning Ordinance applies specific noise standards to Residential Zoning Districts, which limits the sound pressure levels generated by any use or combination of uses at any property line to a maximum noise level of 55 dB.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact	Checklist Source(s)
<b>12. NOISE — Would the project:</b>					
a) Result in exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2,13
b) Result in exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Checklist Source(s)</i>
d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
e) For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,2
f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,2

## 2.12.2 Discussion

- a) **Less than Significant Impact.** Based on the following, construction and operation of the Project would not expose persons to noise levels in excess of regulatory standards, codes, or ordinances. Therefore, the associated impact would be less than significant.

### Construction

Construction is a temporary source of noise that can impact residences and businesses near construction sites. Construction noise can be considerable for short periods of time at any particular location and typically generates the highest noise levels during grading and excavation. However, there are no residential or commercial uses within 500 feet or 200 feet of the Project site, respectively. The closest existing residential and commercial uses are approximately 5,660 and 4,200 feet from the Project construction locations, respectively. Worst-case Project construction noise exposure at the closest existing residences and commercial uses would not be expected to exceed 43 dB  $L_{max}$  and 49 dB  $L_{max}$ , respectively, from noise sources in the vicinity of the Project construction sites. This is based on a conservative assumption that construction equipment would result in a noise production of up to 90 dB  $L_{max}$  at 50 feet<sup>51</sup> and assumes a noise level reduction of 7.5 dB for every doubling of distance due to attenuation associated with soft ground surfaces. Estimated short-term construction noise exposure associated with the Project would not be expected to exceed any of the City's significance thresholds. Therefore, the closest existing noise-sensitive uses to the Project site would not be significantly impacted by Project construction-related noise.

### Operation

Routine operation of the Project would result in noise associated with periodic truck traffic during regular shifts but routine maintenance trips would not be made to the building. The truck traffic would be consistent with current operations at the Facility site and would not be expected to increase noise levels above current conditions. The new compressors would have a

<sup>51</sup> Federal Transit Administration. 2006. Transit Noise and Vibration Impact Assessment. FTA Report FTAVA-90-1003-06. Washington, D.C. May 2006.

- max sound level of 74 dBA at one meter. Operation of the compressor at the facilities would occur within the building enclosure. The operation of the proposed compressor would not significantly increase average noise levels at the sites because they would be located within the building which would shield the noise. In addition the Facility has existing noise generating facilities (i.e., pumps) already in operation within the vicinity of the proposed building. The compressor noise would be consistent with current operations at the Facility site and would not be expected to increase noise levels above current conditions. Therefore, operation of the Project would not exceed any of the City's significance thresholds, and the associated impact would be less than significant.
- b) **Less than Significant Impact.** Vibration produced during construction of the Project could produce maximum vibration levels of 0.21 in/sec PPV at a distance of 25 feet.<sup>52</sup> Since construction equipment would be well over 2,000 feet from acoustically sensitive uses, construction-related vibration levels at these uses would not be perceivable, and would well below the 0.20 in/sec PPV impact criterion. Therefore, this impact is considered less than significant.
- c) **Less than Significant Impact.** As described under question a) above, Project-related normal operations would not result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project. The impact would be less than significant.
- d) **Less than Significant Impact.** As described under question a) above, Project-related construction activities would result in worst-case temporary noise levels at the closest existing residences and commercial uses that would not exceed 43 dB L<sub>max</sub> and 49 dB L<sub>max</sub>, respectively. Daytime L<sub>eq</sub> noise levels in the Project area have been measured to be as low as 50 dB (see Table 2.12-1). Therefore, the Project would not result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project. The impact would be less than significant.
- e) **No Impact.** The Project would not be significantly impacted by aircraft operations from nearby Norman Y. Mineta San José International Airport or Moffett Field. Norman Y. Mineta San José International Airport and Moffett Field are located approximately four miles south and five miles west of the Project area, respectively. Since the Project is more than two miles from a public use airport and proposes no uses that would be affected by local aircraft operations, the Project would not be significantly impacted by aircraft noise. There would be no impact.
- f) **No Impact.** There are no known private airstrips in the Project vicinity. Since the Project is not in the vicinity of a private airstrip and proposes no uses that would be substantially affected by local aircraft operations, the Project would not be affected by aircraft noise. There would be no impact.

<sup>52</sup> Federal Transit Administration. 2006. Transit Noise and Vibration Impact Assessment. FTA Report FTAVA-90-1003-06. Washington, D.C. May 2006.

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## 2.13 Population and Housing

### 2.13.1 Setting

The City of San José had an estimated population of 1,016,479 in January 2015.<sup>53</sup> According to the Envision San José 2040 General Plan EIR, the projected population is approximately 1.3 million persons by 2035.

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Checklist Source(s)</i>
<b>13. POPULATION AND HOUSING — Would the project:</b>					
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,13
b) Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1

### 2.13.2 Discussion

- a) **No Impact.** The Project would not involve or result in major new housing, business, or industrial developments that could drive population growth. The Project would involve constructing a new building to house three air compressors, one wet air receiver tank, two refrigerator air dryers, and associated electrical panels in order to support ongoing operation of the existing Facility. As noted in the Project Description, the Project would not support or contribute to expansion of the Facility, but would serve the purpose of moving equipment out of the 100-year floodplain and providing power redundancy in the case of emergency. Therefore, the Project would not lift an existing indirect impediment to growth, such as by increasing available capacity at a wastewater treatment plant. No impact would occur.
- b) **No Impact.** The Project would involve construction and use of industrial facilities at an existing industrial site. It would not result in the demolition of existing housing, or otherwise cause a reduction in housing units on site or elsewhere. Therefore, no impact would occur.
- c) **No Impact.** The Project would involve construction and use of industrial facilities at an existing industrial site. There is no existing housing located on site, and no persons would be displaced as a result of Project implementation. Therefore, no impact would occur.

<sup>53</sup> State of California, Department of Finance, E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change — January 1, 2014 and 2015. Sacramento, California, May 2015. <<http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/view.php>> Accessed November 2, 2015.

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## 2.14 Public Services

### 2.14.1 Setting

Fire protection services for the City are provided by the San José Fire Department (SJFD). The SJFD currently consists of 33 active stations serving an area of 206 square miles and over one million residents.<sup>54</sup> The SJFD responds to all fires, hazardous materials spills, and medical emergencies (including injury accidents) in the City, including at the Facility and Project site. The closest fire station to the Facility is Station 25 located at 5125 Wilson Way in Alviso, approximately one mile west of the Facility. Police services for the City of San José are provided by the San José Police Department (SJPD).

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Checklist Source(s)</i>
<b>14. PUBLIC SERVICES — Would the project:</b>					
a) Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:					
i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1

### 2.14.2 Discussion

- a.i) **Less than Significant Impact.** The Project would involve include construction and operation of a new air instrument building. In the event of a fire within the Project area, including a fuel fire, fire response would be provided by SJFD. SJFD maintains two hazardous incident teams, a rescue medic, and a foam unit, as well as other standard facilities and equipment. These existing resources are anticipated to be sufficient to manage potential fire incidents on site. Therefore, the Project would not deleteriously affect fire department response times, and would not require additional facilities or equipment.
- a.ii-v) **No Impact.** The Project would involve construction and operation of components needed in support of the existing wastewater treatment operations at the Facility. These proposed facilities would not require additional police protection or response, need for schools, demand for parks, or need for other public facilities, such that new or physically altered public facilities would be needed. Additionally, the Project would not create demand for police services such that response times would be altered.

<sup>54</sup> City of San Jose Fire Department website: Available at: <http://www.sanjoseca.gov/index.aspx?NID=197> Accessed December 7, 2015.

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## 2.15 Recreation

### 2.15.1 Setting

There are no existing recreational facilities in the immediate vicinity of the Project site. The closest park to the Project site is Alviso Park, located approximately one mile (5,600 feet) to the west.

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Checklist Source(s)</i>
<b>15. RECREATION — Would the project:</b>					
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,2
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1

### 2.15.2 Discussion

- a,b) **No Impact.** The Project would involve the construction and operation of a new air instrument building to support the existing Facility operations. The Project would install new industrial facilities within an existing industrial area, in proximity to other similar facilities. The Project would not result in new housing development or other activities that would increase use, alter usage patterns, or increase demand for existing recreational facilities, thereby causing increased physical deterioration of recreation related facilities or demand for new facilities. Therefore, no impact would occur.

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## 2.16 Transportation and Traffic

### 2.16.1 Setting

The Project area is generally bounded by the San Francisco Bay to the north, Interstate 880 (I-880) to the east, State Route 237 (SR-237) to the south, and the community of Alviso to the west. Because the Project area is at the northern border of San José and is generally bounded by SR 237 and I-880, a majority of the Project traffic would access the site via these two freeways. Construction equipment and workers would access the Project site along Los Esteros Road and Zanker Road, connecting to SR 237.

**Zanker Road** is a two-lane road that provides entry to the Facility site from the south, and turns into Los Esteros Road near the northeastern corner of the Facility operational area. SR-237 can be accessed from Zanker Road by driving south to SR-237. **Los Esteros Road** is a two-lane road that enters the Facility site from the west, and runs along the southern flank of the Facility operational area. SR-237 can be accessed from Los Esteros Road to the west via Disk Drive and North 1st Street.

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Checklist Source(s)</i>
<b>16. TRANSPORTATION AND TRAFFIC — Would the project:</b>					
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2,13
b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,2
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,2
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2,13

## 2.16.2 Discussion

- a, b) **Less than Significant Impact.** Construction of the proposed Project would involve limited daily worker trips to and from the construction site. As noted in the Project Description, a total of 550 round-trip truck trips (approximately two per day) would be required over the course of the Project to deliver materials to the site and remove debris from the site. An average of seven workers per day would commute to the Project site during Project construction as well. In general, the great majority (95%) of project trips are assumed to access the site via SR 237 (at the Zanker Road interchange), with the remaining five percent of the trips accessing the site via Zanker Road south of SR 237. Both Project related truck trips and worker and construction vehicle trips would occur only during the construction period, and therefore would cause temporary increases in vehicle traffic. In order to provide a conservative overestimate of anticipated effects on traffic, this analysis assumes that all construction trips would occur during peak hours; the AM and PM peak hours typically occur within the two-hour periods from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM, respectively. Workers and construction vehicles would access the site from Los Esteros Road and Zanker Road. The Project would not require any road closures or lane closures, and would proceed during a 14-month construction schedule. Anticipated construction related trips would thus be dispersed in time across the construction period.

Based on information provided within the Plant Master Plan EIR, Zanker Road serves an average daily traffic (ADT) volume of approximately 3,600 vehicles north of the SR 237 ramps. The most likely intersections that could be affected by an increase in traffic trips would be the Zanker Road / SR 237 Westbound Ramps and Zanker Road / SR 237 Eastbound Ramps intersections. Both of these intersections are part of the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program (CMP). According to the VTA's 2012 Annual Monitoring and Conformance Report, these two intersections operate at level of service B during the peak hours.<sup>55</sup> The addition of up to nine construction trips per day over the construction period would result in minor to negligible changes to existing traffic patterns along Project area access roads. These additional trips are not anticipated to reduce level of service noticeably, and the intersections would continue to operate at acceptable service levels (LOS B), and the Project would have a less than significant impact to the local intersections.

The SR 237 and I-880 segments immediately adjacent to the Project site could most likely be affected if there was an increase in traffic trips. In general, SR 237 is fairly congested during both peak traffic periods and has limited capacity to accommodate additional growth in traffic. Northbound I-880 is the peak commute direction during the morning, and southbound is the peak commute direction during the evening. I-880 has slightly more capacity to accommodate additional growth in traffic, though it does have constraints in the peak directions of travel.

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<sup>55</sup> The operation of a local roadway network is commonly measured and described using a grading system called Level of Service (LOS). The LOS grading system qualitatively characterizes traffic conditions associated with varying levels of vehicle traffic, ranging from LOS A (indicating free-flow traffic conditions with little or no delay experienced by motorists) to LOS F (indicating congested conditions where traffic flows exceed design capacity and result in long delays). This LOS grading system applies to both roadway segments and intersections.

Data published by Caltrans indicate that the AADT on I-880 is about 175,000 vehicles south of SR 237 and 205,000 vehicles north of SR 237.<sup>56</sup> CMP guidelines require that freeway segments to which a proposed development is projected to add trips equal to or greater than one percent of the freeway segment's capacity must be evaluated. Under the Plant Master Plan EIR, it was determined that the near-term plant improvements are anticipated to add approximately one to 12 vehicles per hour per lane to the freeway segments, which results in adding less than one percent of capacity to any study freeway segments. As described above, the Project would add approximately seven commute trips during each of the AM and PM peak hours, and no more than two truck trips per day. Because the Project would add fewer trips than those evaluated under the Plant Master Plan EIR, proposed Project would have no significant impact on study freeway segments because it would add less than one percent of capacity to any study freeway segments.

The new Plant Air Compressor Building would not be manned. Plant operators would visually check the facility during regular shifts but are not expected to make routine maintenance trips to the system. The regular shifts would be staffed from within the Facility operational areas, and therefore would not generate additional traffic on site access roads. Therefore, the Project is not anticipated to conflict with any applicable plan, ordinance, policy, or congestion management program with respect to traffic or circulation, or non-motorized travel.

- c) **No Impact.** The proposed facilities would be limited in height to approximately one story, and are not located in close proximity to an existing airport. Additionally, the Project would not introduce new air traffic or interfere with existing air traffic, and therefore have no impact related to air traffic patterns.
- d) **No Impact.** The Project would not install any new public access roadways, nor would it alter roadway geometries or provide new roadway design features that would result in traffic safety hazards for vehicles, bicyclists, and pedestrians along nearby roadways. Additionally, the Project would not introduce an incompatible use (i.e., such as agricultural use) to area roadways. Therefore, potential hazards associated with such conditions would be avoided.
- e) **Less than Significant Impact.** Existing access to the Project site is gained via Zanker Road, from North 1st Street, and along Los Esteros Road. The Project would not block or interfere with, temporarily or permanently, any emergency access route. While the Project would result in additional construction related trips, these would be limited in extent and would only occur during the construction period. Because access would be maintained to the site for both emergency and general (public) vehicles and the Project would not create any obstructions that would impede access in the event of an emergency, the Project would not result in inadequate emergency access.

<sup>56</sup> California Department of Transportation (Caltrans), 2015 2014 Traffic Volumes on California State Highways, available online at <http://traffic-counts.dot.ca.gov/index.htm> ; accessed October 2015.

- f) **Less than Significant Impact.** Project construction would be limited in extent to an area that is not generally accessed or utilized by the public, including pedestrians, bicyclists, or persons utilizing public transit. Existing transit service does not serve the Project area directly, and the Project would not conflict with any planned transit facilities nor would the Project prohibit access to such facilities. There is a Class I trail, a Class I bicycle path and Class II bicycle lanes that start near the Zanker Road/SR 237 ramp intersections; however there are no bicycle facilities within the immediate vicinity of the Project site. The Project would not conflict with any existing bicycle facilities, nor would the Project restrict or prohibit access to bicycle facilities or result in a disturbance to users of such bicycle facilities. The Project site currently has very limited pedestrian access, and no sidewalks are provided within the Project site. The Project would not affect any existing or planned pedestrian facilities. While construction related truck trips could cause a minor increase in use of access roads, these would not interfere with pedestrian, bicycle, or public transit. The Project would not directly or indirectly eliminate alternative transportation corridors or facilities, nor would the Project include changes in adopted policies, plans, or programs that support alternative transportation. As a result, the Project would not conflict with adopted policies, plans, and programs and therefore the Project impact would be less than significant.

## 2.17 Utilities and Service Systems

### 2.17.1 Setting

#### Environmental Setting

The City's sanitary sewer system includes approximately 2,200 miles of sewer pipelines ranging from six to 90 inches in diameter. Sewer systems route to the Facility, of which this Project is a component. The Facility provides primary, secondary, and tertiary treatment of wastewater and has the capacity to treat 167 mgd average dry weather influent flow.

Solid waste and recycling collection services for businesses in San José are provided by various contracted and franchised waste and recycling haulers. Non-residential waste may be disposed at any of four privately owned landfills in San José (including Newby Island Sanitary Landfill, Zanker Road Landfill, Zanker Material Processing Facility, and Guadalupe Landfill) or at other landfills outside Santa Clara County. According to Santa Clara County's 2011 five-year countywide integrated waste management plan review report, the County has adequate disposal capacity (i.e., greater than 15 years).<sup>57</sup>

Historically, electricity generated at an onsite cogeneration facility provided most of the needed electricity supply for the Facility. However, the Facility currently receives electrical power from the grid via PG&E as the main source of power supply.

#### Regulatory Setting

##### *Federal Safe Drinking Water Act*

The U.S. Environmental Protection Agency (U.S. EPA) administers the Safe Drinking Water Act (SDWA), the primary federal law that regulates the quality of drinking water and establishes standards to protect public health and safety. The California Department of Health Services (DHS) implements the SDWA and oversees public water system quality statewide. California DHS establishes legal drinking water standards for contaminants that could threaten public health.

##### *Zero Waste Resolution and Zero Waste Strategic Plan*

In October 2007, the City Council adopted a Zero Waste Resolution (No. 74077), which set a goal of 75 percent waste diversion by 2013 and a goal of zero waste by 2022 for the City. To support this resolution and several Green Vision Goals, the City of San José Environmental Services Department prepared the Integrated Waste Management Zero Waste Strategic Plan in November 2008. The primary focus of this plan is to identify the path to achieve zero waste through various goals which include enhancing residential recycling, enhancing construction and demolition debris recycling, evaluating anaerobic digestion of food scraps at the Facility, and promoting the future development of energy conversion technologies for converting residual wastes into energy.

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<sup>57</sup> Santa Clara County, Five-Year CIWMP/RAIWMP Review Report, August 25, 2011.

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Checklist Source(s)</i>
<b>17. UTILITIES AND SERVICE SYSTEMS — Would the project:</b>					
a) Conflict with wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1,2
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
c) Require or result in the construction of new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
e) Result in a determination by the wastewater treatment provider that would 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 checked="" type="checkbox"/>	<input type="checkbox"/>	1,2
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2,14
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1,2

### 2.17.2 Discussion

- a) **No Impact.** The Project would generate wastewater during operation. Dryers would remove water from the instrument air supply, and the collected water condensed from the air would be routed to the headworks of the Facility for treatment. The Facility is permitted to treat wastewater from this type of process in the operational area; thus, the Project would not conflict with wastewater treatment requirements of the Regional Water Quality Control Board, and there would be no impact. For a discussion of stormwater and stormwater quality associated with Project construction and operation, please refer to Section 2.9 of this document.
- b) **Less than Significant Impact.** The Project would involve the construction and operation of facilities designed to provide support to existing wastewater treatment facilities located at the existing Facility site. Process wastewater collected by the refrigerator dryers would be routed to the headworks for treatment via a new three-inch drainpipe connected to an existing eight-inch sanitary sewer line. The amount of wastewater generated by the Project would be 1-2 gallons per day, a miniscule percent of the peak wet weather capacity of the Facility. This amount of wastewater would not require the construction of new wastewater treatment facilities or expansion of existing facilities as the existing sanitary drainpipe is sufficiently sized to accommodate these flows. The Project would not require additional

water supplies, and would not result in the construction of a major housing development or other action that could drive increases in demand for water or wastewater treatment facilities. Therefore, this impact is considered less than significant.

- c) **Less than Significant Impact.** The Project would involve the installation of new impervious surfaces including a parking area and building, as discussed in the Project Description. One four-inch underdrain would be installed along the southern and eastern sides of the SBB. Runoff from the new parking area and building underdrain system would drain to the existing storm drain system, which then drains to the headworks for treatment. Under existing conditions, drainage from the Project area is collected within the Facility operational area and directed into the Facility headworks for treatment. These existing facilities would be sufficiently sized so as to enable stormwater management from the Project area without further modification. Therefore, this impact is considered less than significant.
- d) **Less than Significant Impact.** The Project would require limited water during construction in support of dust suppression and on site earth moving activities. During operations, negligible water would be required, as the equipment to be installed does not require water for operations and the new building would not be manned. Therefore, existing water supplies at the Facility site would be sufficient to enable construction and operation of the proposed Project without requiring any new or expanded entitlements, or other new sources of water supply. This impact is considered less than significant.
- e) **Less than Significant Impact.** As described above in item c), the Project would generate 1-2 gallons per day of wastewater. This amount of wastewater would be a miniscule percent of the existing peak wet weather capacity. The Facility has capacity to treat up to 261 million gallons per day of wastewater during wet weather. The amount of wastewater generated by the Project would not substantially increase the amount of wastewater requiring treatment at the Facility. For this reason, the impact of the Project on wastewater treatment capacity would be less than significant.
- f) **Less than Significant Impact.** During construction, the Project would generate some construction-related waste and debris, such as wood wastes, metals, concrete, plastics, and various other components generated during the construction process. In addition, approximately 300 cubic yards of excavated material would be hauled offsite. Upon completion of the new buildings, the existing dryers and wet tank in the secondary blower building would be demolished.

To the extent feasible, demolition/decommissioning rubble would be recycled, including concrete, asphalt, metals, and metal piping. Similarly, recyclable construction materials would also be recycled. Non-recyclable materials would be landfilled or otherwise disposed of in accordance with applicable regulatory requirements. As noted above, the Project would utilize one or more of the four landfills identified above to dispose of demolition and construction related solid wastes from the Project area, while recycling would rely on a local franchised recycler. Given that the County has at least 15 years of available landfill capacity,

and that the Project would generate a relatively limited volume of solid waste due to its limited extent, available landfill capacity would not be noticeably affected by the Project. This impact is considered less than significant.

- g) **Less than Significant Impact.** Operation of the Project would not include hazardous materials. Project construction would comply with all applicable regulatory requirements related to solid waste. Specifications for Project construction would contain requirements for the handling, storage, cleanup, and disposal of hazardous materials including cement or other construction pollutants. For additional discussion of hazardous materials and potential hazardous materials handling and impacts, please refer to Section 2.1.8 of this document.

## 2.18 Mandatory Findings of Significance

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporation</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>	<i>Checklist Source(s)</i>
<b>18. MANDATORY FINDINGS OF SIGNIFICANCE — Would the project:</b>					
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1-13
b) Have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1-13
c) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1-13

### 2.18.1 Discussion

- a) **Less than Significant with Mitigation.** As discussed for potential impacts to biological resources, the Project could result in removal of trees and potential impacts to nesting or breeding birds, including special-status bird species, and also including burrowing owls and their habitat. However, these potential impacts would be mitigated to less than significant levels via applicable mitigation, including Mitigation Measures BIO-1 through BIO-2. No other biological resources would be substantially affected. For additional discussion, please refer to Section 2.4, Biological Resources. No further mitigation would be required. As discussed for potential impacts to cultural resources, there are no historical resources or archaeological resources in the Project area. Potential impacts to inadvertently discovered archaeological resources or human remains would be mitigated to a less-than-significant level with implementation of Mitigation Measures CUL-1 and CUL-2. No other cultural resources would be affected and the Project would not eliminate important examples of the major periods of California history or prehistory. For additional discussion, please refer to Section 2.5, Cultural Resources. No further mitigation would be required.
- b) **Less than Significant with Mitigation.** Cumulative environmental effects are multiple individual effects that, when considered together are considerable or compound or increase other environmental impacts. The individual effects may result from a single project or a number of separate projects and may occur at the same place and point in time or at different locations and over extended periods of time. Cumulative projects identified that are ongoing at present or anticipated in the reasonably foreseeable future that would be relevant to the proposed Project include the proposed projects associated with implementation of the Plant

Master Plan, as well as other anticipated facility upgrades at the Facility. The text below characterizes the project's potential to contribute to significant cumulative impacts.

**Air quality, Greenhouse Gas Emissions.** The Project's air quality impacts would largely be limited to the construction period. Temporary construction related air quality and GHG emissions would be minimized through the adherence to BAAQMD standards and requirements, and BAAQMD basic construction mitigation measures. The methodology for assessing cumulative air quality impacts is based on BAAQMD guidance, as noted above. As described for Checklist Item 3c of Section 2.3.2., Air Quality, the Project would not result in a cumulatively considerable net increase in criteria air pollutants. The analysis of greenhouse gas emissions is inherently a cumulative analysis (with the geographic scope of the impact being the global climate). As described in Section 2.7, the Project would not result in significant impacts related to greenhouse gas emissions.

**Biological Resources.** The Project would implement the identified mitigation measures in Section 2.4 and would have either no impacts or less-than-significant impacts on riparian habitat or other sensitive natural communities, migration of species, or applicable biological resources protection ordinances. Therefore, the Project would not contribute to any cumulative impact for these resources.

**Traffic.** As noted in Section 2.1.3 and the Project Description, construction traffic generation and onsite activity would be limited. However, construction of the proposed Project could overlap with construction of other projects at the Facility. Based on schedules currently available for projects at the Facility, the following shown in **Table 2.18-1** could overlap with Project construction.

**TABLE 2.18-1  
MASTER PLAN PROJECTS WITH CONSTRUCTION SCHEDULES  
OVERLAPPING WITH THE PROJECT**

Area	Project Title	Project Summary	Estimated Construction Schedule
Energy and Automation	Cogeneration Facility	Involves constructing a new cogeneration building to provide electric power to the Facility as well as providing digester heating and other heating needs. Project includes four engine generators; control panel; heat recovery, cooling, and starting air systems; emission control equipment; electrical switchgear; and other accessory items.	2016 - 2019
Facilities	Construction Enabling Improvements	Provides necessary infrastructure to support increased construction activity at the Facility including access improvements, security, worker parking, contractor trailer space, and laydown areas, along with future construction management space requirements.	2016
Headworks	Headworks Critical Improvements	Includes replacing existing climber screens and slide gate shaft as well as updating controls electronics.	2016 - 2017

**TABLE 2.18-1  
MASTER PLAN PROJECTS WITH CONSTRUCTION SCHEDULES  
OVERLAPPING WITH THE PROJECT**

Area	Project Title	Project Summary	Estimated
Primary Treatment	Iron Salt Feed Station	Includes installation of iron salt feed station (chemical storage tank with containment, associated pumps, piping) to deliver chemical to incoming wastewater, improving plant performance (also provides odor control).	2016 - 2017
Secondary Treatment	Blower Improvements	Involves replacing blower motors, switchgear, control panels and installing variable frequency drives to provide process air fed into biological nutrient removal aeration tanks.	2017 - 2019
Solids Processing	Digester and Thickener Facilities Upgrade	Includes modifications to four of the existing anaerobic digesters, replacement of the digester gas pipeline and upgrades to six dissolved air flotation thickeners ("DAFTs") at the Facility, and a new waste biogas flare system.	2016 - 2019
Site Facility Improvements	Fiber Optic Connection	Entails extending an existing fiber optic conduit	2016

Because the extent of construction of potentially overlapping projects is not fully known at this time, it is possible that service levels along affected roadways could be temporarily degraded. **(Impact MFS-1)** Therefore, implementation of the following mitigation measures is recommended to reduce the project's contribution to any potential traffic impacts to the surrounding network:

**Mitigation Measure C-TR: Implement Coordinated Transportation Management Plan.**

Prior to construction, ESD or its contractor(s) shall develop a Coordinated Transportation Management Plan and work with other projects' contractors and appropriate City departments (e.g., Emergency Services, Fire, Police, Transportation) to prepare and implement a transportation management plan for roadways adjacent to and directly affected by the Project as well as planned Facility improvements and land uses, and to address the transportation impact of the overlapping construction projects within the vicinity of the Project in the region. The transportation management plan shall include, but not be limited to, the following requirements:

- Coordination of individual traffic control plans for the Project with nearby projects.
- Coordination between the Project contractor and other project contractors in developing circulation and detour plans that include safety features (e.g., signage and flaggers). The circulation and detour plans shall address:
  - Full and partial roadways closures
  - Circulation and detour plans to include the use of signage and flagging to guide vehicles through and/or around the construction zone, as well as any temporary traffic control devices

- Bicycle/Pedestrian detour plans, where applicable
- Parking along public roadways
- Haul routes for construction trucks and staging areas for instances when multiple trucks arrive at the work sites
- Protocols for updating the transportation management plan to account for delays or changes in the schedules of individual projects.

Implementation of this measure would ensure that the project's contribution to the impact was less-than-cumulatively considerable.

- g) **Less than Significant Impact.** All potential environmental impacts identified in support of the Project would be minimal/less than significant without mitigation, or would be minimized via implementation of applicable mitigation measures. All potential hazards and hazardous materials impacts would be minimized. No potentially significant impacts, which could cause substantial adverse direct or indirect effects on human beings were identified.

### Checklist Sources

1. CEQA Guidelines and professional judgment and expertise of the environmental consultant preparing this assessment, based upon a review of the site and surrounding conditions, as well as a review of the project plans.
2. San José/Santa Clara Water Pollution Control Plant Master Plan Environmental Impact Report
3. California Department of Transportation Officially Designated State Scenic Highways and Historic Parkways ([http://www.dot.ca.gov/hq/LandArch/scenic\\_highways/](http://www.dot.ca.gov/hq/LandArch/scenic_highways/))
4. California Department of Conservation [Map], Santa Clara County Important Farmland 2012
5. Bay Area Air Quality Management District CEQA Guidelines
6. Santa Clara Valley Habitat Plan
7. Cultural Resources Study for the Plant Instrument Air System Upgrade Project
8. California Geological Survey Alquist-Priolo maps
9. Geotechnical Investigations and Recommendations for Plant Air Compressor Building
10. California State Water Resources Control Board GeoTracker Database
11. California Department of Toxic Substances Control Envirostor Database
12. FEMA 100-year floodplain delineations
13. City of San José. Envision San José 2040 General Plan. Integrated Final Program Environmental Impact Report for the Envision San José 2040 General Plan. November 2011.
14. Santa Clara County's Five-Year CIWMP/RAIWMP Review Report (August, 2007)

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# CHAPTER 3

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# CHAPTER 4

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# APPENDIX A

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## Air Quality Study



## ESTIMATION OF CONSTRUCTION EMISSIONS - CRITERIA POLLUTANTS

Offroad Equipment	Number	hp	hours/day	No. of days used	Emission Factors (lb/hr)				Emissions (lbs)			
					ROG	NOx	PM10	PM2.5	ROG	NOx	PM10	PM2.5
Concrete Truck	3	320	6	20	0.12	1.27	0.048	0.044	41.51	456.94	17.24	15.86
Crane	1	150	2	12	0.07	0.74	0.040	0.037	1.75	17.78	0.96	0.89
Backhoe	1	100	6	60	0.04	0.35	0.027	0.024	13.61	124.30	9.57	8.80
Forklift	1	89	1	200	0.05	0.47	0.037	0.034	11.00	94.49	7.40	6.81
Paver	1	126	6	1	0.07	0.71	0.035	0.032	0.39	4.24	0.21	0.19
Rollers	1	81	6	4	0.05	0.42	0.031	0.028	1.13	10.01	0.74	0.68
Plate Compactor	1	8	6	40	0.05	0.19	0.017	0.016	11.20	45.94	4.11	3.78
Aerial Lift	1	63	4	250	0.05	0.47	0.037	0.034	54.99	472.47	37.02	34.06
Air Compressor	1	78	3	50	0.05	0.47	0.037	0.034	8.25	70.87	5.55	5.11
Drill Rigs	1	206	8	5	0.05	0.67	0.020	0.018	1.86	26.72	0.78	0.72
Pump	1	84	6	6	0.05	0.47	0.037	0.034	1.98	17.01	1.33	1.23
Welder	1	46	4	30	0.05	0.19	0.017	0.016	5.60	22.97	2.05	1.89
Total offroad Criteria Pollutant Emissions (lbs)									153.3	1363.7	87.0	80.0
Number of construction workdays									280	280	280	280
Average daily offroad criteria pollutant emissions (lbs/day)									0.5	4.9	0.3	0.3

Onroad Vehicles	Miles/round trip	Round trips/day	Emissions Factors (g/mile)				Emissions (lbs/day)			
			ROG	NOx	PM10	PM2.5	ROG	NOx	PM10	PM2.5
Delivery Truck trips (T7 Ag)	40	2	1.8692	19.4471	1.0594	1.0136	0.33	3.43	0.19	0.18
Employee commute trips (LDT1)	25	7	0.0742	0.2446	0.0033	0.0030	0.10	0.34	0.00	0.00
Daily onroad Criteria Pollutant Emissions (lbs/day)							0.43	3.77	0.19	0.18
TOTAL Average criteria pollutant emissions per day (lbs/day)							1.0	8.6	0.5	0.5
BAAQMD Thresholds (lbs/day)							54	54	82	54
Significant (yes/no)?							No	No	No	No
Annual Construction Emissions (tons per year)							0.12	1.04	0.06	0.06

### NOTES:

- Construction equipment type, number, hp and activity data provided by the City.
- All emission rates were derived using the 2011 Offroad emissions inventory database. PM10 and PM2.5 emissions are based on PM emissions with PM10 and PM2.5 fractions applied to the PM emission factors (SCAQMD, 2006); PM = PM10, PM2.5 = PM x 0.92
- ROG emissions are based on THC emissions with conversion factors recommended by CARB (2000).  $ROG = HC \times 1.26639$
- OFFROAD emission factors for "Off highway trucks" were used for concrete truck.
- OFFROAD emission factors for "Other Construction Equipment" used for forklift, aerial lift, air compressor, plate compactor, pump and welder.
- EMFAC2014 emission factors used for onroad vehicles.

### REFERENCES:

- CARB (California Air Resources Board), 2000.  
 SCAQMD (South Coast Air Quality Management District), 2006.

## ESTIMATION OF CONSTRUCTION EMISSIONS - GHG

### GHG Emission Factors

#### GHG Emissions Factors for Diesel Exhaust - For Offroad Equipment

Fuel	CO <sub>2</sub> (g/gal)	N <sub>2</sub> O (g/gal)	CH <sub>4</sub> (g/gal)
Diesel Fuel	8,777.50	0.256	0.576

Notes: Emission factors obtained from TCR, 2015, Tables 13.1 and 13.7.

#### GHG Emissions Factors for Vehicle Exhaust - For Onroad Vehicles

Vehicle Type	Emission Factors (grams/mile)		
	CO <sub>2</sub>	N <sub>2</sub> O	CH <sub>4</sub>
Light-Duty Trucks LDT1 (gasoline)	354.53	0.02	0.20
Delivery Truck -T7 Ag (diesel)	1,784.96	0.05	0.46

Notes: CO<sub>2</sub> on-road emission factors were derived using EMFAC2014 for 2016; CH<sub>4</sub> and N<sub>2</sub>O emission factors are from TRC, 2015, Table 13.4.

### GHG Emissions Summary

Emissions Source	CO <sub>2</sub> e
Offroad Construction Equipment	23.6
Onroad Vehicles	58.5
Total	82.0

### GHG Emissions Calculation

#### Offroad Construction Equipment

Equipment	hp	Total Hours	Diesel Fuel Consumption		Total Emissions (metric tons)			
			gallons/ hour	gallons	CO <sub>2</sub>	N <sub>2</sub> O	CH <sub>4</sub>	CO <sub>2</sub> e
Concrete Truck	320	360	7.40	2,665.1	0.07	0.00	0.00	0.31
Crane	150	24	2.21	53.1	0.47	0.00	0.00	0.47
Backhoe	100	360	1.59	572.4	5.02	0.00	0.00	5.08
Forklift	89	200	1.75	349.6	3.07	0.00	0.00	3.10
Paver	126	6	3.40	20.4	0.18	0.00	0.00	0.18
Rollers	81	24	1.69	40.6	0.36	0.00	0.00	0.36
Plate Compactor	8	240	0.91	219.3	1.93	0.00	0.00	1.95
Aerial Lift	63	1000	1.75	1,747.9	15.34	0.00	0.00	15.50
Air Compressor	78	150	1.75	262.2	2.30	0.00	0.00	2.33
Drill Rigs	206	40	5.35	214.1	1.88	0.00	0.00	1.90
Pump	84	36	1.75	62.9	0.55	0.00	0.00	0.56
Welder	46	120	0.91	109.7	0.96	0.00	0.00	0.97
Total				2,656.7	23.3	0.001	0.00	23.6

#### Onroad vehicle trips

Vehicle Type	Trips	Miles per Trip	Total Emissions (metric tons)			
			CO <sub>2</sub>	N <sub>2</sub> O	CH <sub>4</sub>	CO <sub>2</sub> e
Light-Duty Truck	1960	25	17.37	0.00	0.01	17.91
Heavy-Duty Truck	560	40	39.98	0.00	0.01	40.54
Total			57.4	0.002	0.020	58.5

Calendar Year	Air Basin	Equipment Class	Equipment Type	HorsepowerBin	ScenBSFC	BSFC (gal/hr)	ScenNOx	NOx (lb/hr)	ScenPM	PM (lb/hr)	ScenHC	HC (lb/hr)	ScenActivity	ScenAvgHP
2016	SF	Construction and Mining	Bore/Drill Rigs	50	42572.65	1.17	0.59	0.23	0.04	0.02	0.08	0.03	5135.48	39.27
2016	SF	Construction and Mining	Bore/Drill Rigs	120	260145.73	2.08	3.07	0.35	0.18	0.02	0.20	0.02	17638.99	82.33
2016	SF	Construction and Mining	Bore/Drill Rigs	175	303765.43	3.90	3.26	0.59	0.15	0.03	0.21	0.04	10974.78	148.54
2016	SF	Construction and Mining	Bore/Drill Rigs	250	430319.37	5.35	3.78	0.67	0.11	0.02	0.21	0.04	11321.49	207.75
2016	SF	Construction and Mining	Bore/Drill Rigs	500	478939.12	8.86	3.69	0.97	0.11	0.03	0.21	0.05	7608.65	349.18
2016	SF	Construction and Mining	Bore/Drill Rigs	750	660955.44	16.16	4.23	1.47	0.14	0.05	0.25	0.09	5757.24	611.96
2016	SF	Construction and Mining	Bore/Drill Rigs	1000	51958.29	23.86	0.47	3.06	0.01	0.06	0.01	0.10	306.66	919.00
2016	SF	Construction and Mining	Bore/Drill Rigs	9999	176082.74	69.24	2.26	12.64	0.06	0.31	0.08	0.45	358.05	2666.67
2016	SF	Construction and Mining	Cranes	50	13879.01	0.66	0.23	0.16	0.02	0.02	0.07	0.05	2944.13	40.63
2016	SF	Construction and Mining	Cranes	120	331060.50	1.32	9.60	0.54	0.71	0.04	0.95	0.05	35380.67	88.95
2016	SF	Construction and Mining	Cranes	175	873741.75	2.21	20.58	0.74	1.12	0.04	1.60	0.06	55571.38	147.88
2016	SF	Construction and Mining	Cranes	250	1475888.83	3.24	32.65	1.02	1.48	0.05	2.28	0.07	64197.88	217.00
2016	SF	Construction and Mining	Cranes	500	2260720.58	5.00	38.36	1.21	1.58	0.05	2.49	0.08	63622.50	336.11
2016	SF	Construction and Mining	Cranes	750	595796.15	8.43	7.74	1.55	0.27	0.06	0.43	0.09	9956.02	567.19
2016	SF	Construction and Mining	Cranes	1000	139478.22	13.88	4.91	6.94	0.24	0.34	0.36	0.52	1415.30	937.60
2016	SF	Construction and Mining	Cranes	9999	10742.67	15.33	0.07	1.51	0.00	0.04	0.00	0.08	98.64	1030.00
2016	SF	Construction and Mining	Crawler Tractors	50	42309.02	1.03	0.73	0.25	0.09	0.03	0.24	0.08	5786.35	42.51
2016	SF	Construction and Mining	Crawler Tractors	120	1873993.76	1.94	40.93	0.60	3.45	0.05	4.00	0.06	135728.34	86.86
2016	SF	Construction and Mining	Crawler Tractors	175	2039600.33	3.31	41.18	0.95	2.27	0.05	3.16	0.07	86687.59	149.54
2016	SF	Construction and Mining	Crawler Tractors	250	2056576.34	4.51	37.27	1.16	1.44	0.04	2.29	0.07	64272.21	202.85
2016	SF	Construction and Mining	Crawler Tractors	500	5519111.72	7.61	86.79	1.70	3.36	0.07	5.41	0.11	102095.02	340.69
2016	SF	Construction and Mining	Crawler Tractors	750	2145980.30	12.66	30.38	2.55	1.12	0.09	1.84	0.15	23866.87	570.11
2016	SF	Construction and Mining	Crawler Tractors	1000	284136.96	18.48	6.36	5.87	0.19	0.17	0.34	0.31	2165.11	828.17
2016	SF	Construction and Mining	Crawler Tractors	9999	150115.44	32.50	2.86	8.79	0.08	0.23	0.13	0.41	650.30	1526.50
2016	SF	Construction and Mining	Excavators	50	1694110.49	0.79	22.04	0.15	1.64	0.01	3.08	0.02	303630.45	35.74
2016	SF	Construction and Mining	Excavators	120	2199594.73	1.60	31.43	0.32	2.30	0.02	2.62	0.03	193894.05	81.78
2016	SF	Construction and Mining	Excavators	175	4633335.17	2.88	56.75	0.50	2.79	0.02	4.11	0.04	226207.88	146.04
2016	SF	Construction and Mining	Excavators	250	5890234.66	4.31	64.83	0.67	2.05	0.02	3.83	0.04	192212.16	218.47
2016	SF	Construction and Mining	Excavators	500	9769108.40	6.46	82.89	0.78	2.67	0.03	5.19	0.05	212868.97	328.64
2016	SF	Construction and Mining	Excavators	750	884702.77	11.30	9.00	1.63	0.30	0.05	0.54	0.10	11019.62	577.94
2016	SF	Construction and Mining	Excavators	1000	99304.69	16.59	1.66	3.94	0.04	0.11	0.08	0.19	842.79	842.88
2016	SF	Construction and Mining	Excavators	9999	193437.46	30.67	2.13	4.81	0.06	0.13	0.11	0.24	888.05	1569.14
2016	SF	Construction and Mining	Graders	50	11186.32	0.86	0.21	0.23	0.03	0.03	0.08	0.09	1824.74	39.16
2016	SF	Construction and Mining	Graders	120	300957.33	1.91	8.56	0.77	0.71	0.06	0.90	0.08	22180.79	91.00
2016	SF	Construction and Mining	Graders	175	2800369.54	3.19	68.05	1.10	3.82	0.06	5.52	0.09	123753.14	147.95
2016	SF	Construction and Mining	Graders	250	4871894.03	4.36	81.97	1.04	2.66	0.03	4.76	0.06	157221.09	204.35
2016	SF	Construction and Mining	Graders	500	1388374.74	6.20	15.36	0.97	0.60	0.04	1.15	0.07	31550.63	293.17
2016	SF	Construction and Mining	Graders	1000	13434.31	16.81	0.37	6.66	0.01	0.23	0.02	0.42	112.52	796.00
2016	SF	Construction and Mining	Graders	9999	189250.25	42.01	3.75	11.82	0.11	0.36	0.21	0.67	634.30	1992.80
2016	SF	Construction and Mining	Off-Highway Tractors	50	701079.35	0.94	10.22	0.19	0.96	0.02	2.32	0.04	104814.10	37.66
2016	SF	Construction and Mining	Off-Highway Tractors	120	893435.75	1.69	15.05	0.40	1.21	0.03	1.38	0.04	74518.08	74.53
2016	SF	Construction and Mining	Off-Highway Tractors	175	763252.48	3.57	10.31	0.68	0.52	0.03	0.74	0.05	30121.55	158.08
2016	SF	Construction and Mining	Off-Highway Tractors	250	638883.98	4.79	9.50	1.01	0.33	0.04	0.57	0.06	18767.88	213.84
2016	SF	Construction and Mining	Off-Highway Tractors	500	1800144.82	7.50	17.38	1.03	0.60	0.04	1.08	0.06	33789.91	334.44
2016	SF	Construction and Mining	Off-Highway Tractors	750	453000.36	12.90	4.86	1.97	0.16	0.06	0.28	0.11	4945.56	573.53
2016	SF	Construction and Mining	Off-Highway Tractors	1000	12856.21	22.50	0.09	2.23	0.00	0.06	0.00	0.09	80.44	1000.00
2016	SF	Construction and Mining	Off-Highway Tractors	9999	105458.66	39.76	1.16	6.22	0.03	0.16	0.05	0.29	373.48	1726.25
2016	SF	Construction and Mining	Off-Highway Trucks	50	67060.57	0.62	1.09	0.14	0.11	0.01	0.26	0.03	15227.10	29.14
2016	SF	Construction and Mining	Off-Highway Trucks	120	82232.83	1.69	1.34	0.39	0.11	0.03	0.13	0.04	6834.35	87.06
2016	SF	Construction and Mining	Off-Highway Trucks	175	1589487.34	3.12	22.30	0.62	1.24	0.03	1.88	0.05	71743.23	158.89
2016	SF	Construction and Mining	Off-Highway Trucks	250	3260492.67	4.13	47.61	0.86	2.05	0.04	3.63	0.07	111049.79	211.02
2016	SF	Construction and Mining	Off-Highway Trucks	500	13855860.30	7.40	167.24	1.27	6.31	0.05	12.00	0.09	263519.86	372.42
2016	SF	Construction and Mining	Off-Highway Trucks	750	4949153.59	13.00	68.71	2.56	2.76	0.10	5.11	0.19	53597.53	655.92
2016	SF	Construction and Mining	Off-Highway Trucks	1000	3436246.21	17.69	62.34	4.56	1.81	0.13	3.35	0.25	27348.30	897.23
2016	SF	Construction and Mining	Off-Highway Trucks	9999	4937542.06	34.99	82.87	8.34	2.55	0.26	4.99	0.50	19866.65	1764.19
2016	SF	Construction and Mining	Other Construction Equipment	50	379152.73	0.91	5.59	0.19	0.50	0.02	1.08	0.04	58416.00	38.01
2016	SF	Construction and Mining	Other Construction Equipment	120	1186639.63	1.75	22.58	0.47	1.77	0.04	2.08	0.04	95583.55	81.56
2016	SF	Construction and Mining	Other Construction Equipment	175	646241.98	3.26	11.34	0.81	0.60	0.04	0.84	0.06	27918.89	152.49
2016	SF	Construction and Mining	Other Construction Equipment	250	829205.58	4.69	13.06	1.05	0.48	0.04	0.78	0.06	24898.43	216.90
2016	SF	Construction and Mining	Other Construction Equipment	500	2828396.82	7.71	34.50	1.34	1.27	0.05	2.14	0.08	51625.51	356.86

2016	SF	Construction and Mining	Other Construction Equipment	750	1103628.49	12.86	12.39	2.05	0.40	0.07	0.68	0.11	12087.32	597.67
2016	SF	Construction and Mining	Other Construction Equipment	1000	128651.43	17.79	1.64	3.23	0.04	0.08	0.07	0.13	1018.45	830.15
2016	SF	Construction and Mining	Other Construction Equipment	9999	80118.28	23.64	1.23	5.15	0.03	0.14	0.06	0.25	477.22	1126.67
2016	SF	Construction and Mining	Pavers	50	46445.67	0.93	0.70	2.00	0.07	0.02	0.19	0.05	7063.06	38.63
2016	SF	Construction and Mining	Pavers	120	449457.39	1.70	7.98	0.43	0.62	0.03	0.73	0.04	37219.55	79.58
2016	SF	Construction and Mining	Pavers	175	610524.20	3.40	8.93	0.71	0.44	0.04	0.66	0.05	25305.03	158.13
2016	SF	Construction and Mining	Pavers	250	412062.21	4.59	4.96	0.79	0.13	0.02	0.22	0.03	12629.11	213.21
2016	SF	Construction and Mining	Pavers	500	155278.07	6.95	1.36	0.86	0.05	0.03	0.07	0.04	3143.54	327.38
2016	SF	Construction and Mining	Pavers	750	17954.55	16.10	0.13	1.69	0.01	0.07	0.01	0.10	157.03	750.00
2016	SF	Construction and Mining	Paving Equipment	50	57740.59	0.70	0.78	0.14	0.06	0.01	0.13	0.02	11548.83	34.82
2016	SF	Construction and Mining	Paving Equipment	120	262622.01	1.63	4.51	0.40	0.34	0.03	0.40	0.04	22665.95	88.60
2016	SF	Construction and Mining	Paving Equipment	175	247387.61	2.72	3.22	0.50	0.16	0.02	0.23	0.04	12824.78	148.41
2016	SF	Construction and Mining	Paving Equipment	250	129660.74	3.96	1.72	0.75	0.06	0.02	0.10	0.04	4612.82	215.67
2016	SF	Construction and Mining	Paving Equipment	500	182883.36	6.17	2.41	1.16	0.09	0.04	0.14	0.07	4170.05	338.76
2016	SF	Construction and Mining	Paving Equipment	750	86740.88	11.11	1.01	1.85	0.02	0.04	0.05	0.09	1099.75	605.00
2016	SF	Construction and Mining	Paving Equipment	1000	16962.20	15.47	0.24	3.05	0.01	0.08	0.01	0.12	154.39	842.00
2016	SF	Construction and Mining	Rollers	50	953026.62	0.77	13.45	0.15	1.18	0.01	2.67	0.03	174095.30	35.68
2016	SF	Construction and Mining	Rollers	120	1489074.39	1.69	25.86	0.42	1.90	0.03	2.31	0.04	123994.39	86.86
2016	SF	Construction and Mining	Rollers	175	1539071.44	2.79	19.60	0.50	0.91	0.02	1.29	0.03	77775.53	143.78
2016	SF	Construction and Mining	Rollers	250	243185.75	4.15	3.20	0.78	0.11	0.03	0.19	0.04	8256.49	213.25
2016	SF	Construction and Mining	Rollers	500	153680.31	6.59	2.03	1.23	0.08	0.05	0.13	0.08	3285.60	334.88
2016	SF	Construction and Mining	Rollers	750	7480.08	10.11	0.02	0.30	0.00	0.00	0.00	0.02	104.21	520.50
2016	SF	Construction and Mining	Rough Terrain Forklifts	50	48525.02	1.09	0.67	0.21	0.05	0.02	0.13	0.04	6249.51	47.28
2016	SF	Construction and Mining	Rough Terrain Forklifts	120	3906951.91	2.00	44.98	0.33	2.50	0.02	2.92	0.02	274415.65	96.33
2016	SF	Construction and Mining	Rough Terrain Forklifts	175	717952.25	2.69	6.93	0.37	0.27	0.01	0.37	0.02	37592.57	129.59
2016	SF	Construction and Mining	Rough Terrain Forklifts	250	59012.22	4.33	0.44	0.46	0.01	0.01	0.02	0.02	1917.36	208.31
2016	SF	Construction and Mining	Rough Terrain Forklifts	500	25019.81	7.69	0.27	1.17	0.01	0.03	0.01	0.05	458.04	373.89
2016	SF	Construction and Mining	Rough Terrain Forklifts	750	3915.39	12.98	0.02	0.73	0.00	0.01	0.00	0.04	42.46	625.00
2016	SF	Construction and Mining	Rubber Tired Dozers	50	41774.25	0.93	0.77	0.24	0.10	0.03	0.28	0.09	6320.89	41.59
2016	SF	Construction and Mining	Rubber Tired Dozers	120	200450.10	1.69	5.56	0.67	0.50	0.06	0.59	0.07	16703.17	81.59
2016	SF	Construction and Mining	Rubber Tired Dozers	175	166979.21	3.07	4.93	1.29	0.28	0.07	0.40	0.10	7664.87	149.68
2016	SF	Construction and Mining	Rubber Tired Dozers	250	174202.45	4.34	4.16	1.47	0.21	0.07	0.32	0.11	5654.40	210.98
2016	SF	Construction and Mining	Rubber Tired Dozers	500	1992097.47	7.33	45.49	2.38	2.12	0.11	3.36	0.18	38242.57	354.05
2016	SF	Construction and Mining	Rubber Tired Dozers	750	234573.96	11.96	5.04	3.65	0.18	0.13	0.30	0.22	2762.14	584.10
2016	SF	Construction and Mining	Rubber Tired Loaders	50	132267.69	0.87	2.17	0.20	0.24	0.02	0.61	0.06	21519.93	41.70
2016	SF	Construction and Mining	Rubber Tired Loaders	120	3220337.56	1.59	64.51	0.45	5.54	0.04	6.50	0.05	285223.55	86.15
2016	SF	Construction and Mining	Rubber Tired Loaders	175	7646398.67	2.80	131.76	0.69	7.35	0.04	10.75	0.06	384691.49	150.00
2016	SF	Construction and Mining	Rubber Tired Loaders	250	10537590.89	3.83	162.70	0.84	5.55	0.03	10.34	0.05	387332.32	205.91
2016	SF	Construction and Mining	Rubber Tired Loaders	500	13703265.52	5.91	192.63	1.18	7.24	0.04	13.46	0.08	326507.66	319.69
2016	SF	Construction and Mining	Rubber Tired Loaders	750	2436828.54	10.91	31.42	2.00	1.24	0.08	2.32	0.15	31446.89	600.48
2016	SF	Construction and Mining	Rubber Tired Loaders	1000	706993.13	15.60	14.32	4.49	0.42	0.13	0.75	0.23	6380.10	836.81
2016	SF	Construction and Mining	Rubber Tired Loaders	9999	281154.98	28.25	4.71	6.72	0.13	0.19	0.25	0.35	1401.42	1521.00
2016	SF	Construction and Mining	Scrapers	50	3032.67	1.00	0.06	0.26	0.01	0.04	0.02	0.10	428.14	36.14
2016	SF	Construction and Mining	Scrapers	120	138492.15	2.16	2.90	0.64	0.22	0.05	0.25	0.06	9043.92	84.33
2016	SF	Construction and Mining	Scrapers	175	1461366.08	4.20	31.95	1.30	1.72	0.07	2.46	0.10	48970.76	166.16
2016	SF	Construction and Mining	Scrapers	250	1678008.51	5.56	41.18	1.94	1.86	0.09	2.87	0.14	42456.39	224.97
2016	SF	Construction and Mining	Scrapers	500	14695130.09	9.51	254.02	2.34	10.24	0.09	16.49	0.15	217572.04	381.35
2016	SF	Construction and Mining	Scrapers	750	6729779.24	14.10	90.55	2.69	3.38	0.10	5.67	0.17	67219.63	564.95
2016	SF	Construction and Mining	Scrapers	1000	105270.80	23.68	4.23	13.53	0.20	0.63	0.31	0.98	625.91	950.00
2016	SF	Construction and Mining	Scrapers	9999	382634.99	48.99	8.39	15.25	0.32	0.58	0.50	0.90	1099.69	1923.31
2016	SF	Construction and Mining	Skid Steer Loaders	50	720307.43	0.92	8.27	0.15	0.47	0.01	0.96	0.02	109720.51	43.47
2016	SF	Construction and Mining	Skid Steer Loaders	120	3826785.47	1.34	40.61	0.20	2.27	0.01	2.59	0.01	401046.64	70.54
2016	SF	Construction and Mining	Skid Steer Loaders	175	25881.06	2.89	0.31	0.48	0.01	0.02	0.02	0.03	1260.44	152.93
2016	SF	Construction and Mining	Skid Steer Loaders	250	19892.34	3.76	0.21	0.57	0.01	0.02	0.01	0.03	745.19	200.53
2016	SF	Construction and Mining	Skid Steer Loaders	500	5462.04	5.13	0.02	0.31	0.00	0.01	0.00	0.02	149.91	276.67
2016	SF	Construction and Mining	Skid Steer Loaders	750	5761.73	10.09	0.04	1.04	0.00	0.04	0.00	0.05	80.38	530.00
2016	SF	Construction and Mining	Skid Steer Loaders	1000	9402.11	19.04	0.11	3.24	0.00	0.10	0.01	0.16	69.52	1000.00
2016	SF	Construction and Mining	Surfacing Equipment	50	6634.42	0.63	0.09	0.13	0.01	0.01	0.02	0.02	1490.63	35.67
2016	SF	Construction and Mining	Surfacing Equipment	120	52073.59	1.38	0.79	0.30	0.05	0.02	0.07	0.03	5318.01	88.68
2016	SF	Construction and Mining	Surfacing Equipment	175	26975.57	2.34	0.44	0.55	0.02	0.03	0.03	0.04	1619.85	150.98
2016	SF	Construction and Mining	Surfacing Equipment	250	57283.82	3.40	0.86	0.72	0.03	0.02	0.04	0.04	2374.67	216.06

2016	SF	Construction and Mining	Surfacing Equipment	500	180945.07	5.60	1.90	0.84	0.06	0.03	0.10	0.04	4545.95	362.36
2016	SF	Construction and Mining	Surfacing Equipment	750	168174.67	9.60	1.45	1.18	0.05	0.04	0.07	0.05	2467.03	615.08
2016	SF	Construction and Mining	Surfacing Equipment	1000	27339.26	12.73	0.47	3.12	0.01	0.08	0.02	0.14	302.33	814.29
2016	SF	Construction and Mining	Surfacing Equipment	9999	9582.14	17.50	0.11	2.92	0.00	0.07	0.00	0.11	77.11	1141.00
2016	SF	Construction and Mining	Tractors/Loaders/Backhoes	50	1427470.90	0.80	20.45	0.16	1.78	0.01	4.05	0.03	252025.13	38.31
2016	SF	Construction and Mining	Tractors/Loaders/Backhoes	120	22983111.48	1.59	351.38	0.35	27.05	0.03	30.38	0.03	2035270.14	82.65
2016	SF	Construction and Mining	Tractors/Loaders/Backhoes	175	3973568.59	2.72	52.63	0.51	2.67	0.03	3.87	0.04	205561.44	143.93
2016	SF	Construction and Mining	Tractors/Loaders/Backhoes	250	2304812.86	3.88	30.75	0.73	1.01	0.02	1.78	0.04	83741.17	204.22
2016	SF	Construction and Mining	Tractors/Loaders/Backhoes	500	3095640.70	6.09	35.27	0.98	1.22	0.03	2.18	0.06	71624.40	320.14
2016	SF	Construction and Mining	Tractors/Loaders/Backhoes	750	439260.49	10.83	5.36	1.88	0.19	0.07	0.33	0.12	5711.07	574.62
2016	SF	Construction and Mining	Tractors/Loaders/Backhoes	1000	74148.50	16.76	0.85	2.72	0.02	0.06	0.03	0.11	622.83	871.40
2016	SF	Construction and Mining	Tractors/Loaders/Backhoes	9999	1040221.31	38.25	15.94	8.32	0.48	0.25	0.81	0.42	3829.33	2005.62
2016	SF	Construction and Mining	Trenchers	50	505297.69	1.15	7.19	0.23	0.64	0.02	1.37	0.04	61599.21	39.78
2016	SF	Construction and Mining	Trenchers	120	365951.02	2.15	7.53	0.63	0.59	0.05	0.71	0.06	24004.80	82.06
2016	SF	Construction and Mining	Trenchers	175	74696.77	3.70	1.47	1.04	0.07	0.05	0.11	0.08	2839.82	143.87
2016	SF	Construction and Mining	Trenchers	250	146297.12	5.68	2.77	1.53	0.11	0.06	0.18	0.10	3624.79	218.42
2016	SF	Construction and Mining	Trenchers	500	246434.41	9.28	3.04	1.63	0.11	0.06	0.18	0.10	3740.09	358.52
2016	SF	Construction and Mining	Trenchers	750	111475.37	16.17	0.54	1.12	0.02	0.04	0.03	0.07	970.39	619.25
2016	SF	Construction and Mining	Trenchers	1000	6583.35	22.33	0.26	12.55	0.01	0.57	0.02	0.90	41.51	860.00
2016	SF	Construction and Mining	Sweepers/Scrubbers	50	439327.09	0.93	6.79	0.20	0.71	0.02	1.75	0.05	66347.15	35.59
2016	SF	Construction and Mining	Sweepers/Scrubbers	120	678994.58	1.83	13.11	0.50	1.16	0.04	1.31	0.05	52152.66	77.53
2016	SF	Construction and Mining	Sweepers/Scrubbers	175	169368.37	3.76	3.95	1.25	0.21	0.07	0.31	0.10	6337.50	159.47
2016	SF	Construction and Mining	Sweepers/Scrubbers	250	90266.51	4.79	1.85	1.39	0.07	0.06	0.12	0.09	2651.88	204.41
2016	SF	Construction and Mining	Sweepers/Scrubbers	500	25183.18	7.12	0.46	1.84	0.02	0.08	0.03	0.12	497.89	302.50
2016	SF	Construction and Mining	Sweepers/Scrubbers	1000	17649.04	19.96	0.22	3.49	0.01	0.09	0.01	0.13	124.47	848.00



EMFAC2014 (v1.0.7) Emission Rates

Region Type: County

Region: Santa Clara

Calendar Year: 2016

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Region	CalYr	VehClass	MdYr	Speed	Fuel	Population	VMT	Trips	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_HOTSOAK	ROG_RUNLOSS	ROG_RESTLOSS	ROG_DIURN	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_HOTSOAK	TOG_RUNLOSS
Santa Clara	2016	LDT1	Aggregated	Aggregated	GAS	61074.78622	1928620.569	371464.827	0.074160322	0	0.405168132	0.363071552	1.327997619	0.604370262	0.859177114	0.097589762	0	0.443196857	0.363071552	1.327997619
Santa Clara	2016	LDT1	Aggregated	Aggregated	DSL	76.3331285	1664.884533	372.3846329	0.206094526	0	0	0	0	0	0	0.234624916	0	0	0	0
Santa Clara	2016	LDT1	Aggregated	Aggregated	ELEC	57.68353946	1660.202206	338.1959053	0	0	0	0.004883985	0	0.00455972	0.017500761	0	0	0	0.004883985	0
Santa Clara	2016	T7 Ag	Aggregated	Aggregated	DSL	123.9660961	2061.401551	0	1.869230167	5.240492797	0	0	0	0	0	2.127976257	5.965902137	0	0	0

TOG_DIURN	CO_RUNEX	CO_IDLEX	CO_STREX	NOx_RUNEX	NOx_IDLEX	NOx_STREX	CO2_RUNEX	CO2_IDLEX	CO2_STREX	PM10_RUNEX	PM10_IDLEX	PM10_STREX	PM10_PMTW	PM10_PMBW	PM2_5_RUNEX	PM2_5_IDLEX	PM2_5_STREX	PM2_5_PMTW	PM2_5_PMBW	SOx_RUNEX
0.859177114	2.43427734	0	5.286348322	0.244552059	0	0.300614129	354.5295683	0	80.37715684	0.003271007	0	0.004508786	0.008000002	0.036750011	0.003019052	0	0.004162795	0.002000001	0.015750005	0.003579876
0	1.228942006	0	0	1.24701262	0	0	381.4411561	0	0	0.163698884	0	0	0.008000002	0.036750011	0.156617343	0	0	0.002000001	0.015750005	0.003641474
0.017500761	0	0	0	0	0	0	0	0	0	0	0	0	0.008000002	0.036750011	0	0	0	0.002000001	0.015750005	0
0	7.393415776	14.97771905	0	19.44713359	24.27367344	0	1784.958363	1932.223546	0	1.059442174	0.955760522	0	0.03600001	0.061740018	1.013611174	0.914414745	0	0.009000003	0.026460008	0.017029337

SOx_IDLEX	SOx_STREX	TOG_RESTLOSS
0	0.000898664	0.604370262
0	0	0
0	0	0.00455972
0.018434316	0	0



# APPENDIX B

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## Geotechnical Report





# Memorandum

DRAFT

Date: September 22, 2015

To: John Ryan, P.E.  
CH2M HILL

From: Stephen Huang, G.E.

Subject: Geotechnical Investigation and Recommendations  
Plant Air Compressor Building  
San Jose/Santa Clara Regional Wastewater Facility (RWF)

## PROJECT DESCRIPTION

The City of San Jose wishes to upgrade the Plant Instrument Air system with sufficient reservoir(s) to provide redundancy and air supply to support RWF operations in the event of an extended power loss; this will include a new independent compressor building to be located in the grassy area northwest of the Secondary Blower Building. The building is expected to have a footprint of 30 feet by 43 feet with finish grade above the 100-year flood (Elevation 12 feet). An existing 36-inch diameter pipeline, originating from the Secondary Blower Building, traverses the site from the east to west direction. We understand the building probably will be of concrete block construction with a metal roof and a structural slab floor, with finish floor positioned at Elevation 13.0 feet. A 10-inch thick mat foundation with deepened perimeter wall section is the proposed foundation type; the foundation is expected to exert a dead plus live load of about 900 kips. With current side grade at about Elevation 16 to 17 feet, cuts on the order of about 4 to 5 feet are anticipated in the building footprint. Paved parking is planned north of the building, adjacent to C Street.

## PREVIOUS SITE INVESTIGATIONS AT THE RWF

We reviewed the following geotechnical reports in AECOM's files:

- "Soils and Foundation Investigation, Proposed Secondary Sewage Treatment Facilities, San Jose, California for the City of San Jose," dated March 16, 1961 by Dames and Moore (D&M).
- "Soil and Foundation Investigation, Proposed Additions to San Jose-Santa Clara Water Pollution Control Plan, San Jose, California for City of San Jose, California," dated May 29, 1969 by D&M.
- "Geotechnical Investigation for the Proposed Advanced Water Treatment Facilities, San Jose-Santa Clara Water Pollution Control Plant, San Jose, California," dated November 25, 1974 by Woodward-Lundgren Associates.
- "Geotechnical Investigation, San Jose/Santa Clara Water Pollution Control Plant Intertie and San Jose Interceptor, Phase I, San Jose, California," dated March 7, 1988 by Woodward-Clyde Consultants.
- "Geotechnical Engineering Report, Wet Weather Reliability Improvements Project, San Jose/Santa Clara Water Pollution Control Plant, San Jose, California," dated November 18, 2003 by URS.

Based on the site location information provided, D&M Borings 24, 25 and 28 (1961) are located in close proximity to the proposed air compressor building site. The approximate locations of these borings are shown on the attached Figure 1.

## Subsurface Conditions Encountered in D&M Borings

Boring 24 encountered loose fine sand and silt to a depth of about 8 feet below ground surface (bgs), underlain by soft silty clay with lenses of fine sand and peat to a depth of about 14 feet; about 3 feet of medium stiff sandy clay with gravel lenses was encountered in this boring to a depth of about 17 feet. Medium stiff silty clays were encountered below to the terminal boring depth of 25 feet. Boring 25 encountered loose fine sand and silty sand to a depth of 3 feet, underlain by an approximately 9-foot-thick very dense sand and gravel layer. Below the sand a very stiff silty clay layer was encountered to a depth of 15 feet, underlain by loose silty sand to 19 feet and medium stiff silty clay to the terminal depth of boring at 23 feet. Boring 28 encountered medium dense silty fine sand to a depth of about 5 feet underlain by medium dense to loose sand, gravel and silty sand to the terminal depth of boring at 17 feet. Caving of sandy material occurred during drilling at each boring location.

Free groundwater has been measured historically at depths between 4 and 8 feet below grade at the RWF. It is worth noting the ground surface elevation in borings drilled in 1960 was approximately Elevation 5 to 6 feet. Converting from NGVD29 (likely datum for 1960 measurements) to NAVD88, the groundwater level was likely about Elevation 0 to 5 feet.

## FIELD AND LABORATORY INVESTIGATIONS FOR CURRENT STUDY

The field investigation completed for the current study included two exploratory borings advanced using truck-mounted hollow stem drilling equipment to reach terminal depths of 40 and 44½ feet bgs. The approximate locations of the borings are shown on Figure 1. The explorations were drilled under the supervision of a representative of AECOM who maintained a record of all field activities, classified the soils encountered using the Unified Soil Classification System (USCS) as shown on Figure A-1, and prepared the boring logs. A legend of drilling and sampling operations is attached as reference, along with the logs of the Borings B-1 and B-2.

Representative soil samples obtained from the borings were transported to AECOM's laboratory in San Jose. Laboratory tests were performed on selected samples as an aid in classifying the soils and to evaluate the physical properties of the soils. Tests included moisture content, dry unit weight, and unconfined compressive strength. Test results are presented on the boring logs.

Investigation derived waste (soil cuttings and groundwater from the current borings) was stored in 55-gallon drums at the completion of drilling activities. One composite sample of the drummed materials was collected and submitted to Torrent Laboratories for analytical testing required to characterize the materials for off-site disposal. Test results indicated non-hazardous and drilled waste was disposed of by Belshire.

## SUBSURFACE CONDITIONS IN CURRENT BORINGS

Boring B-1 encountered stiff sandy lean clay fill to a depth of 11½ feet. The fill is underlain by very stiff lean clay to a depth of 17 feet. Below the lean clay, loose to medium dense silty sand grading to poorly-graded sand was encountered to a depth of 27 feet. To the terminal depth of the boring at 40 feet, medium stiff sandy lean clay transitioning to very stiff lean to fat clay was encountered. Boring B-2 encountered hard sandy lean clay fill to a depth of 9 feet. The fill is underlain by very stiff lean clay native soil to a depth of 13 feet. Below the native clay, a layer of medium dense sand was encountered to a depth of 23 feet. From a depth of 23 to 42 feet, stiff to very stiff lean clay was

encountered, underlain by very dense silty sand extending to the terminal depth of Boring B-2 at 44½ feet.

Free groundwater was encountered at a depth of 13 feet in Boring B-2 and at a depth of 19½ feet in Boring B-1, corresponding to Elevation 3 and -2.5 feet (NAVD 88), respectively. In clayey soils, as generally encountered in the borings, a fairly long time would be required for the groundwater to seep into the borehole and attain an equilibrium position with the long-term hydrostatic groundwater table. Thus, the immediate readings obtained in boreholes may or may not be representative of the actual groundwater table level. Seasonal fluctuations in groundwater level should be anticipated throughout the year with fluctuations in precipitation, evaporation, and surface runoff. Consecutive years of high or low precipitation would create greater fluctuations in the groundwater elevation.

## LIQUEFACTION EVALUATION

Liquefaction is a phenomenon whereby sediments temporarily lose shear strength and collapse. This condition is caused by cyclic loading during earthquake shaking that generates high pore water pressures within the sediments. The soil type most susceptible to liquefaction is loose, cohesionless, granular soil below the water table and within about 50 feet of the ground surface. The project site is designated as having high to very high liquefaction susceptibility (Association of Bay Area Governments Earthquakes and Hazards Program, website accessed January 2015).

We evaluated the liquefaction potential at the site based on standard penetration test results from exploratory borings and laboratory test data, and estimated the potential post-liquefaction settlement at each of the locations. The design earthquake is based on ground motion parameters for events with a 10 percent probability of occurrence in 50 years; the contributing faults are the San Andreas fault with M of 7.9 and peak ground acceleration (PGA) of 0.56 g and the Hayward fault with M of 7.1 and PGA of 0.63 g. The PGA of 0.63 g used in the liquefaction analysis meets the minimum requirements of Section 11.8.3 of ASCE 7-10. A groundwater depth of 13 feet below top of explorations was used in the analysis, which resulted in estimated post liquefaction settlement of about 2 inches.

## BURIED UTILITIES

Based on as-built information, a 36-inch diameter pipe connected to the effluent suction pump is located across approximately the middle of the site. The invert of the pipeline varies from Elevation -9.0 to -12.0 feet; the bottom of the original trench is estimated to be about 26 to 28 feet below existing ground surface. We understand the City intends to leave the pipeline in place and will decommission the pipeline in the future.

## DISCUSSION

The primary geotechnical concerns at the proposed air compressor building site are the presence of undocumented fills encountered in both borings (depths of 9 and 11½ feet bgs), loose sand susceptible to liquefaction encountered below the fill, and the existing 36-inch-diameter pipeline that traverses the site. Although compaction records are unavailable, field and laboratory tests suggest the fill material is well-compacted; as such, in AECOM's opinion, the fill is expected to be capable of supporting the mat foundation in its current condition. This opinion is predicated on the Geotechnical Engineer being present during site grading to confirm the nature and consistency of the existing fills across the building footprint. The likely consequence of liquefaction in the sand layers below the fill is liquefaction

induced settlement estimated to be on the order of 2 inches. However, the relatively thick fill section should help distribute deflection across the mat foundation and reduce potential differential settlement manifesting on the finish grade. We understand the existing 36-inch pipeline is to remain below the building. This pipeline will be subject to additional load due to the weight of the new building; evaluation of the effects of this load on the pipeline are beyond the scope of this study.

## GEOTECHNICAL RECOMMENDATIONS

### Mat Foundations

*Bearing Pressures and Estimated Settlement* - Mat foundations have been used successfully at the RWF to support existing tanks and lightly loaded structures. Based on available subsurface data, AECOM anticipates the proposed mat foundation would be feasible for support of the air compressor building. Foundations should be designed for maximum allowable bearing pressures of 2,000 psf for dead loads, 3,000 psf for dead plus live loads, and 4,000 psf for total loads including wind or seismic. The recommendations are based on foundations bearing on well-compacted engineered fill. The foundation should be embedded at least 12 inches below lowest adjacent finish grade.

We estimate that long-term consolidation settlement will be about  $\frac{1}{4}$  to  $\frac{1}{2}$  inch and that immediate elastic settlement will be on the order of about  $\frac{1}{4}$  inch; these settlement estimates were computed at the center of the mat foundation having plan dimensions of 43.33 by 33.33 feet and finish floor at Elevation 13.0 as shown in preliminary plans (CH2M HILL, August 28, 2015). A uniform dead plus real live load bearing pressure of 520 psf was assumed. Post-construction differential settlement across the mat foundation is expected to be less than  $\frac{1}{4}$  inch due to static settlement and less than 1 inch due to post-liquefaction settlement. Flexible piping connections could be considered to accommodate the anticipated foundation settlement.

*Subgrade Modulus* - A modulus of subgrade reaction,  $K_{v1}$ , of 150 pounds per cubic foot is recommended for design of the mat foundation supported on well-compacted engineered fill. This value should be reduced proportionately by the width of the foundation to determine the value of  $K_v$  for use in finite element computer modeling.

*Resistance to Lateral Loads* - Resistance to transient lateral loads from wind or earthquakes can be developed by adhesion acting along the sides and bottom of mat foundation parallel to the direction of lateral loading, and passive pressure of the material perpendicular to the direction of lateral loading. Based on the predominantly cohesive fill soils encountered, we recommend an ultimate adhesion value of 800 psf be used along the sides of the mat cast neat against undisturbed soil or well-compacted engineering fill and a uniform passive pressure of 1,000 psf. The upper 1 foot of embedment should be neglected in determining resistance due to side adhesion and passive pressure in landscape areas. These values are ultimate and should be used with an appropriate factor of safety, with estimated movement on the order of approximately  $\frac{1}{2}$  inch to mobilize full passive resistance.

### Retaining Walls

At this time, a wall is planned along the southern portion of the air compressor building to retain the existing fill and to accommodate a sidewalk access on the west side of the building. The top of wall is expected to be at Elevation 17.67 feet, with the height of retained fill of about 5 feet. The following recommendations would also be applicable for design of loading docks and at-grade landscape walls if

they are to be part of the planned construction. This section presents general recommendations for below grade wall design.

Static Lateral Earth Pressures - We recommend that walls which are to be free to deflect at the top (cantilever walls) be designed for an active earth pressure equivalent to a fluid weighing 40 pounds per cubic foot (pcf). Walls restrained from movement at the top should be designed for an at-rest equivalent fluid pressure of 60 pcf, assuming granular backfill. These recommendations assume that the walls are drained so that no hydrostatic pressures build up behind the walls. Alternatively, walls could be designed for an undrained condition using an at-rest equivalent fluid pressure of 95 pcf.

The design values recommended above correspond to the earth pressures imposed by the backfill and adjacent natural ground, and hydrostatic pressure where walls are undrained. Lateral earth pressures for walls that contain positively sloping backfill will be higher than those given above. The Geotechnical Engineer should be consulted regarding specific sloping conditions if they are used.

At locations that will be subjected to vehicular traffic within a distance equal to one-half of the wall height, a surcharge pressure equivalent to 2 feet of soil weighing 130 pounds per cubic foot should be applied to the walls to account for the traffic loads. If additional surcharge loads are anticipated near the back of the walls, they can be idealized by a uniform horizontal pressure equal to one-half of the surcharge pressure.

Seismic Loads - Below grade walls will experience increased lateral loads during earthquake shaking. The additional horizontal forces recommended to simulate earthquake loads are dependent upon the magnitude of ground surface acceleration and height of the wall, together with the weight and type of material retained by the wall. We recommend that the magnitude of the dynamic lateral force developed during seismic loading be estimated using the following equation:

$$\Delta P_{ac} = 18 H^2$$

The units of the dynamic lateral force ( $\Delta P_{ac}$ ) are pounds per lineal foot of wall, where H is defined as the height of the wall. We recommend that the dynamic lateral force be applied at the mid-height of the wall and represent the resultant of a rectangular pressure distribution. This applies to both restrained and unrestrained walls and should be assumed to act in addition to the static earth pressures recommended above.

Wall Drainage - If it is desired to prevent the buildup of hydrostatic pressures behind below grade walls, subsurface drainage should be installed. A perforated drain pipe encased in granular filter material should be placed behind the bottom of the wall. The drain pipe should be connected to a free draining outlet or sump pump. To intercept seepage and provide a path for water to reach the subsurface drain, a continuous layer of granular filter material, at least 18 inches thick, should be placed along the back of the wall, up to a depth of 24 inches below the ground surface. A 24-inch-thick layer of impervious soil should be placed over the top of the filter material to minimize the amount of surface infiltration. Except for the layer of granular filter material, backfill behind retaining walls should consist of fill material meeting the requirements for general fill described in Earthwork section of this report. Granular filter material to be used behind retaining walls should conform to the gradation for Class 2 Permeable Material, Section 68 of the State of California, Department of Transportation, Standard Specifications (latest edition).

As an alternative to the filter material (Class 2 Permeable), a prefabricated, synthetic multi-layer drainage material (such as Miradrain 6000 or approved equivalent) could be used behind the walls. If such a synthetic drain system is used, it should be continuous from the drain pipe to within 24 inches of the ground surface, and capped with compacted impervious soils.

Resistance to Lateral Loads – Recommendations for the building mat foundation are applicable to retaining walls.

### **Slabs-on-Grade**

The mat foundation should be supported on 6 inches of angular crushed rock or gravel underlain by a minimum of 12 inches of select quality engineered fill. The select fill should be non-expansive material having a maximum plasticity index of 15. Engineered fill constructed to support new slab-on-grade floors should be compacted to a minimum relative compaction of 95 percent in accordance with ASTM Test Designation D 1557, latest edition.

Where dampness of floor slabs is to be reduced, interior concrete floor slabs should be constructed on a layer of capillary break material at least 4 inches thick covered by a continuous vapor retarder membrane, such as 10-mil (or thicker) membranes produced by Griffolyn or Stego. The capillary break material should consist of free-draining clean rock or gravel, such as No. 4 by ¾-inch permeable aggregate complying with Caltrans Standard Specification, Section 68, Class 1 Type B Permeable Material. Crushed rock used as capillary break material can be considered part of the recommended 24-inch select engineered fill section. Seating of the rock with a vibratory plate compactor may aid in reducing the potential for damage to the vapor barrier due to rock punctures as the reinforcing strands and the concrete are placed. Recent guidelines from the American Concrete Institute advise construction of the slab directly on the vapor retarder and the omission of the granular “blotter” layer that has been common practice in the past.

### **California Building Code**

Based on the upper 100 feet of the soil profile in borings at the RWF, the site can be classified as Site Class “D” according to Section 1613 of the 2013 California Building Code.

Utilizing USGS Seismic Hazard Curves, Response Parameters and Design Parameters application, we estimate the following mapped spectral accelerations for the project site:

- Mapped spectral accelerations for short periods,  $SS = 1.5$
- Mapped spectral accelerations for a 1-second period,  $S1 = 0.6$

Based on Tables 1613.3.3 (1) and 1613.3.3 (2), the values of site coefficients  $F_a$  and  $F_v$  for a Site Class “D” are as follows:

- $F_a = 1.0$
- $F_v = 1.5$

### **Site Earthwork**

All earthwork should be done under the direct observation of the Geotechnical Engineer and in accordance with the following recommendations.

Site Preparation - Areas of new construction should be stripped and cleared of grass, trees, root balls, and debris. At the time of our investigation, we estimated that a stripping depth of 2 to 4 inches would be required at the site. The Geotechnical Engineer should review the final depths of stripping and clearing during the site preparation. Materials resulting from clearing and stripping operations should be removed from the site. The stripped soil materials should not be used as compacted fill or blended with other materials, unless otherwise approved by AECOM' Geotechnical Engineer. After the site has been properly prepared, the Geotechnical Engineer should review the conditions before any further earthwork is performed.

Subgrade Preparation – In areas to receive new fill, the exposed surface soils should be scarified to a minimum depth of 8 inches, moisture conditions and recompacted. A minimum relative compaction of 92 percent should be attained in the subgrade. If loose, soft or unstable soils are encountered at the base of excavations, stabilization should be accomplished using bridging material consisting of a combination of Mirafi 600X (or equivalent) geotextile stabilization fabric covered by a coarse angular stabilization material. The stabilization material should consist of a well-graded mixture of gravel and cobble-sized rock fragments conforming to the following gradation and material requirements:

Sieve Size (inches)	Percentage Passing
6	100
2	0 – 50
¾	0 – 10
Durability Index: 25 minimum	

The bridging material should be covered with geotextile fabric, extending along the sides of the bridging material to a depth of at least 6 inches; alternatively the bridging material should be covered with a 2-inch thick layer of coarse aggregate consisting of either Caltrans Class 2 aggregate base or coarse aggregate conforming to the general requirements of ASTM C33 material, Size No. 6, ¾ to ¾ inch. The imported bridging material and coarse aggregate should be approved by the Geotechnical Engineer prior to importing and placing it on the project site. The required thickness of the bridging layer will depend on the actual conditions encountered at each location and should be determined by the Geotechnical Engineer in the field. After the stabilization fabric has been placed on the base of the excavation surface, the stabilization material should be track-walked into place over the fabric and densified with vibratory compaction equipment. The Contractor's proposed method of compacting bridging material should be reviewed and approved by the Geotechnical Engineer.

Fill Materials – All general fill material should be a soil or soil-rock mixture that is free of organic matter and other deleterious substances. It should not contain rocks or lumps over 6 inches in the greatest dimension, and not more than 15 percent larger than 2½ inches. The existing lean clay fills that blanket the site are suitable for reuse as general fill.

Import fill material should be a low plasticity, non-expansive soil or soil-rock mixture of select quality having a PI not greater than 15. The Geotechnical Engineer should approve any fill that is imported for use as select engineered fill.

Fill Placement and Compaction – Fill material should be spread in uniform lifts not exceeding 8 inches in uncompacted thickness where heavy equipment is used, and not more than 4 inches where light, hand-operated compactors are used. Before compaction begins, the fill should be brought to a moisture

content that will permit proper compaction by either aerating the material if it is too wet, or spraying the material with water if it is too dry. Each lift should be thoroughly mixed before compaction to provide a uniform distribution of water content. To prevent drying of the subgrade soils, placement of fill should start immediately after the surface preparation and should proceed in a continuous operation until the site is brought to grade.

All fill material should be compacted to a minimum relative compaction of 95 percent based on ASTM D1557, and at a moisture content near optimum moisture content.

Underground Utility Trenches – For purposes of this section, bedding is defined as material placed in a trench up to 1 foot above a utility pipe and backfill is all material placed in the trench above the bedding.

Unless concrete bedding is required around utility pipes, free-draining sand should be used as bedding. Sand proposed for use as bedding should be tested to verify its suitability and to establish its compaction characteristics. Sand bedding should have a pH between 6 and 8. It should be compacted by mechanical means to achieve at least 90 percent relative compaction based on ASTM D1557.

Approved import material may be used as utility trench backfill. Proper compaction of trench backfill will be necessary under and adjacent to structural fill, building foundations, concrete slabs and vehicle pavements. In these areas, backfill should be conditioned with water (or allowed to dry) to produce a soil-water content ranging between optimum and 2 percent above the laboratory optimum moisture content. All backfill should be placed in horizontal layers not exceeding 8 inches in thickness (before compaction). Each layer should be compacted to 90 percent relative compaction based on ASTM D1557. The upper 8 inches of pavement subgrade should be compacted to 95 percent relative compaction based on ASTM D1557.

The Contractor should consider use of slurry for bedding and backfill where pipes are stacked, trenches are narrow, or in other areas where compaction around pipes is difficult to achieve.

Where any trench crosses the perimeter foundation line, the trench should be completely plugged and sealed with compacted lean clay soil for a horizontal distance of at least 2 feet on either side of the foundation.

The attention of Contractors, particularly the Underground Contractor, should be directed to the requirements of California Code of Regulations, Title 8, Construction Code Section 1540 regarding Safety Orders for “Excavations, Trenches, Earthwork.”

## **CONSTRUCTION CONSIDERATIONS**

Safety standards set by OSHA limit the height of unshored vertical excavations to 5 feet if construction personnel will be working in excavations. Bases on the soil type, depth, duration the excavation is open, and sequence of soils exposed in excavation, OSHA recommends maximum allowable slopes. The soils encountered in upper 10 feet are generally clayey and correspond to OSHA Types A and B soil. On this basis, we recommend temporary slopes be cut at a slope no steeper than 1:1 (horizontal to vertical) for heights of 10 feet or less.

Groundwater was encountered at depths of 13 to 19 feet. It is anticipated construction excavations will be above these levels. However, the Contractor should be prepared for groundwater removal during

rainy seasons as surface water runoff could collect in excavations. Considering the predominantly cohesive nature of the near surface soils to a depth of about 10 feet, we anticipate that dewatering can be accomplished using standard sumping procedures.

## **LIMITATIONS**

The opinions, conclusions and recommendations contained in this memorandum are based upon information obtained from exploratory borings made at widely spaced locations. They are also based upon existing information, local experience, and engineering judgment.

If any variations or undesirable soil conditions are encountered during construction, or if the proposed construction will differ from that proposed at the present time, we should be notified so that supplementary recommendations can be provided, if necessary. The Geotechnical Engineer should review the foundation and grading plans, and the specifications, prior to bidding and construction. The recommendations presented in this memorandum are predicated on the condition that all earthwork, grading, and foundation construction will be performed under the observation of an AECOM representative.

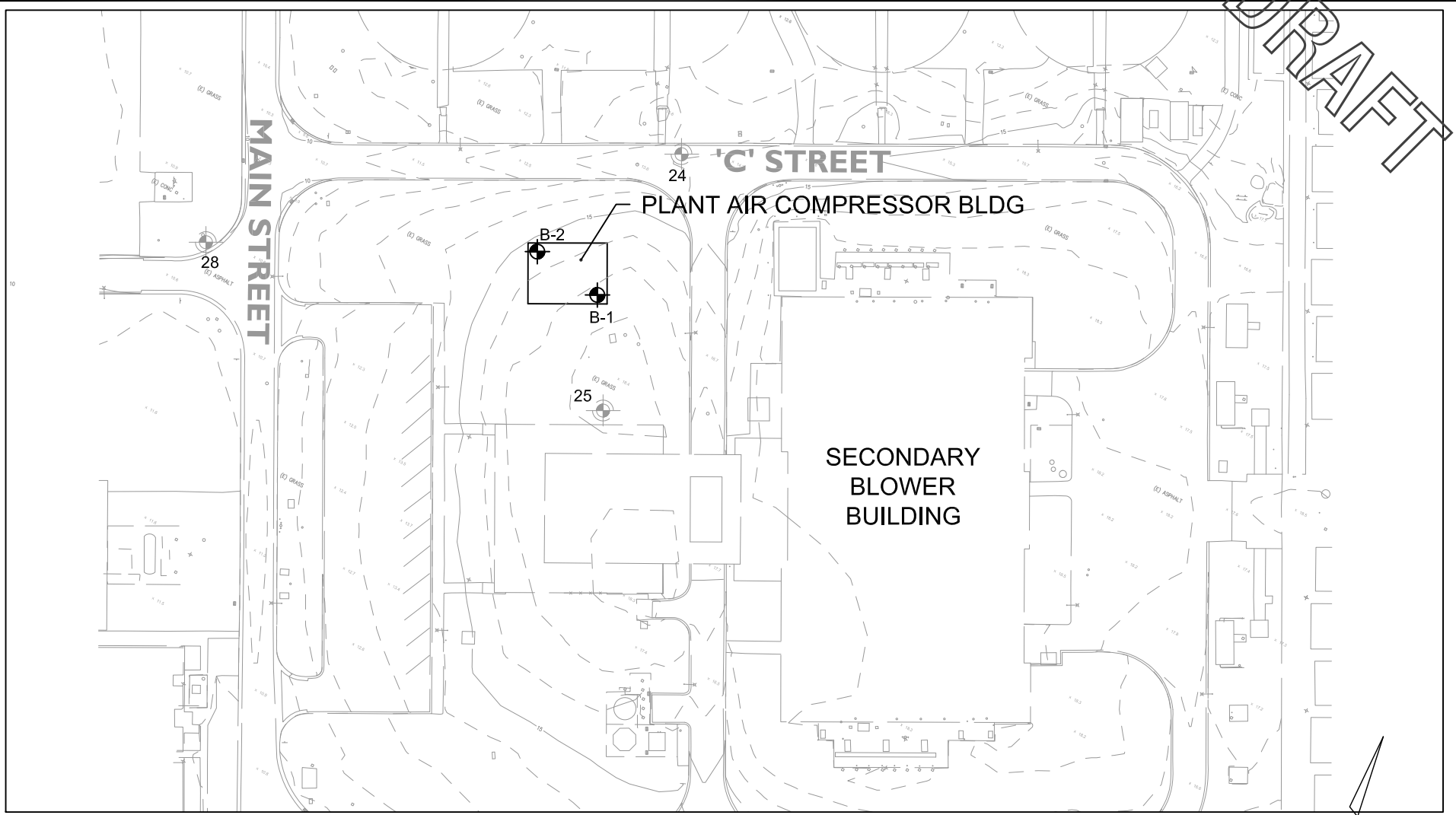
Evaluation of the effect of building loads on the underlying 36-inch-diameter pipeline is beyond the scope of this study.

The recommendations presented in this memorandum were developed with the standard of care commonly used in this profession. No other warranties are included, either expressed or implied, as to the professional advice provided herein.



File:

DRAFT



LEGEND

⊕ B-1 Approximate Boring Location for this Study

⊕ 24 Approximate Boring Location for 1961 Study



**AIR COMPRESSOR BUILDING**  
 San Jose/Santa Clara RWF  
 San Jose, California

**SITE AND BORING LOCATION PLAN**

SCALE  
 Figure  
**1**  
 September 2015

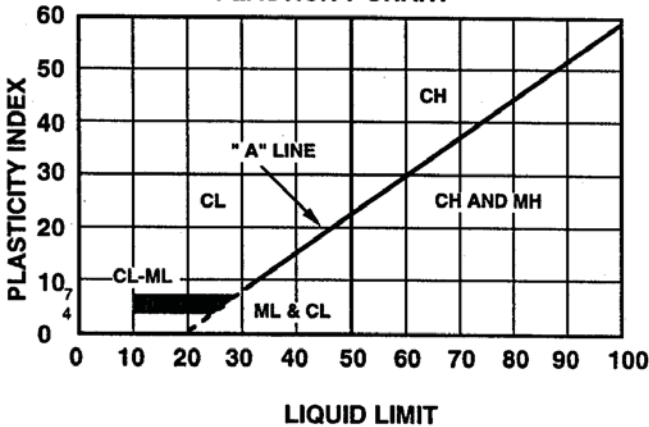


# SAMPLE CLASSIFICATION CHART

DRAFT

UNIFIED SOIL CLASSIFICATION SCHEME			
MAJOR DIVISIONS	SYMBOLS	TYPICAL NAMES	
<b>COARSE GRAINED SOIL</b> (More than 1/2 of soil >no. 200 sieve size)	<b>GRAVELS</b>		
	(More than 1/2 of coarse fraction > no. 4 sieve size)	GW	Well-graded gravels and gravel-sand mixtures, little or no fines
		GP	Poorly graded gravel or gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	<b>SAND</b>		
	(More than 1/2 of coarse fraction < no. 4 sieve size)	SW	Well-graded sands or gravelly sands, little or no fines
		SP	Poorly-graded sands or gravelly sands, little or no fines
	SM	Silty sands, sand-silt mixtures	
	SC	Clayey sands, sand-clay mixtures	
<b>FINE GRAINED SOIL</b> (More than 1/2 of soil <no. 200 sieve size)	<b>SILTS &amp; CLAYS</b>		
	Liquid Limit < 50	ML	Inorganic silts and very fine sands, rock flour, silty or clayey, fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
	<b>SILTS &amp; CLAYS</b>		
	Liquid Limit > 50	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays	
	OH	Organic clays of medium to high plasticity, organic silts	
<b>HIGHLY ORGANIC SOILS</b>	Pt	Peat and other highly organic soils	

**PLASTICITY CHART**



GRAIN SIZE CLASSIFICATION		
CLASSIFICATION	RANGE OF GRAIN SIZES	
	U.S. Standard Sieve Size	Grain Size in Millimeters
<b>BOULDERS</b>	Above 12"	Above 305
<b>COBBLES</b>	12" to 3"	305 to 76.2
<b>GRAVEL</b> coarse (c) fine (f)	3" to No. 4 3" to 3/4" 3/4" to No. 4	76.2 to 4.76 76.2 to 19.1 19.1 to 4.76
<b>SAND</b> coarse (c) medium (m) fine (f)	No. 4 to No. 200 No. 4 to No. 10 No. 10 to No. 40 No. 40 to No. 200	4.76 to 0.074 4.76 to 2.00 2.00 to 0.420 0.420 to 0.074
<b>SILT &amp; CLAY</b>	Below No. 200	Below 0.074

**MOISTURE CONTENT**

<b>DRY</b>	-No sign of water and soil dry to touch
<b>MOIST</b>	-Signs of water and soil is relatively dry to touch
<b>WET</b>	-Signs of water and soil definitely wet to touch; granular soil exhibits some free water when densified

**SOIL CONSISTENCY/RELATIVE DENSITY**

SILT, SAND AND GRAVEL	BLOWS/FT	SILT OR CLAY	UNCONFINED COMPRESSIVE STRENGTH (psf)	THUMB PENETRATION
Very loose	<4	Very Soft	< 500	Very easily - inches
Loose	5-10	Soft	500 - 1000	Easily - inches
Medium Dense	11-30	Medium (firm)	1000 - 2000	Moderate effort - inches
Dense	31-50	Stiff	2000 - 4000	Indented easily
Very Dense	>50	Very Stiff	4000 - 8000	Indented by nail
		Hard	> 8000	Difficult by nail

**CLASSIFICATION MODIFIERS**

TRACE	0 - 12%
SOME	12 - 30%
± MODIFIERS	



LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
DRILLING CONTRACTOR <b>Exploration Geoservices, Inc.</b>	BOREHOLE LOCATION			Legend
DRILLING METHOD	DRILL RIG			SURFACE ELEVATION
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>Mod Cal (2"), Shelby (2.87"), SPT (1.4")</b>	SPT HAMMER TYPE			BOREHOLE DIAMETER
BOREHOLE BACKFILL AND COMPLETION	GROUNDWATER DURING DRILLING READINGS	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING	
	<b>29 ft</b>	<b>33 ft on</b>	<b>45.0 ft</b>	

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
0	0		Arrow denotes bottom of fill layer.												
1	1														
2	2														
3	3														
4	4														
5	5		2 inch inside diameter Modified California sample.	X											
6	6														
7	7														
8	8		2 inch outside diameter Standard Split Spoon sample (Standard Penetration Test).	X											
9	9														
10	10														
11	11		3 inch outside diameter Shelby tube sample.												
12	12														
13	13														
14	14														
15	15														
16	16		Hydraulic Pressure required to push Shelby tube sampler.											120 psi	
17	17														
18	18														
19	19														
20	20														
21	21		Blow count with 140-lb hammer falling 30 inches for 14 inches of penetration.	X		10 12 50/2"	62/ 8"								
22	22														Sampler advanced 14 in.
23	23														
24	24		Blow count with 140-lb hammer falling 30 inches for 9 inches of penetration.	X		8 50/3"	50/ 3"								
25	25														Sampler advanced 9 in.
26	26														
27	27														
28	28														
29	29		Groundwater level at time of drilling.												
30	30														
31	31														
32	32														
33	33		Groundwater at a time after drilling (as specified).												
34	34														
35	35														
36	36		<b>KEY TO LABORATORY TESTS.</b>												
37	37		PP= Pocket Penetrometer reading in tons per square foot (tsf).									PP = 3.0			
38	38		LL= Liquid Limit (%).												
39	39		PI= Plasticity Index (%).												
40	40		NOTE: PI= LL - (Plastic Limit [%]).												
41	41		+ #4= Percentage of material retained on #4 sieve.												
42	42		- #200= Percentage of material passing #200 sieve.												
43	43														
44	44														
45	45		Bottom of Borehole at 45.0 ft.												

AECOM GENERAL BORING 2015 60439052 RWF AIR COMPRESSOR.GPJ SNJ\_GEN.GLB 9/17/15

100 W. San Fernando Street, Suite 200 San Jose, CA 95113			REPORT TITLE <b>BORING RECORD</b>		HOLE ID <b>Legend</b>
STATE <b>CA</b>	COUNTY <b>Santa Clara</b>	FACILITY <b>SJ/SC RWF</b>	PROJECT NO. <b>60439052</b>		
PROJECT NAME <b>RWF Air Compressor Upgrade</b>					
PREPARED BY		CHECKED BY		DATE	SHEET <b>1 of 1</b>



LOGGED BY <b>AM Moore</b>	BEGIN DATE <b>8-24-15</b>	COMPLETION DATE <b>8-24-15</b>	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID <b>B-1</b>
DRILLING CONTRACTOR <b>Exploration Geoservices, Inc.</b>			BOREHOLE LOCATION	SURFACE ELEVATION <b>17 ft</b>
DRILLING METHOD <b>Hollow-Stem Auger</b>			DRILL RIG <b>Mobile B61</b>	BOREHOLE DIAMETER <b>8 in.</b>
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>Mod Cal (2"), SPT (1.4")</b>			SPT HAMMER TYPE <b>Safety, 140 lb, 30-inch</b>	HAMMER EFFICIENCY, % <b>60%</b>
BOREHOLE BACKFILL AND COMPLETION <b>Lean concrete</b>			GROUNDWATER DURING DRILLING READINGS <b>18 ft</b>	AFTER DRILLING (DATE) <b>19.5 ft on 8-24-15</b>
				TOTAL DEPTH OF BORING <b>40.0 ft</b>

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
0	0		SANDY lean CLAY (CL); hard; light brownish gray; moist; friable, rootlets, slightly porous, FILL.		1	11	55	33							
15.00	2					28				9	106				
13.00	3		At EL. 14.0 ft, becomes reddish brown; occasional rock fragments.		2	41		33							
	4					50									Sampler advanced 12 in.
11.00	5														
	6		At EL. 11.0 ft, with yellowish brown Silty SAND (SM) at 7-1/2 feet..		3	8	50	44							
	7					29				16	107				
	8					21									
9.00	9														
	10		At EL. 7.0 ft, grades to stiff to very stiff; reddish brown mottled with yellowish brown; trace GRAVEL.		4	6	21	67				PP = 3.5			
	11					8									
	12		Lean CLAY (CL); very stiff; gray; moist.			13									
5.00	13					16									
	14		At EL. 3.5 ft, becomes very stiff to hard; trace GRAVEL; with SAND lenses.		5	13	35	67		13	118	PP = 4.0			
3.00	15					19									
	16														
1.00	17														
	18		SILTY SAND (SM); loose; dark gray; wet; trace fines.												
-1.00	19				6	3	11	67							
	20					5									
	21					6									
-3.00	22		At EL. -4.0 ft, grades to (Poorly graded SAND with SILT) (SP-SM); medium dense; wet; little GRAVEL.		7	9	22	83							
	23					11									
	24		At EL. -7.0 ft, becomes (Poorly graded SAND) (SP); dense; some GRAVEL.		8	17	40	67							
	25					19									
						21									

(continued)

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REPORT TITLE <b>BORING RECORD</b>			HOLE ID <b>B-1</b>
STATE <b>CA</b>	COUNTY <b>Santa Clara</b>	FACILITY <b>SJ/SC RWF</b>	PROJECT NO. <b>60439052</b>
PROJECT NAME <b>RWF Air Compressor Building</b>			
PREPARED BY <b>S. Huang</b>		CHECKED BY <b>A. Moore</b>	DATE <b>8-24-15</b>
			SHEET <b>1 of 2</b>



AECOM GENERAL BORING 2015 60439052 RWF AIR COMPRESSOR.GPJ SNJ\_GEN.GLB 9/22/15

DRAFT

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
-9.00	25		Poorly graded SAND with SILT (SP-SM) (continued).												
-11.00	27		SANDY lean CLAY (CL); medium stiff; reddish brown mottled with gray; moist.												
	28														
	29		At EL. -11.5 ft, becomes stiff to very stiff.	X	9	3 5 7	12	67				PP = 1.0-1.5			
-13.00	30		Lean to fat CLAY (CL/CH); stiff; moist.							27	93				
-15.00	31														
-17.00	32														
	33														
-19.00	34		At EL. -17.0 ft, becomes very stiff.	X	10	10 15 18	33	67				PP = 2.75			
	35									20	110				
-21.00	36														
	37														
-23.00	38														
	39														
	40		Bottom of Borehole at 40.0 ft.	X	11	11 14 20	34	67		30	93	PP = 2.0 TV = 1.0			
	41														
-25.00	42														
	43														
-27.00	44														
	45														
-29.00	46														
	47														
-31.00	48														
	49														
-33.00	50														
	51														
-35.00	52														
	53														
-37.00	54														
	55														

AECOM GENERAL BORING 2015 60439052 RWF AIR COMPRESSOR.GPJ SNJ\_GEN.GLB 9/22/15

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San Jose, CA 95113



REPORT TITLE <b>BORING RECORD</b>			HOLE ID <b>B-1</b>	
STATE <b>CA</b>	COUNTY <b>Santa Clara</b>	FACILITY <b>SJ/SC RWF</b>	PROJECT NO. <b>60439052</b>	
PROJECT NAME <b>RWF Air Compressor Building</b>				
PREPARED BY <b>S. Huang</b>		CHECKED BY <b>A. Moore</b>		DATE <b>8-24-15</b>
				SHEET <b>2 of 2</b>

LOGGED BY <b>AM Moore</b>	BEGIN DATE <b>8-24-15</b>	COMPLETION DATE <b>8-24-15</b>	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID <b>B-2</b>
DRILLING CONTRACTOR <b>Exploration Geoservices, Inc.</b>			BOREHOLE LOCATION	SURFACE ELEVATION <b>16 ft</b>
DRILLING METHOD <b>Hollow-Stem Auger</b>			DRILL RIG <b>Mobile B61</b>	BOREHOLE DIAMETER <b>8 in.</b>
SAMPLER TYPE(S) AND SIZE(S) (ID) <b>Mod Cal (2"), SPT (1.4")</b>			SPT HAMMER TYPE <b>Safety, 140 lb, 30-inch</b>	HAMMER EFFICIENCY, % <b>60%</b>
BOREHOLE BACKFILL AND COMPLETION <b>Lean concrete</b>			GROUNDWATER DURING DRILLING READINGS <b>13 ft</b>	AFTER DRILLING (DATE) <b>16.5 ft on 8-24-15</b>
				TOTAL DEPTH OF BORING <b>44.5 ft</b>

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
0	0		SANDY lean CLAY (CL); hard; brown; moist; porous, rootlets.		1	10	30	44				PP = 4.5			
14.00	2					12	30								
	3					18									
12.00	4		At EL. 12.0 ft, grades to reddish brown; trace GRAVEL.		2	29	44	44		11	97				
	5					27									
	6					17									
10.00	7				3	7	23	67		15	96	PP = 4.5			
	8					9									
	9					14									
8.00	10		Lean CLAY (CL); very stiff; dark gray; moist; trace SAND.		4	6	30	67		22	101	PP = 2.75			
	11					12									
	12					18									
4.00	13		SILTY SAND (SM); medium dense; brown; wet.		5	5	15	83				TV = 0.2			
	14					7									
	15					8									
2.00	16		Poorly graded SAND with SILT (SP-SM); medium dense; dark gray; wet.		6	7	22	67							
	17					9									
	18					13									
-2.00	19														
	20														
	21		At EL. -4.5 ft, becomes coarser grained.		7	10	17	50							
	22					10									
	23					10									
-6.00	24		Lean CLAY (CL); very stiff; olive brown; moist.		8	7	16	100				PP = 2.75			
	25					6									
						10									

(continued)

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REPORT TITLE <b>BORING RECORD</b>			HOLE ID <b>B-2</b>
STATE <b>CA</b>	COUNTY <b>Santa Clara</b>	FACILITY <b>SJ/SC RWF</b>	PROJECT NO. <b>60439052</b>
PROJECT NAME <b>RWF Air Compressor Building</b>			
PREPARED BY <b>S. Huang</b>	CHECKED BY <b>A. Moore</b>	DATE <b>8-24-15</b>	SHEET <b>1 of 2</b>

DRAFT

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
-10.00	26		Lean CLAY (CL) (continued).												
-12.00	28		At EL. -12.0 ft, with some SAND.												
-14.00	30			X	9	6 6 14	20	67		25	100	PP = 1.0-1.5			
-18.00	34		Lean to fat CLAY (CL/CH); very stiff; olive brown mottled with black streaks; moist.	X	10	7 17 18	35	100		24	102	PP = 2.5-3.5			
-24.00	40			X	11	7 8 11	19	100		29	95	PP = 2.25			
-26.00	42		SILTY SAND (SM); dense; black; wet.												
-28.00	44			X	12	13 29 26	55	83		23	102				
	45		Bottom of Borehole at 44.5 ft.												

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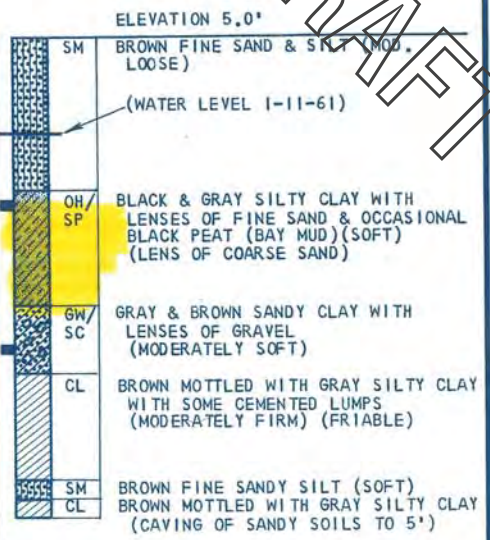
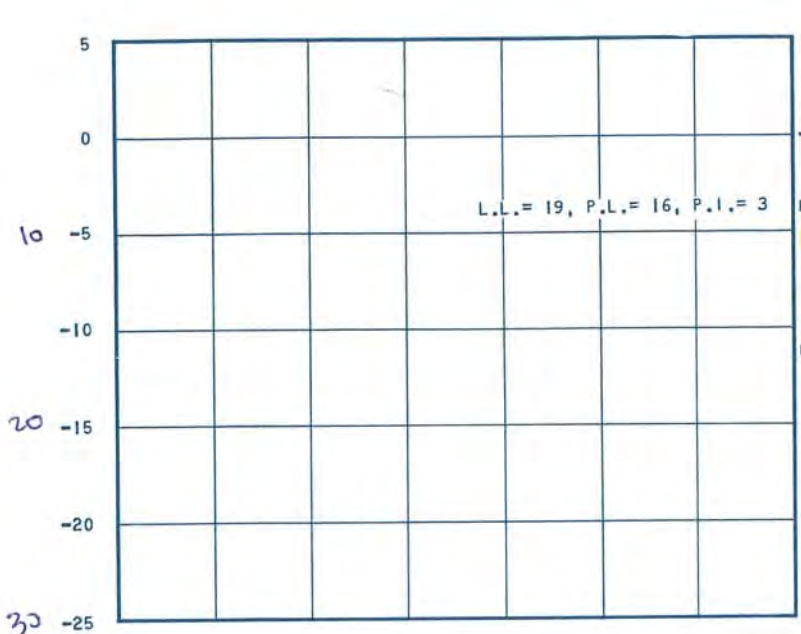


REPORT TITLE <b>BORING RECORD</b>			HOLE ID <b>B-2</b>	
STATE <b>CA</b>	COUNTY <b>Santa Clara</b>	FACILITY <b>SJ/SC RWF</b>	PROJECT NO. <b>60439052</b>	
PROJECT NAME <b>RWF Air Compressor Building</b>				
PREPARED BY <b>S. Huang</b>		CHECKED BY <b>A. Moore</b>		DATE <b>8-24-15</b>
				SHEET <b>2 of 2</b>

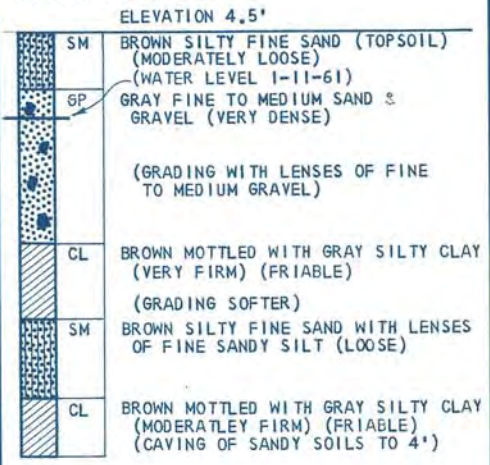
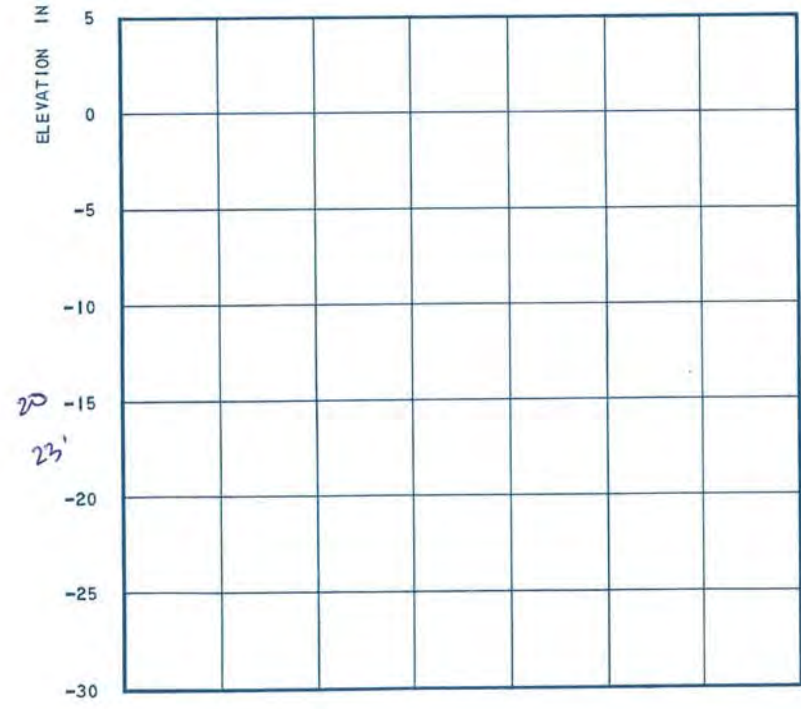


**BORING 24**  
 DRILLED 1-11-61

DRAFT



**BORING 25**  
 DRILLED 1-11-61

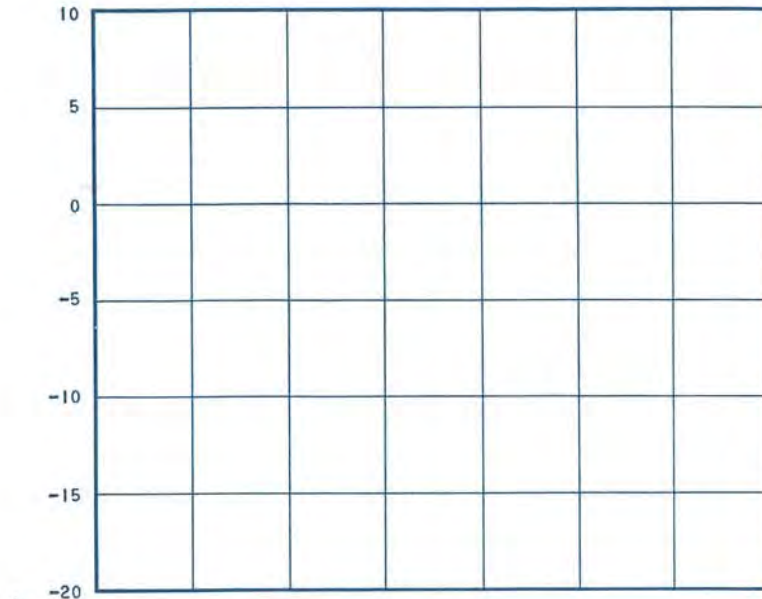


**LOG OF BORINGS**

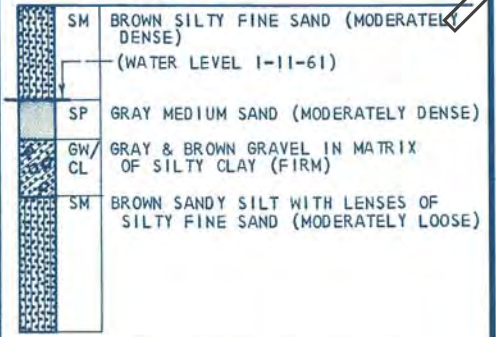


**BORING 28**  
 DRILLED 1-11-61

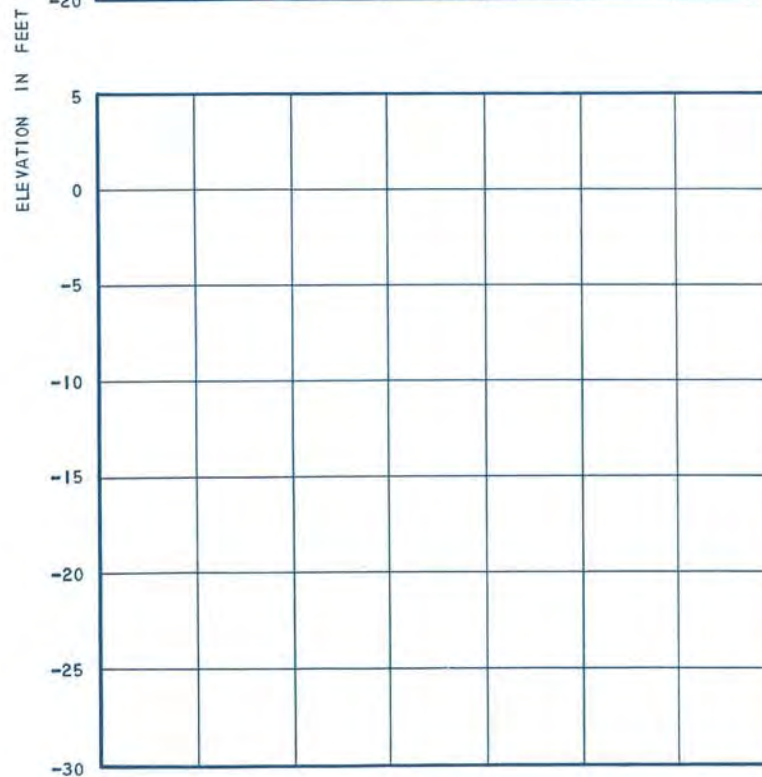
**DRAFT**



ELEVATION 6.0'

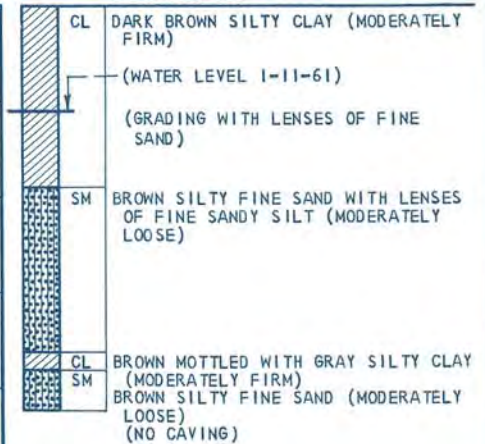


(CAVING OF SANDY SOILS)



**BORING 29**  
 DRILLED 1-11-61

ELEVATION 5.0'



**LOG OF BORINGS**