SUNNYVALE WATER POLLUTION CONTROL PLANT MASTER PLAN – SECONDARY EFFLUENT PIPELINE REPLACEMENT PROJECT

Addendum to the Program Environmental Impact Report

Prepared for
City of Sunnyvale

March 2023

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CHAPTER 1
Background and Purpose of the Addendum

1.1 Background

The City of Sunnyvale (City) owns and operates the Donald M. Somers Water Pollution Control Plant (WPCP), located at 1444 Borregas Avenue in Sunnyvale, Santa Clara County (refer to **Figure 1**). The WPCP provides treatment of wastewater flows and loads from domestic, commercial, and industrial sources in Sunnyvale, Rancho Rinconada, and Moffett Field. The WPCP includes an approximately 16.6-acre main plant and two oxidation ponds[1] that occupy about 436 acres in total. The WPCP was originally constructed in 1956. With the enactment of the Clean Water Act in 1972, more restrictive water quality standards were established, leading to expansion of and process upgrades to the WPCP. Currently, the WPCP processes about 13.5 million gallons per day (mgd) on an annual basis. The surrounding dry land area is primarily used for industrial and recreational purposes: the Sunnyvale Materials Recovery and Transfer Station (SMaRT Station) and the former Household Hazardous Waste Drop-off Site ("Recycle Yard") on Carl Road abut the main plant to the east and south, respectively; the closed Sunnyvale Landfill (traversed by numerous trails) borders these facilities. The Sunnyvale West Channel forms the main plant's western boundary; the Sunnyvale East Channel borders the landfill further east. Caribbean Drive runs east-west along the southern edge of the Sunnyvale Landfill. The San Francisco Bay Trail borders the WPCP to the west and north, and an existing entrance to the Bay Trail and a parking area are located at the west end of Carl Road.[2]

The City was the lead agency for the Sunnyvale Water Pollution Control Plant Master Plan Program Environmental Impact Report (PEIR; State Clearinghouse No. 2015062037).[3] The City adopted the PEIR for the WPCP Master Plan and approved implementation of the WPCP Master Plan on August 23, 2016. The PEIR evaluated potential environmental impacts that could occur as a result of implementing the Master Plan, and provided applicable mitigation to reduce the intensity of potential environmental impacts. As part of Master Plan approval, the City adopted a Mitigation Monitoring and Reporting Program.

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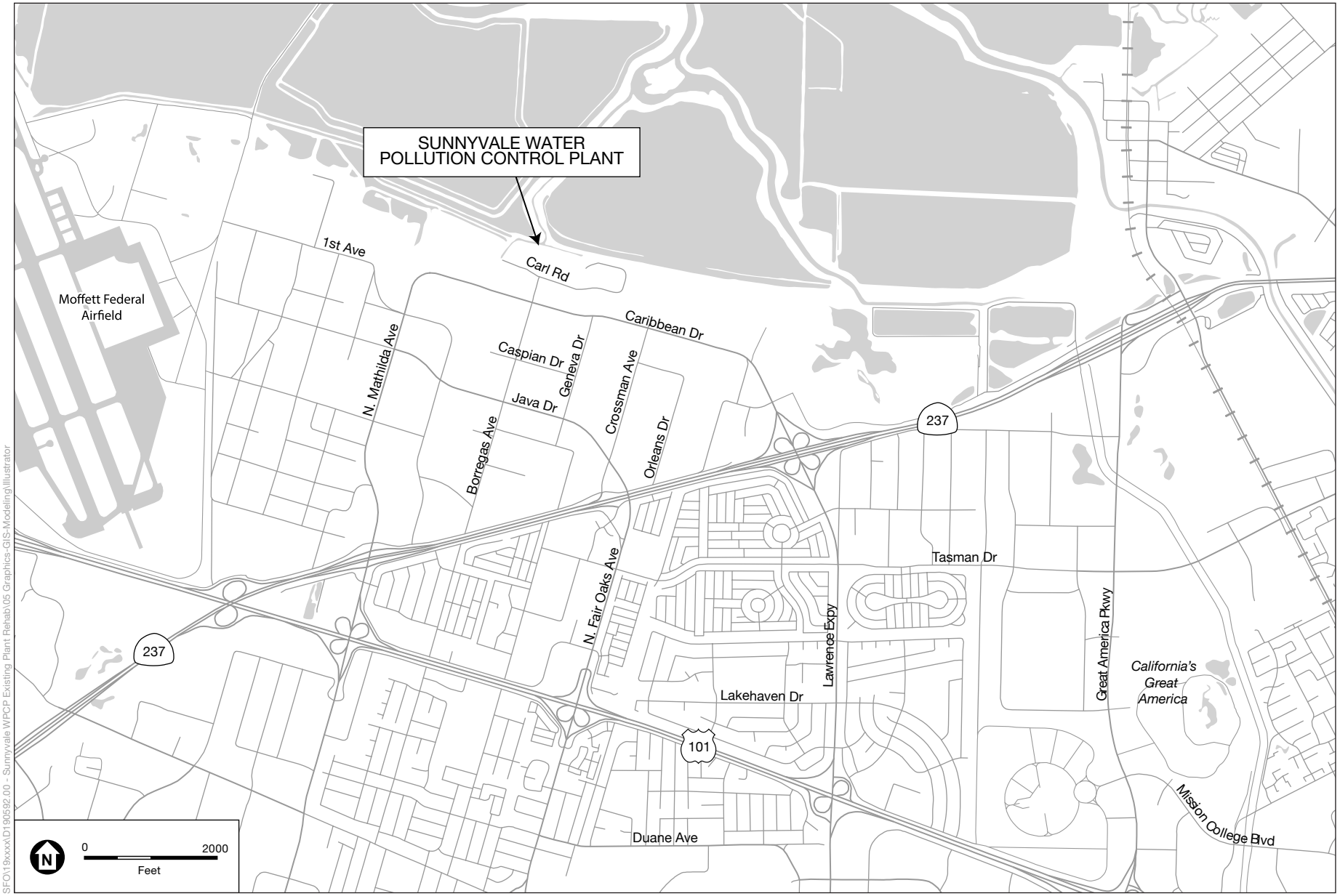
1 The oxidation ponds provide biological oxidation of soluble organic material and physical removal of suspended solids that remain in the wastewater after primary clarification. The ponds also play an important role in the conversion of ammonia to nitrate for 2-3 months during the summer. Their large storage capacity provides a means for equalizing the flow of wastewater to the downstream unit processes, and for storing water to allow reduced (or zero) flow rate to the downstream processes for maintenance or other purposes.

2 As part of a separate Master Plan project, the Bay Trail trailhead and parking will be relocated to Caribbean Drive.

3 City of Sunnyvale, Sunnyvale Water Pollution Control Plant Master Plan Program Environmental Impact Report, adopted August 23, 2016. The PEIR can be accessed online at http://www.sunnyvalecleanwater.com/program-environmental-impact-report.



SOURCE: Thomas Brothers; ESA

Sunnyvale Secondary Effluent Pipeline Replacement

Figure 1
Site Location Map

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As part of the Master Plan process the City identified the need to rehabilitate or replace aging facilities to ensure that the WPCP will reliably continue to meet health and safety and water quality standards. The City previously proposed to rehabilitate the existing 60-inch primary effluent pipeline from the main plant to the pond recirculation channel (also called the pond return channel) and the existing 36-inch secondary effluent pipeline from the oxidation ponds to the fixed growth reactor distribution structure. The Master Plan noted that rehabilitation of the existing primary effluent pipeline would include either sliplining or placing cure-in-place pipe within the existing pipeline, but because sliplining would require a more extensive footprint, it was conservatively assumed as the rehabilitation method in the analyses. Following certification of the Master Plan PEIR and approval of the Master Plan, the City proceeded with design of rehabilitation of existing facilities.

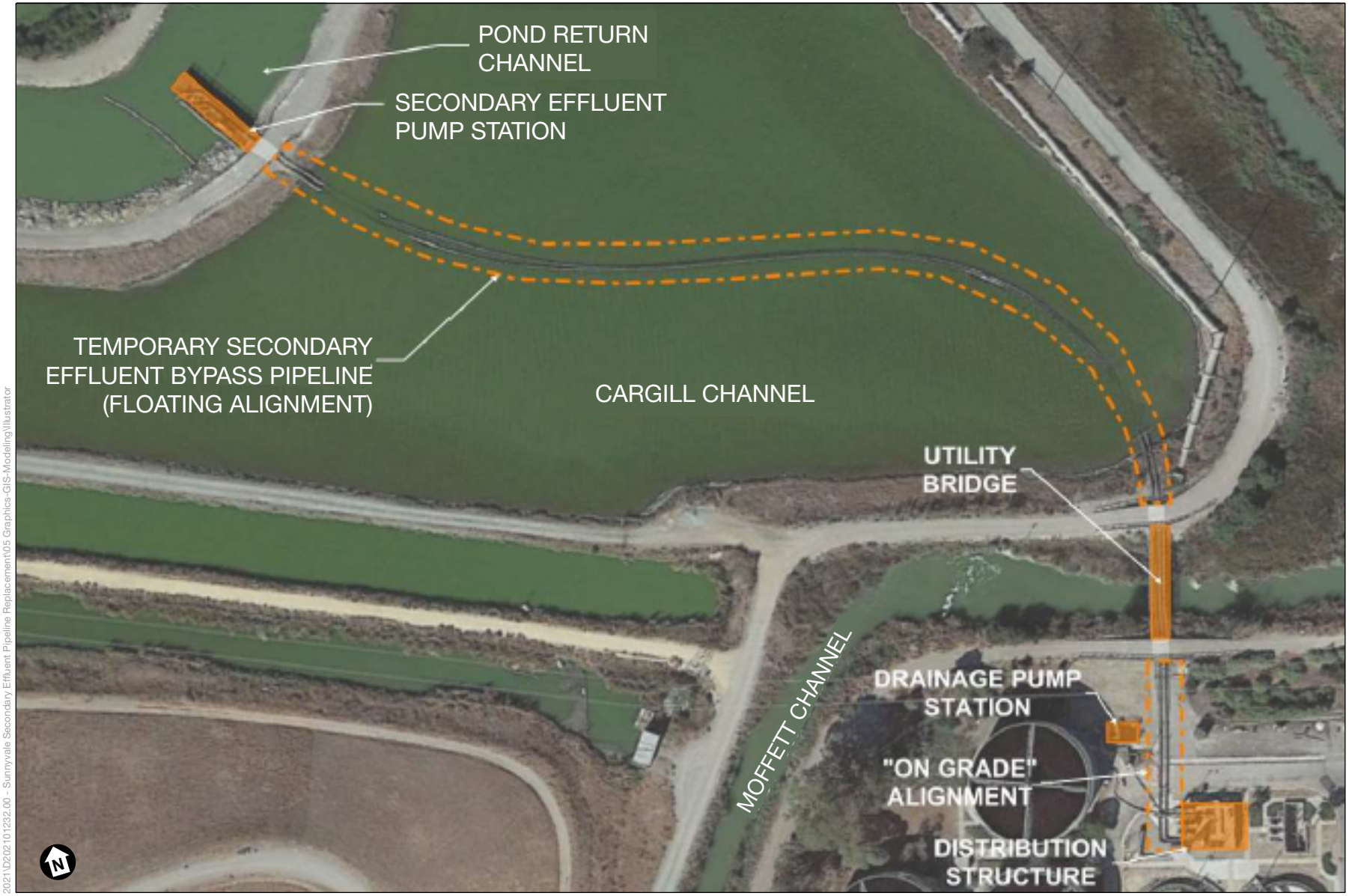
1.1.1 Emergency Repairs and Proposed Project

In 2020, WPCP Operators observed an active boil in the Cargill Channel, a non-tidal water body enclosed by levees and part of the Don Edwards National Wildlife Refuge, indicating that the secondary effluent pipeline was leaking partially treated wastewater from the oxidation ponds (treatment ponds) into the channel and required immediate action by the City.[4] Emergency repair activities were completed and were intended to be temporary while a long-term solution was designed. The emergency repairs consisted of installation of a dual 24-inch pipeline system which was routed from the pond recirculation channel across Cargill Channel and Moffett Channel via a replacement utility bridge to convey partially treated wastewater back to the main plant for the remainder of the treatment process (refer to **Figure 2**).

After implementing the temporary emergency pipeline repairs, the City proceeded with design of the Secondary Effluent Pipeline Replacement Project (the project), intended to be a long-term solution that replaces the existing buried inoperable secondary effluent pipeline and allows for removal of the temporary emergency pipelines. The project would remove and replace the inoperable secondary effluent and pond return pipelines and would repair the primary effluent pipeline. While replacing the pond return pipeline was not proposed in the Master Plan, due to the City's interest in maintaining the redundancy provided by the pond return pipeline, the age of the pipeline, and the fact that the pipeline is physically connected to the secondary effluent pipeline, the replacement of the pond return pipeline is included in the project as discussed in greater detail in Chapter 2, *Project Description*.[5]

[4] Notification of emergency repairs at the WPCP were submitted to the U.S. Army Corps of Engineers (USACE) along with the State Water Resources Control Board (SWRCB), San Francisco Bay Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife, and San Francisco Bay Conservation and Development Commission on September 9, 2020, to request coverage under the USACE San Francisco District's Regional General Permit 5 for Repair and Protection Activities in an Emergency (Corps File No. SPN-2014-00284).

[5] The secondary effluent and pond return pipelines are the same material and vintage and were installed in similar conditions beneath the Cargill Chanel. Since the two pipelines are held together with ½-inch thick steel ribs beneath the Cargill Channel, removal of the secondary effluent pipeline risks damaging the pond return pipeline. The work to remove and replace the secondary effluent pipeline would involve the same disturbance footprint needed to remove and replace the pond return pipeline. The main difference between the two pipelines is that the secondary effluent pipeline is a pressure pipeline and the pond return pipeline is a gravity pipeline.



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SOURCE: Carollo Engineers, 2022

Sunnyvale Secondary Effluent Pipeline Replacement

Figure 2
Temporary Pipeline Repair Alignment

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1.2 Purpose of This Addendum

The CEQA Guidelines (Sections 15162 and 15164) allow that a lead agency may prepare an addendum to a previously certified EIR if some changes or additions to the environmental evaluation are necessary, but none of the following occurs:

1. Substantial changes are proposed in the project which will require major revisions to the EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
2. Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
3. New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was adopted, shows any of the following:
    a. The project will have one or more significant effects not discussed in the EIR;
    b. Significant effects previously examined will be substantially more severe than shown;
    c. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
    d. Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Chapter 2 of this document presents a description of the project. Chapter 3 presents an evaluation of the environmental impacts of the project as currently developed in comparison to the impacts disclosed in the PEIR. Chapter 4 summarizes the findings of the evaluation presented in Chapter 3. Chapter 5 contains mitigation measures from the approved Master Plan Mitigation Monitoring and Reporting Program.

This Addendum documents that the project as modified subsequent to the Master Plan does not trigger any of the conditions described above.

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CHAPTER 2
Project Description

2.1 Summary of Previously Approved Project

As part of the Master Plan process, the City identified the need to rehabilitate or replace aging facilities to ensure that the WPCP will reliably continue to meet health and safety and water quality standards. The City previously proposed to rehabilitate the existing 60-inch primary effluent pipeline from the main plant to the Pond Recirculation Channel and the existing 36-inch secondary effluent pipeline from the oxidation ponds to the fixed growth reactor distribution structure. The Master Plan noted that rehabilitation of the existing primary effluent pipeline would include either sliplining or placing cure-in-place pipe within the existing pipeline, but because sliplining would require a more extensive footprint, it was conservatively assumed as the rehabilitation method in the analyses. These improvements as originally proposed were described starting on PEIR page 3-13.

2.2 Project Components

Following certification of the Master Plan PEIR and approval of the Master Plan, the City proceeded to design the rehabilitation of existing facilities. Rehabilitation activities had advanced through multiple stages of design at the time the secondary effluent pipeline failed, as discussed in greater detail in Chapter 1. After implementing a temporary emergency pipeline repair to address the secondary effluent pipeline failure (refer to Chapter 1, *Background and Purpose of the Addendum*, for a description of emergency pipeline repairs), the City proceeded with design of the Secondary Effluent Pipeline Replacement Project (the Project). The Project would remove and replace the secondary effluent pipeline and pond return pipeline and would rehabilitate the primary effluent pipeline. While replacement of the pond return pipeline was not proposed in the Master Plan, due to the City's interest in maintaining the redundancy provided by the pond return pipeline, the age of the pond return pipeline, and the fact that the pipeline is physically connected to the secondary effluent pipeline, the replacement of the pond return pipeline is included in the Project. **Figure 3** shows the general Project area. Refer to **Figure 4** for the location of the existing and proposed pipelines.

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SOURCE: ESA; Base Map Google Earth

Sunnyvale Secondary Effluent Pipeline Replacement

Figure 3
Project Area

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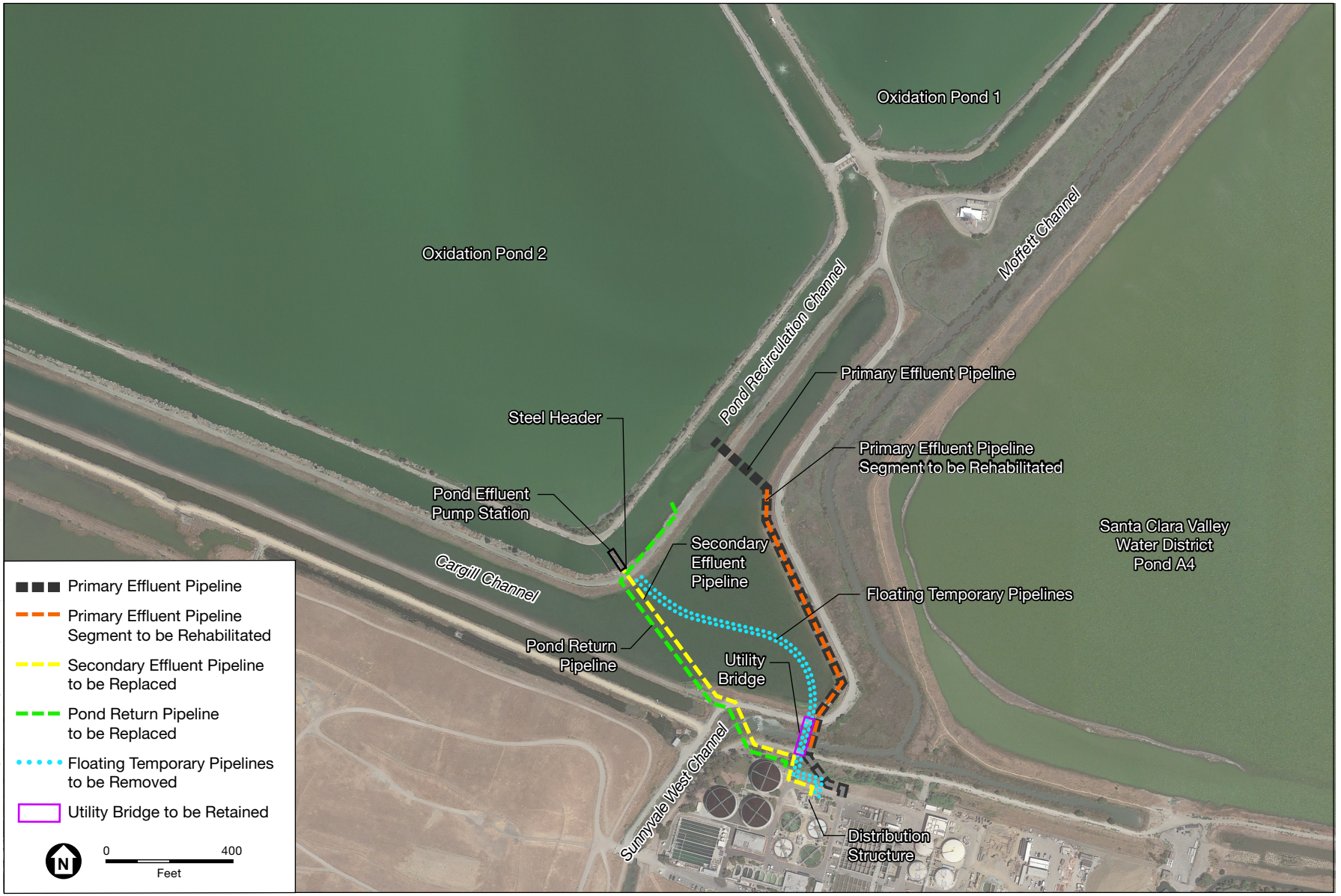

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SOURCE: ESA; Base Map Google Earth

Sunnyvale Secondary Effluent Pipeline Replacement

Figure 4
Project Components

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2.2.1 Secondary Effluent Pipeline

The existing secondary effluent pipeline is a 36-inch diameter, approximately 1,060-foot-long pipeline that is buried under Cargill and Moffett Channels and extends from the pond effluent pump station in the Pond Recirculation Channel to the distribution structure at the WPCP. Until the pipeline failure, the existing pipeline operated under pressure and conveyed secondary-treated effluent from the oxidation ponds to the WPCP main plant.

The proposed replacement of the secondary effluent pipeline would consist of an approximately 1,060-foot-long pipeline connecting the same two end points. The replacement pipeline would generally follow the existing secondary effluent pipeline route and have the same conveyance capacity. The temporary pipeline described in Section 1.1.1 would continue to convey flow until the proposed replacement of the secondary effluent pipeline is complete, after which point the temporary pipeline and existing secondary effluent pipeline would be removed.

2.2.2 Pond Return Pipeline

The existing pond return pipeline is a 48-inch diameter, approximately 1,120-foot-long gravity pipeline that extends from the drainage pump station at the WPCP to the Pond Recirculation Channel and is also buried under Cargill and Moffett channels. The existing pond return pipeline is welded to the existing secondary effluent pipeline from the pond effluent pump station to within the main plant.

The proposed pond return pipeline would replace the existing pipeline with approximately 1,120 feet of 48-inch diameter pipeline and would operate by gravity, same as the existing pipeline. The proposed replacement pond return pipeline would have the same capacity as the existing pipeline. The City would remove and dispose of the old pipeline. Solid non-hazardous waste generated by the project would be disposed of at any landfill within Santa Clara County, while hazardous waste would be sent to an appropriate disposal site.

2.2.3 Primary Effluent Pipeline

The existing 60-inch diameter primary effluent pipeline conveys primary effluent from within the main plant to the Pond Recirculation Channel. To cross Moffett and Cargill channels, two sections of the pipeline are siphons. The City proposes to slipline the primary effluent pipeline using cure-in-place piping.

2.2.4 Steel Header Rehabilitation

The existing steel header, which provided conveyance of flows from the pond effluent pump station to the secondary effluent pipeline, is located at the discharge side of the pond effluent pump station. The steel header is currently not in use as it is connected to the secondary effluent pipeline that ruptured in 2020 (refer to Section 1.1.1). During the temporary pipeline replacement, the existing pumps were rotated and connected to a temporary header to be able to pump secondary effluent through the dual 24-inch pipelines system. The steel header would be rehabilitated by being removed, and then cleaned, epoxy lined, and coated at an off-site paint shop. After rehabilitation the steel header would be reinstalled.

2.3 Construction

2.3.1 Schedule and Workforce

Construction activities would begin April 2025 and end in February 2026, as summarized in **Table 1**.

TABLE 1
CONSTRUCTION SCHEDULE

Construction Activity	Estimated Start	Estimated End	Duration (months)
Phase 1			
Coffer Dam Installation and Initial Dewatering			
Cargill Channel-Pond A4 Bypass Construction[a]	April 2025	April 2025	1
Cargill Channel Area Dewatering[a]	April 2025	June 2025	3
Pond Recirculation Channel Dewatering	April 2025	June 2025	3
Moffett Channel Area Dewatering[b]	August 2025	September 2025	1
Phase 2			
Access Ramp Construction[a]	June 2025	June 2025	1
Pond Return Pipeline Temporary Bypass Construction	June 2025	June 2025	1
Phase 3			
Excavation and Pipeline Replacement	July 2025	November 2025	5
Open Trench in Levee @ SEPS	*July 2025*	*August 2025*	*2*
Open Trench in Cargill Channel[a]	*August 2025*	*September 2025*	*2*
Open Trench in Moffett Channel[b]	*September 2025*	*October 2025*	*2*
Moffett Channel Bypass[b]	*September 2025*	*October 2025*	*2*
Open Trench in WPCP	*October 2025*	*November 2025*	*2*
Steel Header Removal, Rehabilitation, and Installation	July 2025	August 2025	2
Phase 4			
Levee Reconstruction [c]	October 2025	October 2025	1
Coffer Dam Removal [c]	October 2025	October 2025	1
Site Rehabilitation	November 2025	December 2025	2
Remove Secondary Bypass System	December 2025	December 2025	1
Final Site Clean Up	January 2026	February 2026	2
Phase 5			
Primary Effluent Pipeline Rehabilitation	January 2026	February 2026	2

NOTES: PRP = Pond Return Pipeline, SEPS = Secondary Effluent Pump Station, WPCP = Water Pollution Control Plant

[a] Work in Cargill Channel. The coffer dam in Cargill Channel would remain in place for approximately eight months, from April through October 2025.

[b] Work in Moffett Channel. The coffer dams in Moffett Channel would remain in place for approximately three months, from August through October 2025.

[c] Work in both Cargill and Moffett channels

2.3.2 Construction Activities

Construction activities listed in Table 1 would generally require dewatering, excavation, and pipeline replacement. To replace the secondary effluent and pond return pipelines, the City proposes to (1) install coffer dams in the Pond Recirculation, Cargill, and Moffett channels, and dewater the isolated portions of each channel, (2) grade an access ramp into Cargill Channel and implement a temporary bypass system to replace the function of the pond return pipeline, (3) excavate trenches along the existing pipeline alignment through the channels and through the levee separating the channels and replace the secondary effluent and pond return pipelines, (4) return all disturbed areas to preexisting grade and remove the coffer dams and other construction materials from the channels, and (5) rehabilitate the primary effluent pipeline.

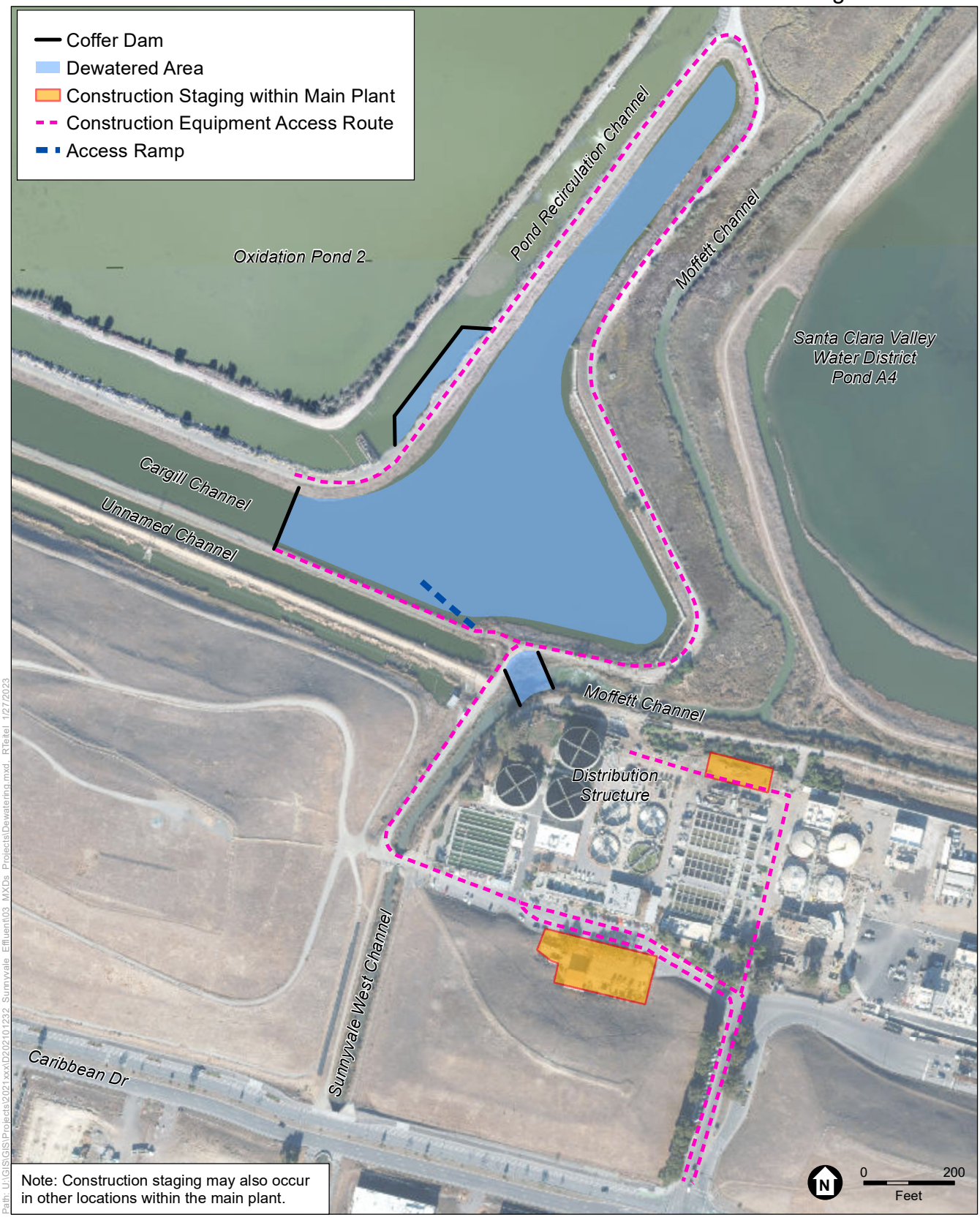
Coffer Dams Installation and Initial Dewatering

Coffer dams would be installed in the following three channels during Project construction, as shown on **Figure 5**:

- **In the Pond Recirculation Channel:** Approximately 350 linear feet (LF) of sheetpile/watertight shoring would be installed to dewater approximately 0.26 acres of the Pond Recirculation Channel.
- **Between Levees in Cargill Channel:** Approximately 160 LF of sheetpile/watertight shoring would be installed to dewater approximately 9.44 acres of the Cargill Channel.
- **In Moffett Channel:** Approximately 170 LF of sheetpile/watertight shoring would be installed to dewater approximately 0.08 acres of the Moffett Channel.

High impact equipment could be needed at the start of construction and again at coffer dam removal to install and remove the sheetpile or watertight shoring used to construct the coffer dams. The coffer dam locations were selected based on the ability of equipment to install the sheetpile from existing levees. Equipment used to install the coffer dams would be hauled along the levees to areas adjacent to the coffer dam locations. The coffer dams in Cargill Channel and the Pond Recirculation Channel would remain in place for approximately eight months, and the coffer dams in Moffett Channel would remain in place for approximately three months (refer to Table 1).

Temporary pumps, flexible piping/hose, and valving would be used to dewater the three channel sections. Infrequent nighttime work may be needed during dewatering. Temporary diesel-powered lights would be placed on the levees to illuminate dewatering activities that require nighttime work. Water dewatered from the three channels would be pumped to areas in each channel that are outside of the dammed/dewatered portions respectively (e.g., Pond Recirculation Channel would be dewatered to the Pond Recirculation Channel, Moffett Channel would be dewatered to downstream areas of Moffett Channel). Cargill Channel would be dewatered to the west. Aggregate base may be laid in Cargill Channel once it is dewatered to accommodate equipment driving into the channel. The aggregate base would be removed from the channel once construction is complete.



SOURCE: ESA, 2022

Sunnyvale Water Pollution Control Plant

Figure 5
Dewatering, Construction Access and Staging

Access Ramp and Temporary Bypass Pipelines

A 120-foot-long by 15-foot-wide access ramp would be installed on the south side of the dewatered portion of Cargill Channel to access the work area within the channel. Vegetation would be removed from the levee bank where the access ramp would be constructed.

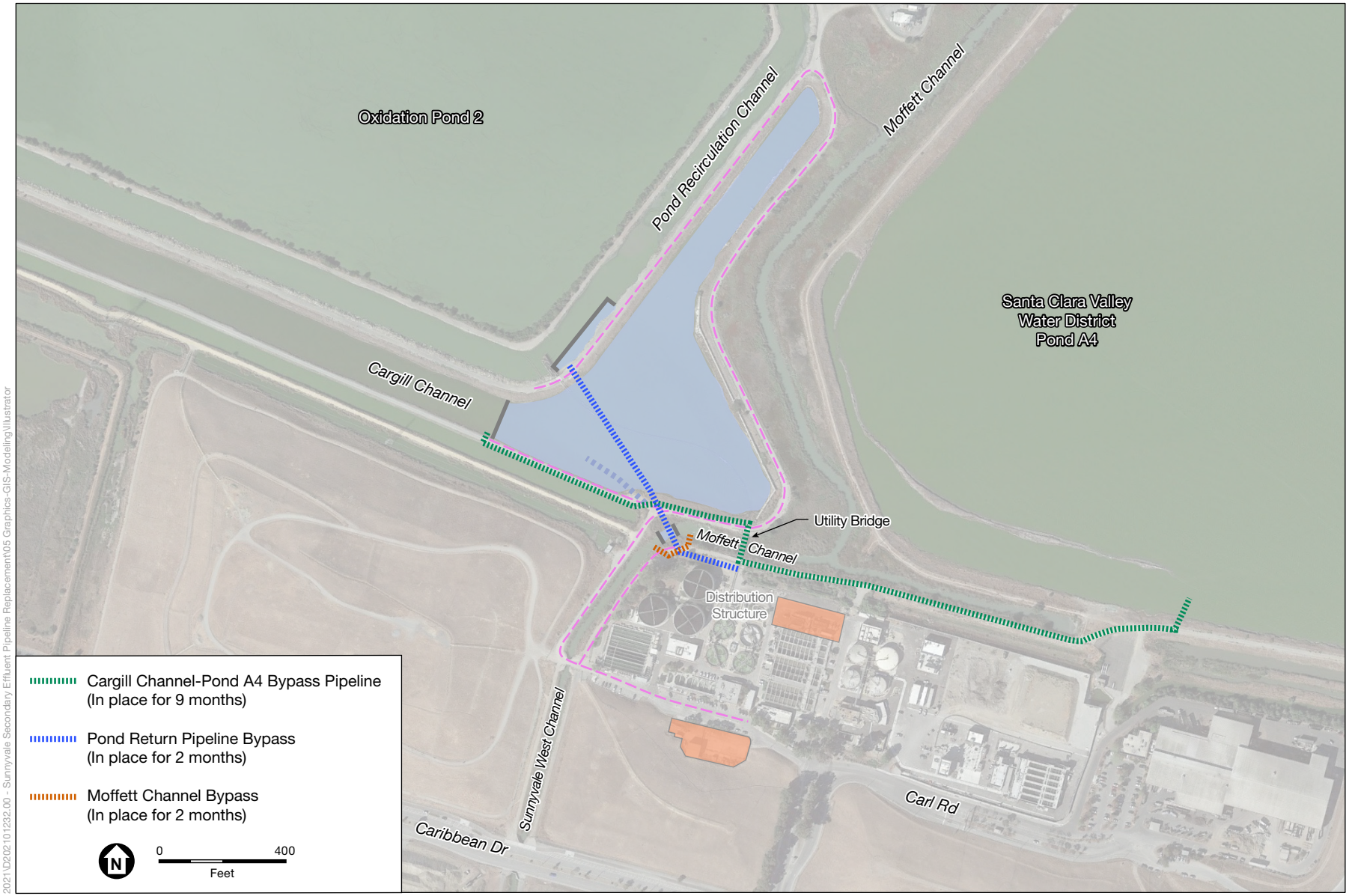
Multiple temporary bypass pipelines would be used to maintain operations of the plant during construction, shown on **Figure 6**. The temporary secondary effluent emergency pipelines described in Section 1.1.1 would continue to operate during construction. If needed, additional length of pipeline would be installed to operate the bypass in the dewatered Cargill Channel. A temporary bypass pipeline replacing the pond return pipeline would consist of a temporary adjacent aboveground pipeline through the construction areas. Flow in Moffett Channel would be pumped around the isolated work area through a third bypass pipeline. A fourth bypass pipeline would allow between 6 and 8 cubic feet per second of water from Cargill Channel to be drawn into Valley Water's Pond A4 during the period that Cargill Channel is dewatered. The temporary bypass pipelines would operate for up to nine months of construction activities.

Excavation and Pipeline Replacement

The City would excavate trenches along the full alignments of the Secondary Effluent and Pond Return pipelines shown on Figure 4, including within the pond recirculation channel, Cargill Channel, Moffett Channel, and south of Moffett Channel to the Distribution Structure within in the main plant. Trench excavation would be approximately 30 feet wide through the dewatered portions of Cargill and Moffett channels. The City would remove shoreline vegetation within the trench alignments as part of trench excavation. For areas within the limits of levees, the trench width would be held to a minimum; for a 36-inch diameter pipeline the trench width would be 5 feet and for the 48-inch pipeline the trench width would be 6 feet. In areas through the levees or channels where the two pipelines are connected, the trench would be 11 feet wide.

The maximum depth of excavation during construction would be up to 22 feet below ground surface at the levee crossings. Temporary shoring during excavation activities associated with buried piping would be required. Approximately 1,938 cubic yards of material would be excavated over the course of Project construction, with approximately 50 percent estimated to be off-hauled and the other 50 percent re-used for backfill. Excavated soil would be stockpiled in dewatered areas adjacent to the trench. The total area of excavation would be approximately 1.6 acres. The existing pipelines would be removed from each trench and then the new pipelines installed in place, at a rate of approximately 50 feet per day. The existing pipelines all have a trapezoidal fill placed over them which would be removed and replaced (to the same elevation or grade) as part of pipeline replacement. Additionally, beneath the backfill, concrete collars would be attached to the pipelines to reduce buoyancy within the channels.

Trenching and pipeline replacement would occur within the levees first and would take approximately two months to complete. Trenching and pipeline replacement in Moffett and Cargill channels would begin during the second month of work within the levees and would also take approximately two months to complete. Trenching and pipeline replacement within the main plant would occur last and would also take two months to complete. Overall, the excavation and pipeline replacement would occur over a five-month period.



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SOURCE: ESA; Base Map Google Earth

NOTE: Existing temporary secondary effluent bypass pipelines not illustrated; the existing bypass pipelines would remain in place until December 2024.

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Sunnyvale Secondary Effluent Pipeline Replacement

Figure 6
Temporary Bypass Pumping

Because the steel header is not currently in use, it would be removed and rehabilitated during construction without affecting the current secondary effluent flows. Once reinstalled and the secondary pipeline replaced, the existing pumps would be rotated back into their regular (pre-2020) configuration and reattached to the newly rehabilitated steel header. The temporary header would be removed at the same time as the dual 24-inch pipeline system.

Levee Reconstruction, Coffer Dam Removal, and Site Rehabilitation

Once pipeline replacement is complete in the levees and channels, the City would reconstruct the levees, backfill and regrade the trenched areas to preexisting grade, remove the coffer dams and allow water to return to the channels, regrade upland areas, and remove equipment from the levees. Levee reconstruction would consist of replacing the soils removed, providing an impermeable center plug within the levee, and re-compacting the soils to existing grades. Once the coffer dams are removed, the City would remove and dispose of the temporary bypass system.

Rehabilitate Primary Effluent Pipeline

The primary effluent pipeline would be rehabilitated with cured in place methods that would not require ground disturbance.[1] The pipeline lining would be cured using either steam or ultraviolet (UV) light, and the pipeline would not be used until curing is complete. During primary effluent pipeline rehabilitation the completed pond return pipeline would be used to convey primary effluent to the oxidation ponds.

2.3.3 Staffing and Construction Hours

At peak construction, up to 20 construction personnel may be onsite each day. Project construction would generally occur within normal City working hours, weekdays between the hours of 7:00 a.m. and 6:00 p.m., and, as necessary, Saturdays between 8:00 a.m. and 5:00 p.m.[2] Nighttime work is anticipated for activities associated with diversion of flows within the channel around the coffer dammed area in Moffett Channel.

2.3.4 Truck Trips and Equipment

Heavy equipment that would be used for construction of the Project includes the following:

- Excavator
- Grader
- Haul trucks
- Dozer/Loader
- Water trucks
- Crawler/pipe cranes
- Pile drivers
- Pickup trucks

[1] Cured-in-place-pipe lining uses a resin soaked felt liner that is inverted into the host pipe, and then cured in place via hot water or stream.

[2] Sunnyvale Municipal Code Section 16.08.030 normally limits construction activity to these hours.

Standby diesel generators would be required during construction activities. Water would be used during construction for activities such as dust suppression and compaction of soil. One tanker truck would provide approximately 1,000 to 1,300 gallons of water per week for construction activities.

Solid non-hazardous waste generated during construction would be disposed of at any landfill within Santa Clara County, while hazardous waste would be sent to an appropriate disposal site. Offhauled waste or material would include 2,200 linear feet of 36- and 48-inch pipeline and steel ribs, and 2,200 cubic yards of excavated materials.

Approximately 38 one-way truck trips (19 round-trips) per day would occur to haul equipment to the site or offhaul materials generated during construction.

2.3.5 Access and Staging

Construction vehicles would access the site using Borregas Avenue and Carl Road, and construction staging and parking (including worker parking) would occur within the main Plant site (potential staging locations shown on Figure 5). The construction equipment access routes along the levee trails shown on Figure 5 would be closed to public access during construction. The public would be directed around the work area to a route along Carl Road. Construction equipment and material laydown would be staged in an approximately 15,000-square-foot area east of the Distribution Structure and in an approximately 20,000-square-foot area south of the main parking lot. Soil would be stockpiled in the dewatered areas adjacent to the open trenches.

2.4 Operations

Once Project construction is complete, the WPCP would continue to operate as it does under current conditions. Project operations would not require changes to the number of staff at the WPCP or the number of operations and maintenance truck trips at the WPCP. There is no anticipated need for storage of any new treatment chemicals or fuel at the WPCP and there would be no change in the operations, capacity of pipelines, or energy use at the WPCP. Additionally, no new impervious surfaces or permanent lighting would be introduced from implementation of the Project.

2.5 Required Actions and Approvals

The following actions and approvals may be required in the future by agencies with discretionary authority over specific aspects of the Project:

- U.S. Army Corps of Engineers
  - Clean Water Act 404 Nationwide Permit Pre-Construction Notification
- US Fish and Wildlife Service
  - Endangered Species Act Section 7 Compliance

- National Marine Fisheries Service
  - Endangered Species Act Section 7 Compliance, Essential Fish Habitat Consultation under Magnuson-Stevens Fishery Conservation and Management Act
- California Regional Water Quality Control, Board San Francisco Bay Region
  - Clean Water Act 401 Water Quality Certification/Porter-Cologne Waste Discharge Requirements
  - Construction General Permit
- California Department of Fish and Wildlife
  - Section 1602, Lake or Streambed Alteration Agreement
- State Historic Preservation Officer
  - National Historic Preservation Act Section 106 Compliance
- San Francisco Bay Conservation and Development Commission
  - Major Permit Amendment

CHAPTER 3
Evaluation of Environmental Impacts

The evaluations in the Program Environmental Impact Report (PEIR) were revisited to determine whether any changes to the analyses were warranted based on refinements to the Secondary Effluent Pipeline Replacement Project (the Project). This chapter describes any changes that have occurred in the existing environmental conditions within and near the Project area as well as environmental impacts associated with the Project. The analysis includes consideration of the mitigation measures adopted for the Master Plan as part of the Mitigation Monitoring and Reporting Program (MMRP). Chapter 5, *Mitigation Monitoring and Reporting Program,* contains the mitigation measures from the adopted MMRP that apply to the Project.

The PEIR evaluated impacts of combinations of individual improvements as they were expected to progress at the time of PEIR preparation. The phasing for the Master Plan improvements has changed as design progressed for individual improvements. As indicated Chapter 2, *Project Description*, construction is anticipated to occur from approximately April 2025 to February 2026 and would coincide with construction of the Secondary Treatment and Dewatering Facilities (2024 to 2027). Project construction may also coincide with the Santa Clara Valley Water District's (Valley Water's) East-West Channels Flood Protection Project (2024 to 2027), which would provide flood protection to homes, businesses, schools, and highways to avoid transportation shutdowns and prevent potential damages. Where relevant, cumulative impacts of this scenario are discussed.

The topics listed below were sufficiently addressed in the PEIR and required no additional analysis because either the nature, scale, and timing of the project has not changed in ways relevant to the topic or there has not been a substantial change in the circumstances involving the topic on the project site, nor in the local environment surrounding the site.

- **Aesthetics.** Repair/construction activities would be similar to what was described in the PEIR and construction-related impacts on aesthetic resources would be temporary in nature. Once construction is complete, the site would be returned to existing conditions and the replaced pipelines would serve the same function as the existing pipelines.
- **Agriculture and Forestry Resources.** The state and local land use and zoning designations with respect to agricultural and forest resources have not changed for the site and surroundings, and agricultural or forest use of the site has not commenced since adoption of the PEIR. Thus, there has not been a substantial change in the circumstances involving agricultural and forest resources at the site or surrounding areas.
- **Energy Conservation.** As indicated in Chapter 2, operational energy usage would not change with implementation of the Project. The construction equipment and activities proposed for the Project would be similar to that evaluated in the PEIR.

- **Geology, Soils, Seismicity, and Mineral Resources.** The nature, scale, and timing of the Project have not changed in a manner that would exacerbate existing geologic and seismic hazards at the Project site. The state and local land use and zoning designations with respect to mineral resources have not changed for the site and surroundings.
- **Hazards and Hazardous Materials.** The location and nature of the Project has not changed from that evaluated in the PEIR. Additionally, the Project is not on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Mitigation measures that remain applicable to the Project are included in Chapter 5.
- **Land Use and Recreation.** The state and local land use plans, policies, and regulations applicable at the site have not changed since adoption of the PEIR, and the character of the Project would remain industrial. The Project site is zoned as "Public Facilities" (City of Sunnyvale, 2020b).
- **Noise and Vibration.** As described in Chapter 2, *Project Description*, the Project would include nighttime construction activity associated with diversions around the coffer dammed area in Moffett Channel, but such work would not require nighttime hauling. The nearest residences to the main plant site are approximately 0.8 mile away and separated from the area by the intervening commercial and industrial land uses and State Route 237. The Project does not include sources of noise during operations that were not evaluated in the PEIR.
- **Population and Housing.** The Project would not alter the effect of the Master Plan on treatment capacity (indirectly inducing population growth) and the types of equipment and number of construction activities occurring concurrently would be similar to that evaluated in the PEIR.
- **Public Services and Facilities.** The nature of the Project with respect to population growth and impairment of achieving service performance objectives has not changed.
- **Utilities and Service Systems.** The nature of the Project with respect to wastewater collection and treatment, water use, and solid waste disposal has not changed.
- **Wildfire.** The Project is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones, and there would therefore be no impact related to this criterion.
- **Mandatory Findings of Significance.** The projects noted above may be under construction concurrently with the Project; these changes in the cumulative scenario would not alter the cumulative impact conclusions of the PEIR beyond the discussions included in this addendum. The effects of the Project on human beings are adequately addressed in the PEIR except for Transportation, Air Quality, Greenhouse Gas Emissions, Biological Resources, Hydrology and Water Quality, Cultural Resources and Tribal Cultural Resources impacts, which are discussed in this addendum.

Changes and additions to the PEIR discussion of the remaining topics are included below, pursuant to CEQA *Guidelines* Section 15164. The following discussion describes the environmental impacts of the Project as compared to the impacts of the approved Master Plan as addressed in the PEIR adopted August 23, 2016 (City of Sunnyvale, 2016). These additions do not reflect involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; for these reasons, a subsequent EIR was not prepared.

3.1 Transportation

Issues (and Supporting Information Sources):	*Potentially Significant Effects Not Identified in Prior EIR*	*Potentially Substantial Increase in Severity of Significant Impact Identified in Prior EIR*	*Sponsor Declines to Adopt Feasible Mitigation Measures or Alternatives*	*No New or More Severe Significant Effects*
TRANSPORTATION — Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

3.1.1 Setting

The environmental setting relevant to Transportation for the Project has not changed relative to the setting in the PEIR. Existing traffic patterns, the transit network, and alternative transportation facilities have generally remained the same since adoption of the PEIR with the exception of the Caribbean Drive Parking and Trail Access Enhancements project. The Caribbean Drive Parking and Trail Access Enhancements project was completed in 2020 and relocated the Bay Trail trailhead and parking from Carl Drive to Caribbean Drive. The project closed a portion of Carl Road to public access, increased the amount of parking spaces in the area (including ADA accessible spaces), and improved bicycle and pedestrian access along Caribbean Drive (City of Sunnyvale, 2022). Setting discussions from the adopted PEIR for this resource are otherwise applicable to the entire Project area.

With respect to Issue b), the PEIR did not evaluate consistency with CEQA Guidelines Section 15064.3, Subdivision (b), as that issue was introduced as part of the December 2018 update to the CEQA Guidelines, which occurred after the PEIR was certified. Pursuant to Section 15064.3, Subdivision (b) and SB 743, the City of Sunnyvale adopted Policy 1.2.8 (Transportation Analysis Policy) on June 30, 2020, transitioning from using delay and level-of-service (LOS) to measure transportation impacts to using vehicle miles traveled (VMT). For the purposes of comparison with the PEIR, this addendum uses automobile delay for discussion and analysis, although VMT remains the measure used to determine the significance of a traffic impact per the CEQA Guidelines.

3.1.2 Findings of Previously Adopted PEIR

The adopted PEIR determined that all Project impacts related to transportation would be less than significant or less than significant with mitigation. Chapter 5, *Mitigation Monitoring and Reporting Program*, reproduces adopted mitigation measures applicable to transportation impacts from this Project.

3.1.3 Discussion

The following discussion evaluates whether Project changes would result in any new or more severe significant environmental effects than identified in the PEIR.

Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities

Local and Regional Roadways

As described in the PEIR, the Master Plan would result in a peak of 564 one-way truck trips and 84 one-way construction worker vehicle trips per day during construction. The Project would generate a maximum of 38 one-way truck trips per day during construction, and the up to 20 construction workers estimated to work on the Project each day would likely commute to and from the work site during peak hours. Truck trips and construction worker trips that would coincide with peak-hour traffic could impede traffic flow on local roadways, a potentially significant impact. With implementation of adopted **Mitigation Measures TR-1a, Truck Route Plan, and TR-1b, Implement a Temporary Traffic Control Plan**, this impact would be reduced to less-than-significant levels, and the impact would not be more severe than that identified in the approved PEIR. Refer to Table 4 in Chapter 5 for the full text of Mitigation Measures TR-1a and TR-1b.

As discussed in the PEIR, Caribbean Drive is the Congestion Management Program system network roadway nearest to the Project area. The Project would not require changes to the number of staff at the WPCP or the number of operations and maintenance truck trips at the WPCP and would therefore not increase the volume of traffic on Caribbean Drive. The Project would therefore not result in new significant environmental effects or increase the severity of previously identified significant effects related to the congestion management program.

Transit, Bicycle, and Pedestrian Facilities

The Project would not directly or indirectly eliminate alternative transportation corridors or facilities, nor would it include changes in adopted policies, plans, or programs that support alternative transportation. No new or more severe environmental impacts related to alternative transportation facilities would result from Project implementation.

Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)

As discussed above in *Setting*, the PEIR did not evaluate this issue, as the issue was introduced as part of the December 2018 update to the current *CEQA Guidelines*, which occurred after the PEIR was certified. Section 15064.3 of the CEQA Guidelines suggests that the analysis of VMT impacts applies mainly to land use and transportation projects. Furthermore, the City of Sunnyvale's Policy 1.2.8 (Transportation Analysis Policy) states that projects that generate or attract fewer than 110 operational trips per day would meet the Small Infill Projects exemption, meaning that the Project would be exempt from further consideration with respect to VMT and

impacts are assumed to be less than significant (City of Sunnyvale, 2020a). Furthermore, impacts due to construction activities would be temporary and would not result in any meaningful long-term or permanent change in VMT. Per this statewide and local guidance, since the Project is neither a land use nor a transportation project and meets the Small Infill Projects exemption, it can be assumed to have a less than significant impact with respect to VMT.

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

During construction, while the number of haul trucks would be substantially lower than evaluated in the PEIR, traffic safety hazards could occur due to increased truck traffic with associated slower speeds and wider turning radii and where delivery and haul trucks share the roadway with other vehicles, the same impact as discussed in the PEIR. With implementation of adopted Mitigation Measure TR-1b, Implement a Temporary Traffic Control Plan, the impact of these potential construction traffic safety hazards would be less than significant with mitigation. There would be no change to lane or roadway configuration as part of the Project; therefore, the operational effects of the Project would be the same as those identified in the PEIR (less than significant). No new or more severe environmental impacts related to traffic safety would result from Project implementation.

Result in Inadequate Emergency Access

The Project would not result in new or more severe adverse impacts related to emergency access because the Project would not alter access to facilities served by emergency vehicles and personnel. The Project does not include design features that would either impede or restrict emergency vehicle access. No new or more severe environmental impacts related to emergency access would result from Project implementation.

Cumulative Transportation Impacts During Construction

At the time of PEIR preparation, details typically used to determine cumulative transportation effects were not known. The PEIR estimated cumulative transportation effects by assuming a worst-case scenario in which construction peak periods overlap for most of the projects identified in the PEIR cumulative scenario (listed in PEIR Table 6-1). Project construction activities may overlap with construction of the Site Preparation and Existing Plant Rehabilitation, Secondary Treatment and Dewatering Facilities, the SCVWD East-West Channels Flood Protection Project, and the Google Caribbean Campus Project. It is possible that service levels along Caribbean Drive could be temporarily degraded by construction activity, a potentially significant cumulative impact. With implementation of adopted **Mitigation Measure C-TR-1**, **Implement Coordinated Transportation Management Plan**, the Project's contribution to a potential cumulative impact along Caribbean Drive would be less than cumulatively considerable.

3.1.4 Conclusion

The Project would not generate more construction vehicle trips than those identified in the previously approved PEIR and would not result in new or more severe significant impacts than identified in the previously approved PEIR during operations, and therefore would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, or conflict with an applicable congestion management program.

Implementation of adopted Mitigation Measures TR-1a and TR-1b would reduce possible impacts related to traffic safety hazards during construction of the Project to a less than significant level, and the Project would not result in any new or more severe significant impacts.

The Project would not result in new or more severe significant impacts on public transit, bicycle and pedestrian facilities, or emergency access than those identified in the previously approved PEIR.

With implementation of adopted Mitigation Measure C-TR-1 to reduce the Project's possible contribution to cumulative transportation impacts, the Project would not result in any new or more severe significant impacts than those identified in the previously adopted PEIR.

3.2 Air Quality

Issues (and Supporting Information Sources):	*Potentially Significant Effects Not Identified in Prior EIR*	*Potentially Substantial Increase in Severity of Significant Impact Identified in Prior EIR*	*Sponsor Declines to Adopt Feasible Mitigation Measures or Alternatives*	*No New or More Severe Significant Effects*
AIR QUALITY — Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) 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?	☐	☐	☐	☒
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	☒

3.2.1 Setting

The air quality setting relevant to the Project site, including applicable regulations and air quality conditions, has not appreciably changed since the adoption of the PEIR. The Bay Area Air Quality Management District (BAAQMD) continues to be the regional authority for air quality management in the Project area and the entire San Francisco Bay Area Air Basin (Bay Area).

The Federal Clean Air Act and the California Clean Air Act both require the establishment of standards for ambient concentrations for criteria air pollutants, and the designation of areas as "attainment" or "nonattainment" based on whether standards have been met in those areas. The state and federal non-attainment status of the Bay Area has not changed since adoption of the PEIR. The Bay Area continues to experience occasional violations of ozone and particulate matter (PM_{10} and $PM_{2.5}$) standards. Therefore, the Project area currently is designated as a non-attainment area for violation of the state 1-hour and 8-hour ozone standards, the federal ozone 8-hour standard, the state respirable particulate matter (PM_{10}) 24-hour and annual average standards, the state fine particulate matter ($PM_{2.5}$) annual average standard, and the federal $PM_{2.5}$ 24-hour standard. The Project area is designated as attainment for all other state and federal standards (BAAQMD, 2017a).

Air Quality Plans

Regional air quality planning in the Bay Area has proceeded since adoption of the PEIR. On April 19, 2017, BAAQMD adopted the most recent revision to the Clean Air Plan – the *2017 Clean Air Plan: Spare the Air -- Cool the Climate* (2017 CAP; BAAQMD, 2017b). The primary goals of the 2017 CAP are to protect public health and protect the climate. The 2017 CAP includes a wide range of control measures to reduce emissions from combustion-related activities, reduce fossil fuel combustion, improve energy efficiency, and decrease emissions of potent greenhouse gases (GHGs). Some measures focus on reducing individual pollutants such as

methane and black carbon, or harmful fine particles that affect public health. Many of the measures, however, reduce multiple pollutants and serve both to protect public health and to protect the climate.

The 2017 CAP updates the *2010 Clean Air Plan*, pursuant to air quality planning requirements defined in the California Health and Safety Code. It describes a multi-pollutant strategy to simultaneously reduce emissions and ambient concentrations of ozone, fine particulate matter, toxic air contaminants, as well as GHGs that contribute to climate change. To fulfill state ozone planning requirements, the 2017 CAP includes all feasible measures to reduce emissions of ozone precursors—reactive organic gases (ROG) and nitrogen oxides (NOx)—and to reduce transport of ozone and its precursors to neighboring air basins. In addition, the 2017 CAP builds upon and enhances BAAQMD's efforts to reduce emissions of fine particulate matter and toxic air contaminants. The 2017 CAP incorporates the Bay Area's first-ever comprehensive regional climate protection strategy. The 2017 CAP control measures reflect strategies that BAAQMD can pursue to reduce GHGs in the Bay Area and lay the groundwork to attain the State's ambitious GHG reduction targets for 2030 and 2050.

BAAQMD Rules, Regulations, and CEQA Guidelines

Since adoption of the PEIR, *BAAQMD CEQA Air Quality Guidelines*, which were used to evaluate the potential effects of the Project on air quality, faced legal challenge in the State Supreme Court. While the significance thresholds originally adopted by BAAQMD in 2011 are not currently recommended by BAAQMD, there is no court order preventing their use, and they are frequently employed by lead agencies when conducting CEQA reviews because the most recent *BAAQMD 2017 CEQA Air Quality Guidelines* provide substantial evidence for the derivation of the thresholds and the approach to employing them in an air quality impact analysis (BAAQMD, 2017c). The State Court of Appeals agreed with BAAQMD that there were scenarios in which the thresholds could be used to properly assess whether and in what amount a project would add air pollutants to the environment. Consequently, the approach implemented in the PEIR remains the latest guidance and no changes to the approach used in the PEIR are warranted at this time.

The WPCP is currently subject to the Operating Permit requirements of Title V of the federal Clean Air Act. BAAQMD is responsible for issuing Title V permits. The most recent permit for the WPCP (Facility #A0733) was issued in July 2018 (BAAQMD, 2018).

Sensitive Receptors

Sensitive receptors, as identified and discussed in the adopted PEIR, have not changed and remain applicable to the Project. No new residential buildings, schools, colleges or universities, daycare facilities, hospitals, or senior-care facilities have been constructed closer to the WPCP than the sensitive receptors identified in the PEIR (located immediately south of State Route 237, 0.8-mile from the Project site).

3.2.2 Findings of the Previously Adopted PEIR

The PEIR identified significant and unavoidable impacts associated with the Project related to the potential to conflict with the applicable air quality plan and the potential to violate any air quality standard or contribute to an air quality violation. The extent to which the Project could result in a cumulatively considerable net increase of criteria air pollutant emissions, expose sensitive receptors to pollutant concentrations, and the potential of the Project to create objectionable odors affecting a substantial number of people were determined to be less than significant impacts. One mitigation measure identified in the PEIR and subsequently adopted by the City (Mitigation Measure AQ-2a) is reproduced in Chapter 5, *Mitigation Monitoring and Reporting Program*.

3.2.3 Discussion

Since certification of the PEIR, more information has been developed regarding construction equipment needed for the Project. The following discussion evaluates whether Project changes and changes in circumstances would result in any new or more severe significant environmental effects than identified in the PEIR.

Consistency with Air Quality Plan

As described in the PEIR, BAAQMD recommends that a project's consistency with the current air quality plan be evaluated using the following three criteria:

1. The project supports the goals of the air quality plan,
2. The project includes applicable control measures from the air quality plan, and
3. The project does not disrupt or hinder implementation of any control measures from the air quality plan.

If it can be concluded with substantial evidence that a project would be consistent with the above three criteria, then BAAQMD considers it to be consistent with air quality plans prepared for the Bay Area (BAAQMD, 2017c).

As detailed earlier, since approval of the PEIR, the air quality plan has been updated with the adoption of the 2017 CAP. The primary goals of the 2017 CAP are to protect public health and protect the climate. The BAAQMD-recommended method for determining if a project supports the goals of the current air quality plan is consistency with BAAQMD thresholds of significance. If project emissions would not exceed the thresholds of significance after the application of all feasible mitigation measures, the project would be consistent with the goals of the 2017 CAP. As indicated in the following discussion for checklist question b) regarding cumulative increase in pollutants, the Project would result in a less-than-significant impact related to construction emissions with the implementation of adopted **Mitigation Measure AQ-2a**, **Implement BAAQMD Basic Construction Mitigation Measures**, which includes BAAQMD's applicable recommended fugitive dust control measures. The Project would also result in operational emissions less than the significance thresholds. Therefore, the Project would be considered to support the primary goals of the 2017 CAP.

The 2017 CAP contains 85 control measures aimed at reducing air pollution in the Bay Area. Projects that incorporate all feasible control measures are considered consistent with the 2017 CAP. Two of the stationary source control measures are applicable to operation of water pollution control plants: WR1 (Limit GHGs from Publicly-Owned Treatment Works) and WR2 (Support Water Conservation). While neither of these measures contain specific emissions control strategies, the Project would not be inconsistent with these measures as the Project would not affect methane capture at the WPCP, would not affect production of recycled water at the WPCP, and would not install combustion engines.

In addition, the 2017 CAP contains control measure TR22 which addresses emissions from construction equipment and waste reduction measure WA4, which requires jurisdictions to develop or identify and promote model ordinances on community-wide zero waste goals and recycling of construction and demolition materials in commercial and public construction projects. TR22 uses various strategies to reduce emissions from construction and farming equipment (e.g., incentives for equipment upgrades and/ or use of renewable electricity and fuels). Since 2009, BAAQMD has provided more than $38 million to replace and/or upgrade hundreds of pieces of older, often uncontrolled equipment used in construction, cargo-handling, and agricultural operations with newer units that have engines certified to the cleanest available standards. The Project would benefit from this ongoing program and would not conflict with its implementation. Control measure WA4 is implemented through the City of Sunnyvale's requirements for construction and demolition waste tracking. To satisfy CalGreen standards and LEED certification requirements, demolition, construction, and recycling waste weights and/or volumes are to be reported to the City using a City recommended tracking online tool. Projects must meet a minimum rate of 65 percent recycling and/or reuse of nonhazardous construction and demolition waste. The Project would be required to comply with the City's standards regarding construction and demolition waste. For these reasons, the Project would not be inconsistent with nor hinder implementation of the 2017 CAP control measures.

In summary, the Project would be consistent with all three criteria listed above to evaluate consistency with the 2017 CAP and, therefore, would not conflict with or obstruct implementation of the 2017 CAP, and the impact would be less than significant.

Cumulative Increase in Pollutants

According to BAAQMD, no single project will, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. The *BAAQMD CEQA Air Quality Guidelines* recommends using its quantitative thresholds of significance to determine if an individual project's emissions would considerably contribute to cumulative air quality impacts in the region. If a project's emissions exceed the identified significance thresholds, its contribution to cumulative air quality would be considerable, resulting in significant adverse air quality impacts on the region's existing air quality conditions (BAAQMD, 2017c). Alternatively, if a project does not exceed the identified significance thresholds, then the project would not be considered cumulatively considerable and would result in less-than-significant air quality impacts.

As discussed above, the PEIR disclosed significant and unavoidable impacts related to the potential to conflict with an applicable air quality plan and potential to violate air quality standards. Therefore, the contribution of the adopted PEIR to cumulative air quality was also described as being significant. The Project's contribution to the cumulative air quality of the area has been evaluated below by comparing its construction and operational emissions to the applicable BAAQMD thresholds.

Construction

At the time of PEIR preparation, details typically used to calculate air pollutant emissions (such as the number of pieces of each type of off- and on-road equipment and daily equipment usage rates in terms of hours per day and total days of use) were not known. The PEIR estimated the anticipated air pollutant emissions of WPCP projects by estimating the relative magnitude of construction activity compared to other, better-defined projects planned at the site. The City anticipated that as part of project-level CEQA review of Master Plan improvements, the PEIR analysis would be reviewed considering updated construction information and analysis of air pollutant emissions would be revised accordingly. The analysis presented below presents a detailed quantification of emissions and associated impacts developed from project-specific information.

Criteria air pollutant emissions of ROG, NOx, PM_{10}, and $PM_{2.5}$ would be generated by off-road construction equipment (e.g., excavators, graders, loaders, bypass pumps). Emissions would also be generated from vehicle trips required to transport workers, equipment, and materials to and from the construction sites. Emissions from off-road construction equipment and construction-related vehicle trips (employee commute trips and truck trips) were estimated using the most recent version of CalEEMod (version 2020.4.0) and the construction schedule, types of equipment and activity level, and number of construction vehicle trips provided for the Project. Project construction emissions were estimated assuming that construction would begin in April 2024 and would take approximately 11 months to complete (Carollo Engineers, 2022a).[1] The exact end points for the daily construction vehicle trips are not known at this time, so the on-road emission estimates were developed using CalEEMod default trip lengths for Santa Clara County. Average daily construction emissions were estimated by dividing the total emissions generated over the construction period by the number of workdays. CalEEMod inputs, outputs and emissions calculations are summarized in Appendix A.

Estimated average daily emissions are shown in **Table 2** and are compared to the BAAQMD construction thresholds.

As indicated in Table 2, the average daily construction exhaust emissions would not exceed BAAQMD's significance thresholds for construction. In addition to exhaust emissions, the PEIR evaluated emissions of fugitive dust from construction activities. As described in the PEIR, for all projects, BAAQMD recommends the implementation of its Basic Control Mitigation Measures

[1] Since completion of construction emissions modeling, the construction schedule was updated to begin one year later, in April 2025. The use of the April 2024 starting date for construction provides a conservative estimate of emissions, as fleet-average emission factors are expected to decrease each year with turnover of older, more-polluting and less energy efficient equipment being replaced by newer equipment meeting current energy efficiency and emission standards.

whether or not construction-related exhaust emissions exceed the applicable significance thresholds. The BAAQMD Basic Control Mitigation Measures were adopted by the City as Mitigation Measure AQ-2a (included in Chapter 5 of this document). Therefore, with the implementation of Mitigation Measure AQ-2a, the Project's construction-related impacts associated with exhaust and fugitive dust emissions would be less than significant.

TABLE 2
AVERAGE DAILY CONSTRUCTION EMISSIONS (POUNDS/DAY)

Construction Phase	ROG	NOx	Exhaust PM_{10}[a]	Exhaust $PM_{2.5}$[a]
Project Average	6.8	51.9	1.9	1.8
BAAQMD Construction Threshold	54	54	82	54
Significant Impact?	**No**	**No**	**No**	**No**

NOTES:
[a] BAAQMD's construction-related significance thresholds for PM_{10} and $PM_{2.5}$ apply to exhaust emissions only and not to fugitive dust.
SOURCE: Appendix A

Operation

Once operational, the Project would not increase staff at the WPCP, nor would it generate any new operational and maintenance truck trips to the WPCP. In addition, the Project does not introduce any new stationary sources of pollutants. Therefore, there would be no increase in operational emissions due to the Project.

As both construction and operational emissions associated with the Project would be less than the respective BAAQMD significance thresholds, the Project's contribution to the cumulative air quality impact in the area would be less than significant.

Exposure of Sensitive Receptors

Toxic Air Contaminants

The PEIR identified less than significant impacts with respect to exposure of sensitive receptors to toxic air contaminants (TACs) primarily in the form of diesel particulate matter (DPM). BAAQMD recommends that health risk impacts be considered when sensitive receptors are located within 1,000 feet of TAC sources. As noted above, no new sensitive receptors are located closer to the project area than those identified in the PEIR. The nearest receptors are located over 4,000 feet from the Project construction area. Therefore, temporary DPM emissions generated during the construction period would not result in substantial impacts at the nearest receptors. Operation of the Project would not introduce any new stationary sources of TACs, nor would it generate any new truck trips to the WPCP. For this reason, the Project's impacts associated with exposure of sensitive receptors to TACs would be no greater than those identified in the PEIR and would be less than significant.

Criteria Air Pollutants

The Project would generate criteria pollutant emissions of ROG, NOx, and PM, as discussed under *Cumulative Increase in Pollutants* above; however, the health risk impacts of these emissions on sensitive receptors are harder to quantify. ROG and NOx, the precursors of ozone react through a series of complex photo-chemical reactions in the presence of sunlight to form ozone in the atmosphere. Many factors affect the formation of ozone including the presence of sunlight, dispersion from wind, and topography, which affects wind patterns. Therefore, the impacts of ozone are typically considered on a basin-wide or regional basis instead of a localized basis. The health-based ambient air quality standards for ozone therefore are as concentrations of ozone and not as tonnages of their precursor pollutants (i.e., NO_X and ROG).

Because of the complexity of ozone formation and the non-linear relationship of ozone concentration with its precursor pollutants and given the state of environmental science modeling in use at this time, it is infeasible to convert specific project-level emissions of NO_X or ROG emitted in a particular area to concentration of ozone in that area. Given these scientific constraints, the disconnect between project-level NO_X emissions and ozone-related health impact cannot be bridged at this time.

The ambient air quality standards adopted at the state and federal levels are health protective standards. Air districts such as BAAQMD have established thresholds of significance for project-level emissions at levels to ensure continued progress of their jurisdictions towards the attainment of these ambient air quality standards. Hence, projects that generate less than the significance thresholds can be considered to not cause exceedances of the standards or associated health impacts. As discussed under *Cumulative Increase in Pollutants* above, with mitigation the Project's construction and operational emissions would be below BAAQMD's significance thresholds. Therefore, it can be inferred that criteria air pollutant emissions generated by the Project would not lead to significant health impacts and this impact would be less than significant.

Odorous Emissions

The Project would not include operation of an odor source. Diesel exhaust from construction equipment and temporary exposure of previously submerged bay mud would generate temporary and localized odors but would not carry over to receptors more than 4,000 feet away. Therefore, no new or more severe environmental effects related to odors would result beyond those identified in the PEIR.

3.2.4 Conclusion

Construction emissions associated with the Project would be below BAAQMD thresholds with the implementation of adopted Mitigation Measures AQ-2a. Operational emissions would also be less than the respective BAAQMD thresholds. In addition, the Project would not conflict with or hinder implementation of any measures in the *2017 CAP*. Therefore, the Project would be consistent with the *2017 CAP* and would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment under an applicable federal or state ambient air quality standard. With implementation of adopted Mitigation Measure AQ-2a,

these impacts would be less than significant and would not result in any new or more significant impacts than those identified in the previously adopted PEIR.

The Project would not result in additional exposure of sensitive receptors to substantial pollutant concentrations or create additional objectionable odors affecting a substantial number of people and thus would not result in any new or more significant impacts than those identified in the previously adopted PEIR.

3.3 Greenhouse Gas Emissions

Issues (and Supporting Information Sources):	*Potentially Significant Effects Not Identified in Prior EIR*	*Potentially Substantial Increase in Severity of Significant Impact Identified in Prior EIR*	*Sponsor Declines to Adopt Feasible Mitigation Measures or Alternatives*	*No New or More Severe Significant Effects*
GREENHOUSE GAS EMISSIONS — Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☒
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

3.3.1 Setting

As a climate action leader, California has continued to demonstrate its commitment to aggressive action on climate change. The State Legislature and Governor have adopted ambitious targets to encourage bolder climate action, including statewide GHG emissions reduction targets of reaching:

- 1990 levels by 2020 (Assembly Bill [AB] 32 in 2006)
- 40 percent below 1990 levels by 2030 (Senate Bill [SB] 32 in 2016)
- 80 percent below 1990 levels by 2050 (Executive Order S-3-05 in 2005)

In September 2018, Governor Brown signed SB 100 into law, setting a state target of 100 percent carbon-free electricity by 2045. SB 100 also sets interim requirements for 50 percent renewable electricity by 2026 and 60 percent by 2030, superseding previously established targets. Also in September 2018, Governor Brown signed Executive Order B-55-18, which establishes a new statewide goal to "achieve carbon neutrality as soon as possible, no later than 2045, and achieve and maintain net negative emissions thereafter."

In September 2022, Governor Newson signed AB 1279, the California Climate Crisis Act which requires the state to achieve net-zero GHG emissions no later than 2045, and achieve and maintain net negative GHG emissions thereafter. The bill also requires California to reduce statewide GHG emissions by 85 percent compared to 1990 levels, and directs the California Air Resources Board (CARB) to work with relevant state agencies to achieve these goals.

The three planning documents identified in the PEIR– the Sunnyvale Climate Action Plan, BAAQMD's 2017 CAP, and CARB Climate Change Scoping Plan – have all been updated since PEIR approval. As discussed above in Air Quality, the BAAQMD 2017 CAP (BAAQMD, 2017b) was released after approval of the PEIR. The City of Sunnyvale Climate Action Plan was updated in 2019 as the Climate Action Playbook (City of Sunnyvale, 2019) to include the City's strategies to reach the state's GHG reduction goals for 2030 and 2050. The 2019 Climate Action Playbook aims to reduce the city's GHG emissions by 56 percent below 1990 levels by

2030 (exceeding the State's 40 percent by 2030 target), and 80 percent below 1990 levels and carbon neutrality by 2050 (falling short of the AB 1279's targets for 85 percent reduction and carbon neutrality by 2045). CARB's Climate Change Scoping Plan was most recently updated in 2022 to incorporate the 85 percent reduction and carbon neutrality targets for 2045 established by AB 1279. The actions and outcomes in the 2022 Scoping Plan aim to achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon.

For the evaluation of the impact of the Master Plan relative to GHG emissions and its impact on the environment, the PEIR used quantitative significance criteria established by BAAQMD in the *BAAQMD CEQA Air Quality Guidelines,* updated in 2011. The *BAAQMD CEQA Air Quality Guidelines* were updated in 2017 (BAAQMD, 2017c), but the updates did not change the recommended quantitative significance thresholds from the 2011 guidelines and provided direction on recommended analysis methods.

BAAQMD most recently updated its *CEQA Air Quality Guidelines* in April 2022. In response to SB 32's target for 2030 and EO B-15 target for carbon neutrality no later than 2045, BAAQMD adopted new CEQA significance thresholds for GHGs and published a Justification Report (BAAQMD, 2022). For land use development projects, BAAQMD recommends using the approach endorsed by the California Supreme Court in Center for Biological Diversity v. Department of Fish & Wildlife (2015) (62 Cal.4th 204), which evaluates a project based on its effect on California's efforts to meet the State's long-term climate goals. As the Supreme Court held in that case, a project that would be consistent with meeting those goals can be found to have a less-than-significant impact on climate change under CEQA. If a project would contribute its "fair share" of what will be required to achieve those long-term climate goals, then a reviewing agency can find that the impact will not be significant because the project will help to solve the problem of global climate change (62 Cal.4th 220–223).

Applying this approach, BAAQMD analyzed what will be required of new land use development projects to achieve California's long-term climate goal of carbon neutrality by 2045. BAAQMD, based on this analysis, has identified best management practices as significance thresholds that projects would have to comply with to ensure consistency with the state's long-term GHG reduction goals. BAAQMD developed these thresholds of significance based on typical residential and commercial land use projects focusing on operational emissions from building energy use and transportation, which represent the vast majority of project GHG emissions and would not be applicable to infrastructure development/improvement projects such as the proposed Project. In addition, BAAQMD has not identified a construction-related climate impact threshold at this time.

The BAAQMD CEQA Guidelines also state that, alternatively, a project may be found to have a less-than-significant impact related to GHG emissions if it complies with a locally adopted GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b). Although the City of Sunnyvale has adopted the Climate Action Playbook to reduce the City's GHG emissions, it does not meet the criteria for a "qualified plan" according to CEQA Guidelines Section 15183.5(b) and the standards for qualified plans set forth by BAAQMD and

hence cannot be used for tiering of GHG analyses of projects within the City. Therefore, the analysis of Project impacts with respect to the first criterion has been conducted qualitatively.

With respect to the second Appendix G criterion related to consistency with plans and policies adopted to reduce GHG emissions, the analysis in the PEIR relied on the Master Plan's conformance with the Sunnyvale CAP as well as compliance with goals set forth in AB 32 and the 2010 Bay Area Clean Air Plan. For the purposes of the Project, the current applicable plans to determine conformance would be the 2019 Sunnyvale Climate Action Playbook, the 2022 Scoping Plan Update and the 2017 Clean Air Plan.

3.3.2 Findings of the Previously Adopted PEIR

The PEIR identified less-than-significant impacts associated with the Project related to generation of GHG emissions and conflict with plans adopted to reduce GHG emissions.

3.3.3 Discussion

Since certification of the PEIR, more information has been developed regarding construction equipment needed for the Project. The following discussion evaluates whether Project changes and changes in circumstances would result in any new or more severe significant environmental effects than identified in the PEIR.

GHG Emissions

Construction

The Project would generate GHG emissions primarily during the construction phase. Although a quantitative assessment of GHG emissions is not required as part of BAAQMD's updated GHG thresholds, the Project's construction emissions inventory has been compiled based on the CalEEMod run conducted for the air quality analysis and presented for informational purposes. The analysis presented below does not use these estimates to evaluate the significance of GHG impacts as BAAQMD does not provide any quantitative thresholds for construction GHG emissions.

At the time of PEIR preparation, details typically used to calculate GHG emissions (such as the number of pieces of each type of off- and on-road equipment and daily equipment usage rates in terms of hours per day and total days of use) were not known. The PEIR estimated the anticipated GHG emissions of Master Plan by estimating the relative magnitude of construction activity compared to other, better-defined projects planned at the site. The City anticipated that as part of project-level CEQA review of Master Plan improvements, the PEIR analysis would be reviewed considering updated construction information and analysis of GHG emissions would be revised accordingly. The analysis presented below presents a quantification of GHG emissions and associated impacts developed from project-specific information.

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

with the Project were estimated using project-specific information such as the construction schedule, the types and number of construction equipment used, their horsepower rating, daily usage in terms of hours per day, and the number of days each piece of equipment is used within the construction period. Approximately 1,827 metric tons carbon dioxide equivalent ($MTCO_2e$) are estimated to be generated by construction activities associated with the Project. Refer to Appendix A for details related to calculations and assumptions used to estimate the construction-phase GHG emissions associated with the Project.[2]

Construction GHG emissions for the Project were derived from the CalEEMod run conducted for the analysis of air quality impacts. Construction emissions include emissions from off-road construction equipment as well as on-road motor vehicles used during construction for worker commutes and transport of materials and equipment. The number of material delivery and off-haul trips varies by construction phase and are based on data provided by the City. The exact end points for the daily trips are not known at this time, so the on-road emission estimates were developed using CalEEMod default trip lengths for Santa Clara County.

As discussed earlier, BAAQMD has not adopted quantitative or qualitative significance thresholds for the evaluation of GHG emissions from construction. GHG emissions from off-road construction equipment represent a very small portion of overall statewide emissions (0.6 percent), and CARB has identified only limited emission reduction strategies to control emissions from off-road construction equipment. Therefore, CARB's climate action planning has focused on the reduction of operational emissions that have technology available to yield greater reductions. In other words, CARB estimates that the state can achieve its 2030 target with very limited emission reductions in the construction sector. The 2017 Scoping Plan Update calls for reducing emissions from certain sources substantially (like vehicle emissions and building energy use) while not targeting emissions for other sources (like construction emissions). The 2022 Update, which lays out a sector-by-sector roadmap for California to decarbonize the economy and achieve carbon neutrality by 2045, identifies transportation electrification, VMT reduction and building decarbonization as the main areas for GHG reductions with residual emissions addressed by re-envisioning the natural and working lands for carbon storage and sequestration. Under this strategy, the state can still achieve its 2030 GHG reduction target without relying on the reductions in the construction sector. Similarly, the BAAQMD thresholds focus on operational GHG emissions from land use development projects that provide major reductions and do not rely on any reduction in GHG emissions from the construction sector to meet the state's GHG reduction goals for 2030 and beyond. Because BAAQMD's thresholds are based on consistency with statewide targets, the conclusion that emissions from construction are less than significant is warranted.

For these reasons, the Project's construction-related GHG emissions are not considered cumulatively considerable, and the impact would be less than significant.

[2] Since completion of construction emissions modeling, the construction schedule was updated to begin one year later, in April 2025. The use of the April 2024 starting date for construction provides a conservative estimate of emissions, as fleet-average emission factors are expected to decrease each year with turnover of older, more-polluting and less energy efficient equipment being replaced by newer equipment meeting current energy efficiency and emission standards.

Operation

BAAQMD requires that long-term GHG emissions from both direct and indirect sources be considered in a project's emissions inventory. Direct GHG emissions are generated onsite and include emissions from fossil fuel combustion in vehicle trips generated by a project or any stationary sources associated with a project. Indirect emissions associated with a project are typically generated from the generation of electricity used at the project, disposal of solid waste generated, and the distribution and treatment of water and wastewater conveyed to and from a project, respectively.

However, once operational, the Project would not increase staff at the WPCP nor would it generate any new operational and maintenance truck trips to the WPCP. Additionally, the Project does not introduce any new stationary sources of pollutants. Therefore, there would be no increase in direct GHG emissions at the WPCP over existing conditions. Once operational, the Project would not change the energy requirements of the WPCP, increase water use or generate wastewater and solid waste. Therefore, there would be no increase in direct or indirect GHG emissions due to Project operation and the impact would be less than significant.

Consistency with GHG Plans, Policies, or Regulations

BAAQMD's 2017 CAP includes 85 control measures, more than the 55 included in the 2010 Clean Air Plan. Two of the stationary source control measures are applicable to operation of water pollution control plants: WR1 (Limit GHGs from Publicly-Owned Treatment Works) and WR2 (Support Water Conservation). While neither measure contains specific emissions control strategies, the Project would not be inconsistent with these measures as the Project would not affect existing methane capture at the WPCP or production of recycled water at the WPCP. Therefore, the Project would not disrupt or hinder implementation of any of the GHG-related 2017 CAP control measures. The 2017 CAP does not contain any measures that specifically address GHG emissions from construction activities. Therefore, the Project would be consistent with all applicable control measures in the 2017 CAP and would not conflict or hinder their implementation.

The 2019 Climate Action Playbook identifies six key strategies and 18 plays associated with these strategies to achieve these reductions: promoting clean energy; decarbonizing buildings; decarbonizing transportation and sustainable land use; managing resources sustainably; empowering the community; and adapting to climate change. However, none of strategies contain measures that could be implemented at a project level for a project that generates GHG emissions primarily during construction. The Project would not affect electricity usage at the WPCP, construct any conditioned buildings, increase vehicle trips to the WPCP, or result in a change in land use and hence would not conflict with the first three strategies. The other three strategies aim to manage resources sustainably, empower the community, and adapt to a changing climate. Construction and demolition waste generated by the Project would be disposed off, consistent with the City's requirements, and the Project would not impede implementation of the other strategies. Therefore, the Project would not conflict with any strategies and measures included in the 2019 Climate Action Playbook.

Strategies in the 2022 Scoping Plan prioritize transportation electrification, VMT reduction and building decarbonization as the sectors to achieve maximum GHG reductions. There are no measures or actions that can be implemented at a project level that target GHG reductions from construction equipment. Therefore, the Project would not conflict with measures in the 2022 Scoping Plan.

In summary, the Project would not generate GHG emissions that would result in significant impacts when considered with the BAAQMD's updated GHG thresholds. Additionally, the Project would not conflict with any of the GHG reduction measures either in the BAAQMD's 2017 CAP, the 2022 Scoping Plan or the City of Sunnyvale 2019 Climate Action Playbook. Therefore, the Project would not conflict with plans and policies adopted to implement the State's interim and long-term GHG reduction goals.

This impact would be **less than significant**.

3.3.4 Conclusion

The Project would not result in any new or more severe environmental effects related to GHG emissions, or conflict with plans, policies, and regulations adopted regarding GHG emissions, than those identified in the previously adopted PEIR.

3.4 Biological Resources

Issues (and Supporting Information Sources):	*Potentially Significant Effects Not Identified in Prior EIR*	*Potentially Substantial Increase in Severity of Significant Impact Identified in Prior EIR*	*Sponsor Declines to Adopt Feasible Mitigation Measures or Alternatives*	*No New or More Severe Significant Effects*
BIOLOGICAL RESOURCES — Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

3.4.1 Setting

The environmental setting relevant to biological resources for the master plan area, including applicable regulations, has not changed since adoption of the PEIR. Guidance from the United States Fish and Wildlife Service (USFWS) on the federal Endangered Species Act has changed to include noise disturbances to protected species in potential foraging habitat (Affonso, 2020); previous guidance had focused on limiting disturbance to potential breeding habitat. Setting discussions from the adopted PEIR for the Master Plan, biological communities, special-status species are applicable to the Project.

3.4.2 Findings of Previously Adopted PEIR

The adopted PEIR determined that all Project impacts related to biological resources would be less than significant or less than significant with mitigation. Chapter 5, *Mitigation Monitoring*

and Reporting Program, reproduces select adopted mitigation measures applicable to biological resources, with revisions as discussed in this section.

3.4.3 Discussion

As noted above, the Project components would result in ground disturbance and construction staging within and outside of areas that were evaluated for these activities in the PEIR. The Project would not result in tree removal or conflict with any other local policies or ordinances protecting biological resources and would not conflict with provisions of an approved conservation plan, because no approved habitat conservation plans encompass the Project area. As previously described in the PEIR, given the lack of suitable spawning habitat and short, seasonal duration of impacts within Moffett Channel, impacts on migratory fish species and other aquatic species would be less than significant. Impacts on special-status species, protected wetlands, and on other biological communities, and impacts related to conflicts with policies or ordinances protecting biological resources are discussed below.

Special-Status Species

Special-status Plants

Implementation of the Project could potentially impact one special-status plant species, Congdon's tarplant (*Centromadia parryi* ssp. *congdonii)*. Congdon's tarplant was not observed during a 2022 botanical survey of the site. If construction proceeds by summer 2024, then there would be no impact on Condon's tarplant. However, the species still has the potential to occur within the Project area. If construction does not proceed by summer 2024, implementation of adopted **Mitigation Measure BIO-1a**, **Reduce Impacts on Congdon's Tarplant**, would reduce impacts to less-than-significant levels (refer to Table 4 for full text of Mitigation Measure BIO-1a).

Special-status Animals

California Ridgway's Rail and California Black Rail

Habitat suitability for California Ridgway's rail (*Rallus obsoletus obsoletus*) was recently reevaluated based on more recent surveys along Guadalupe Slough and habitat assessment along Moffett Channel (ESA, 2020). The habitat reevaluation also would be applicable to California black rail (*Laterallus jamaicensis coturniculus*). The PEIR identified the tidal brackish marsh along Moffett Channel as potential foraging habitat for these species. California Ridgway's rail and black rail likely occur and potentially nest in tidal brackish marsh along Guadalupe Slough north of the Project area where the marsh is broader with well-developed tidal channels lined with marsh gumplant (*Grindelia stricta*) and marsh plains covered by densely thatched alkali bulrush (*Bolboschoenus maritimus*). The recent habitat assessment concluded that marginally suitable breeding habitat exists along Moffett Channel, particularly near the pond circulation pump station north of the project site. The quality of the nesting habitat for California Ridgway's rail decreases upstream (i.e., south toward the WPCP main plant) on Moffett Channel from Guadalupe Slough, as the number of channels and the amount of alkali bulrush and marsh gumplant decreases with distance from the Bay and freshwater vegetation (e.g., tules [*Schoenoplectus* spp.], common reed

[*Phragmites australis*]) becomes predominant. The small strip of salt marsh along Cargill Channel is not expected to be used for foraging because it is not connected to tidal marsh.

In the unlikely event an individual Ridgway's or black rail does occur during construction activities there is potential for construction activities to result in the harassment, harm, injury, or death of rails through crushing by equipment and machinery, lost opportunity for breeding activity, nest abandonment, or increased risk of predation. Individual rails may be harassed by noise and vibrations associated with coffer dam installation, pipeline excavation, and other construction activities within or adjacent to their habitat, resulting in the disruption of feeding, sheltering, or breeding activities. The level of harassment may be exacerbated if the construction activities occur during an extreme high tide when rails are most likely to escape the adjacent flooded marsh plain to seek upland refugia cover along the levee. Displaced Ridgway's or black rails may have to compete for resources in occupied habitat and may be more vulnerable to predators. Disturbance to rails during the breeding season may disrupt breeding or cause nest abandonment resulting in the mortality of eggs and chicks in the nest. Thus, displaced rails may suffer from increased predation, competition, mortality, and reduced reproductive success.

While there is some potential for direct, construction-related impacts on foraging California Ridgway's rails or California black rails, and noise-related disturbance to individual foraging or nesting rails within 700 feet of potential habitat during construction activities, due to the low population sizes of these species in the relevant portions of Moffett Channel, impacts on individual California Ridgway's rails and California black rails are unlikely (Liu et al., 2012; OEI, 2020). Regardless, all potential impacts on California Ridgway's rail and California black rail would be reduced to a less-than-significant level with implementation of **Mitigation Measures BIO-2a**, **Worker Environmental Awareness Training; BIO-2b**, **Minimization of Impacts on Water Quality**, to address potential water-quality impacts during construction; and **BIO-2f**, **California Ridgway's Rail and California Black Rail Measures**. These measures have been adjusted as necessary to make them apply to the Project. The adjusted mitigation measures do not change the original impact conclusions from the PEIR, nor are they considerably different from those analyzed in the PEIR.

> **Mitigation Measure BIO-2a: Worker Environmental Awareness Training**
>
> The City will retain, or require the contractor to retain, a qualified biologist to conduct mandatory contractor/worker environmental awareness training for all construction personnel working on Project activities outside of the main plant~~, including but not limited to Ponds 1 and 2, the diurnal equalization and emergency storage basins, channel levees, and the Bay Trail parking relocation area~~. The awareness training will be provided to all construction personnel to brief them on the potential for special-status species to occur on the site, the need to avoid effects to special-status species and their habitats, and all Project mitigation measures pertaining to biological resources and water quality. If new construction personnel are added, the contractor will ensure that the personnel receive the mandatory training before starting work. A representative will be appointed during the employee education program to be the contact for any employee or contractor who might inadvertently kill or injure a special-status species or who finds a dead, injured, or entrapped individual. The representative's name and telephone number will be provided to the City prior to the initiation of construction activities outside of the main plant.

Mitigation Measure BIO-2b: Minimization of Impacts on Water Quality

The following measures will be incorporated into the construction stormwater pollution prevention plan and implemented during construction of the Project ~~Master Plan improvements~~ to avoid or minimize impacts on water quality:

- Earth-moving in areas draining to wetlands and aquatic habitats will not occur during days when rain is occurring or predicted to occur (i.e., greater than 40 percent chance) during the work period. This measure applies to all Project areas with potential to drain to wetlands or aquatic habitats, particularly in or adjacent to ~~the Southeast Channel, the~~ Sunnyvale West Channel, ~~the~~ Cargill Channel, Moffett Channel, Ponds 1 and 2, and SCVWD Pond A4.

- All permit conditions, legal requirements, and appropriate dredging and engineering practices shall be followed to avoid and minimize water quality impacts ~~associated with Master Plan activities~~. Suitable erosion control, sediment control, source control, treatment control, material management, and stormwater management BMPs will be implemented consistent with the latest edition of the California Stormwater Quality Association "Stormwater Best Management Practices Handbook," available at ~~www.capmphandbooks.com~~ www.casqa.org.

- Spill prevention kits shall always be in close proximity when using hazardous materials (e.g., crew trucks and other logical locations). Feasible measures shall be implemented to ensure that hazardous materials are properly handled and the quality of aquatic resources is protected by all reasonable means when removing vegetation and sediments from the channels. No fueling shall be done in areas immediately adjacent to (i.e., within 50 feet of) channels, ponds, or wetlands. For stationary equipment that must be fueled on site, containment shall be provided in such a manner that any accidental spill of fuel shall not be able to enter the water or contaminate sediments that may come in contact with water. Any equipment that is readily moved out of the channels, ponds, or wetlands shall not be fueled in these sensitive habitat areas or the immediate floodplains surrounding them.

- A hazardous materials management/fuel spill containment plan will be developed and implemented by the construction contractor and given to all contractors and biological monitors ~~working on the Master Plan~~, with at least one copy of the plan located onsite at all times. The purpose of the plan is to provide onsite construction managers, environmental compliance monitors, and regulatory agencies with a detailed description of hazardous materials management, spill prevention, and spill response/cleanup measures associated with the construction activities ~~of Master Plan elements~~. The primary objective of the plan is to prevent a spill of hazardous materials. Elements of the plan will include, but are not limited to the following:

  - A discussion of hazardous materials management, including delineation of hazardous material and hazardous waste storage area, access and egress routes, waterways, emergency assembly areas, and temporary hazardous waste storage areas;

  - Materials Safety Data Sheets for all chemicals used and stored on site;

  - An inventory list of emergency equipment;

  - Spill control and countermeasures including employee spill prevention/response training;
  - Notification and documentation procedures; and
  - A monthly reporting plan.

- Vehicles will be checked daily for oil or fuel leaks and will be washed only at an approved area (existing construction yards or legally operating car washes) ~~as described above for Mitigation Measure BIO-1b~~. No washing of vehicles will occur in work ~~Master Plan~~ areas located outside of the main plant fence line.

- The work site, areas adjacent to the site, and access areas will be maintained in an orderly condition, free and clear from debris and discarded materials. This measure includes work ~~all Master Plan~~ areas located outside of the main plant fence line. Personnel will not sweep, grade, or flush surplus materials, rubbish, debris, or dust onto adjacent areas or waterways. Upon completion of work, all building materials, debris, unused materials, concrete forms, and other construction-related materials will be removed from work ~~Master Plan~~ areas located outside of the main plant fence line.

- Stockpiled materials outside of the main plant fence line will be covered by plastic sheeting, tarps, or similar material that can be secured during wind and rain. A sediment fence or berm will be installed around stockpiled dredged material to prevent runoff from transporting sediment into sensitive habitats (such as the channels, ponds, and wetlands). Heavy equipment will not be operated in the active channels or within wetland habitats, but instead from existing hardscape, access roads, and levees.

- Water conservation methods will ensure that water used in the work ~~Master Plan~~ area does not create surface flows capable of carrying pollutants to the nearby creek channel. All personnel, including sub-contractors will be instructed on the practical methods of preventing leaks or over-use of watering, and will be required to adhere to the practices in the detail sheets provided. Woody debris from tree trimming, and other activities will not be left in the active channels or in wetland habitats.

- In-channel vegetation removal may result in increased local erosion in the channels due to increased flow velocity. To minimize such erosion, the toe of the bank will be protected by leaving vegetation within the channel to the maximum extent practicable.

- Cofferdams or silt fencing will be used to the extent feasible during construction and maintenance activities that could potentially result in substantial siltation of open water. For any work within aquatic or wetland habitats, such as ~~Ponds 1 and 2~~ Moffett Channel, Pond Recirculation Channel, or Cargill Channel, silt curtains will be installed to prevent suspended sediments from migrating out of the immediate work area, and ~~dredging~~ in-water work will be conducted on incoming tides to the extent feasible to further reduce the potential for sediment mobilization outside the work ~~Master Plan~~ area. Prior to removal of coffer dams, water from adjacent areas of the respective water body will be pumped back into the dewatered area to avoid erosion of levees or release of sediment into aquatic habitats (e.g., water from Cargill Channel west of the coffer dam will be pumped into the eastern dewatered area of Cargill Channel). ~~Dredging within aquatic or wetland habitats will be conducted with~~

~~a closed clamshell-style dredge to reduce the amount of suspended sediment produced. Dredge volumes will be documented to ensure compliance with and adequate performance of these measures.~~

Mitigation Measure BIO-2f: California Ridgway's Rail and California Black Rail Measures

The following measures will be implemented for activities outside of the main plant fence line to avoid and minimize impacts on California Ridgway's rails and California black rails, particularly in tidal marsh habitats associated with the Moffett Channel:

- Impacts on tidal wetland habitat of these species will be avoided ~~minimized to the extent feasible~~. Tidal wetland habitat for these species occurs in the northern portions of the work ~~Master Plan~~ area, in association with the Moffett Channel. ~~Suitable tidal wetland habitat for these species is not present within the main plant fence line.~~

- To avoid causing the abandonment of an active nest, construction activities within 700 feet of vegetated tidal marsh providing suitable breeding habitat for Ridgway's rails or black rails (i.e., the area along Moffett Channel north of the point where the marsh ~~begins to~~ widens near the pond circulation pump station ~~just upstream from its confluence with Guadalupe Slough, or the large marsh area along Guadalupe Slough north of Pond 1~~) will be avoided during the breeding season from February 1 through August 31 ~~unless protocol-level surveys are conducted to determine rail locations and territories the same year in which those construction activities occur. If breeding Ridgway's rails or black rails are determined to be present, activities will not occur within 700 feet of areas in which Ridgway's rails or black rails were heard calling during protocol-level surveys. If the intervening distance across a major slough channel (e.g., Moffett Channel or Guadalupe Slough) or across a substantial barrier between the locations of rail detections and any construction activity area is greater than 200 feet, then it may proceed at that location within the breeding season~~.

- If areas within or adjacent to rail habitat cannot be avoided during the breeding season (February 1 through August 31), protocol-level surveys shall be conducted to determine rail nesting locations. The surveys will focus on potential habitat that could be disturbed by construction activities during the breeding season to ensure that rails are not breeding in these locations.

  - Survey methods for rails will follow the *Site-Specific Protocol for Monitoring Marsh Birds*, which was developed for use by the USFWS and partners to improve bay-wide monitoring accuracy by standardizing surveys and increasing the ability to share data (Wood et al. 2017). Surveys are concentrated during the approximate period of peak detectability, January 15 to March 25 and are structured to efficiently sample an area in three rounds of surveys by broadcasting calls of target species during specific periods of each survey round. Call broadcast increase the probability of detection compared to passive surveys when no call broadcasting is employed. The survey protocol for Ridgway's rail is summarized below.

    - Previously used survey locations (points) should be used when available to maintain consistency with past survey results. Adjacent points should be at least 200 meters (656 feet) apart along transects in or adjacent to areas representative of the marsh. Points should be located to minimize disturbances to marsh vegetation. Up to 8 points can be located on a transect.

        - At each transect, three surveys (rounds) are to be conducted, with the first round of surveys initiated between January 15 and February 6, the second round performed February 7 to February 28, and the third round March 1 to March 25. Surveys should be spaced at least one week apart and the period between March 25 to April 15 can be used to complete surveys delayed by logistical or weather issues. A Federal Endangered Species Act Section 10(a)(1)(A) permit is required to conduct active surveys.

        - Each point on a transect will be surveyed for 10 minutes each round. A recording of calls available from USFWS is broadcast at each point. The recording consists of 5 minutes of silence, followed by a 30-second recording of Ridgway's rail vocalizations, followed by 30 seconds of silence, followed by a 30-second recording of California black rail, followed by 3.5 minutes of silence.

    - If no breeding California Ridgway's rails are detected during surveys, or if their breeding territories can be avoided by 700 feet, then Project activities may proceed at that location.

    - If protocol surveys determine that breeding California Ridgway's rails are present in the Project area, the following measures would apply to Project activities conducted during their breeding season (February 1- August 31):

        - A USFWS- and California Department of Fish and Wildlife (CDFW)-approved biologist with experience recognizing California Ridgway's rail vocalizations will be on site during construction activities occurring within 700 feet of suitable rail breeding habitat.

        - If a California Ridgway's rail vocalizes or flushes within 10 meters (33 feet), it is possible that a nest or young are nearby. If an alarmed bird or nest is detected, work will be stopped, and workers will leave the immediate area carefully and quickly. The location of the sighting will be recorded to inform future activities in the area.

        - All crews working in rail habitat during the breeding season will be trained and supervised by a USFWS- and CDFW-approved rail biologist.

- Aside from continued use of recreational trails established prior to the start of the breeding season (which may continue), only routine inspection, maintenance, or monitoring activities that have little potential for effects on rails due to their short durations, distance from rail habitat, or low-magnitude effects may be performed during the breeding season in areas within or adjacent to rail breeding habitat. Otherwise, with USFWS and CDFW approval on a case-by-case basis, construction activities may take place after July 15 in a given area if the activity is thought to be minimally disturbing to breeding rails.

- The extent of impacts near ~~on~~ tidal marsh will be clearly demarcated in the field prior to construction, and no impacts (including construction access) will occur outside those limits.

- Silt fencing or similar material will be installed at the perimeter of work areas, between all areas of earth-moving and marsh ~~outside the impact area~~ to prevent dirt and other materials from entering marsh areas that are not intended to be affected.

- No animals can be brought to the Project site to avoid harassing, killing, or injuring wildlife.
- The Project site will be maintained trash-free, and food refuse will be contained in secure bins and removed daily during construction and dredging.
- Nighttime work near tidal marsh habitat will be avoided to the extent feasible. If nighttime work cannot be avoided, lighting will be directed to the work area and away from tidal marsh habitat.

Burrowing Owl

The burrowing owl (*Athene cunicularia hypugaea*) is known to occur, at least during the nonbreeding season, in the Project vicinity on the closed landfill areas near the main plant, southwest of the former household hazardous waste dropoff site, and west of the Sunnyvale West Channel (Chromczak, 2014). Burrowing owls were formerly known to occur on berms around the eastern portion of the main Plant area (Chromczak, 2014), but they have not been recorded on the main Plant in recent years. More recent (2017, 2021) citizen science observations have been recorded in the vicinity of the WPCP and nearby Pond A8 (iNaturalist, 2022).

No impact on habitat used regularly by burrowing owls is expected to occur. However, if construction activities were to occur within 250 feet of occupied burrowing owl habitat, noise and vibrations from construction activities such as pile-driving could indirectly impact burrowing owls through disturbance and temporary loss of habitat and could directly affect burrowing owls through loss or abandonment of an occupied burrow, particularly if an active owl nest is present. The loss of an owl or an active nest, through direct impact or (more likely) abandonment, would represent a significant impact under CEQA because of the species' regional rarity and population declines. Therefore, Mitigation Measures BIO-2a, Worker Environmental Awareness Training (shown above) and **BIO-2e**, **Burrowing Owl Measures**, would be implemented to reduce potential impacts on burrowing owls to a less-than-significant level. This measure has been adjusted as necessary to make it apply to the Project. The adjusted mitigation measure does not change the original impact conclusions from the PEIR, nor is it considerably different from that analyzed in the PEIR.

Mitigation Measure BIO-2e: Burrowing Owl Measures

The following measures will be implemented to avoid and minimize impacts on burrowing owls in the ~~Master Plan~~ work area, particularly on the closed landfill and along the Sunnyvale West Channel but also including areas ~~within~~ along the main plant fenceline that may support ground squirrel burrows:

- Preconstruction surveys for burrowing owls will be conducted by a qualified biologist prior to all construction activities that occur within 250 feet of potential burrowing owl habitat ~~on the closed landfill or along the Sunnyvale West Channel~~, in conformance with CDFW protocols. This measure applies to construction activities inside of the main plant fenceline only where ground squirrel burrows are present ~~or for those activities located within 250 feet of suitable burrowing owl habitat on the closed landfill or Sunnyvale West Channel~~. The final survey will occur no more than 2 days prior to the start of any ground-disturbing activity such as clearing and grubbing, excavation, or grading, or any similar activity within 250 feet of suitable

habitat that could disturb nesting owls. If no burrowing owls are located during these surveys, no additional action would be warranted. However, if burrowing owls are located on or immediately adjacent to impact areas, the following measures would be implemented.

- If burrowing owls are present during the nonbreeding season (generally 1 September to 31 January), the City/contractor would maintain a 150-foot buffer zone, within which no new ~~Master Plan~~ Project-related activity would occur, around the occupied burrow(s) if feasible. However, this buffer distance would not apply to existing operations and maintenance activities in the main plant. A reduced buffer distance is acceptable during the nonbreeding season as long as construction avoids direct impacts on the burrow(s) used by the owls. During the breeding season (generally 1 February to 31 August), a 250-foot buffer, within which no new ~~Master Plan-related~~ activity would be permissible, would be maintained between ~~Master Plan~~ activities and occupied burrows. Owls present at burrows on the site after 1 February would be assumed to be nesting on or adjacent to the site unless evidence indicates otherwise. This protected area would remain in effect until 31 August, or based upon monitoring evidence, until young owls are foraging independently or until the nest is no longer active.
- In the unlikely event that an occupied burrowing owl burrow is within the construction footprint (e.g., on the bank of a levee), and the burrow cannot be avoided, the owl will be evicted from the burrow by a qualified biologist using one-way doors. The biologist will leave the one-way doors in place for at least 48 hours, checking them daily to ensure that they are functioning properly. If the biologist cannot be certain that the owl is outside the burrow (e.g., if the one-way doors were installed when the owl was inside the burrow and the owl cannot be detected outside later), then the burrow will be excavated by hand prior to being filled to ensure that no owl is trapped inside. Otherwise, the burrow will be backfilled after the owl has been evicted. No burrowing owls will be evicted from burrows during the nesting season unless evidence indicates that nesting is not actively occurring (e.g., because the owls have not yet begun nesting early in the season, or because young have already fledged late in the season).

Salt Marsh Harvest Mouse and Salt Marsh Wandering Shrew

The brackish tidal marsh in Moffett Channel north of the plant is considered potential salt marsh harvest mouse (*Reithrodontomys raviventris*) and salt marsh wandering shrew (*Sorex vagrans halicoetes*) habitat. This vegetation type is fragmented and the potential for these species to occur in these marshes is fairly low but cannot be discounted. Salt marsh harvest mice and salt marsh wandering shrews are unlikely to occur in coastal brackish marsh dominated by pure stands of cattail (*Typha* spp.) and California bulrush (*Schoenoplectus californicus*) along Sunnyvale West Channel and Moffett Channel adjacent to the main Plant or in the small amounts of brackish marsh in Cargill Channel where patches are isolated and narrow (10 feet wide or less).

Construction activities may result in the harassment, harm, injury, death, or otherwise interfere with the normal behavior (e.g., feeding, sheltering, and movement between refugia and foraging grounds) of salt marsh harvest mice and salt marsh wandering shrew through crushing by equipment and vehicles, habitat degradation, and noise and vibrations. Intolerable levels of disturbance that may force individual mice or shrews to flush from cover or prevent them from

seeking available cover could expose them to a predation risk that otherwise would not occur. Given the lack of high-quality habitat near the construction areas, implementation of modified **Mitigation Measure BIO-2g, Salt Marsh Harvest Mouse and Salt Marsh Wandering Shrew Measures,** would reduce impacts to less-than-significant levels. This measure has been adjusted as necessary to make it apply to the Project. The adjusted mitigation measure does not change the original impact conclusions from the PEIR, nor is it considerably different from that analyzed in the PEIR.

Mitigation Measure BIO-2g: Salt Marsh Harvest Mouse and Salt Marsh Wandering Shrew Measures

The following measures will be implemented for activities outside of the main plant fence line to avoid and minimize impacts on the salt marsh harvest mouse and salt marsh wandering shrew, particularly in marsh habitat associated with ~~the~~ Moffett Channel and Cargill Channel:

- A USFWS and CDFW-approved biologist, with knowledge and experience with salt marsh harvest mouse and salt marsh wandering shrew habitat requirements, will conduct pre-construction surveys for these species and identify and mark suitable habitat prior to Project initiation.

- ~~Impacts on pickleweed and wetland habitat that may support these species will be minimized to the extent feasible. Wetland habitat that may support these species occurs in the northern portion of the Master Plan area, in association with the Moffett Channel and the Cargill Channel. No suitable habitat for these species occurs within the main plant fence line.~~

- To avoid the loss of individual harvest mice or wandering shrews from any excavation, fill, or construction activities in suitable habitat, vegetation removal and fill in marsh habitats, including the Moffett Channel and the Cargill Channel, will be limited to the minimum amount necessary. ~~to implement the Master Plan improvements.~~ Wherever feasible, sufficient pickleweed habitat will remain adjacent to the activity area to provide refugia for displaced individuals.

- In areas where salt marsh harvest mice or wandering shrew habitat will be affected, vegetation and debris that could provide cover for mice will be removed using only mechanized hand tools, or by another method approved by the USFWS and CDFW, at least three weeks prior to the commencement of construction activities. Vegetation removal will occur under the supervision of a qualified biologist. The vegetation will be removed on a progressive basis, such that the advancing front of vegetation removal moves toward vegetation that would not be disturbed. In some cases, temporary shelter consisting of dead vegetation may be positioned to provide escape routes to suitable habitat. A qualified biologist will monitor the vegetation removal and make specific recommendations with respect to the rate of vegetation removal (to ensure that any harvest mice or wandering shrews present are able to escape to cover that will not be affected), whether vegetation needs to remain in a certain area temporarily to facilitate dispersal of mice into habitat outside the impact area, and whether any berms are necessary to allow mice or shrews to disperse across wetted channels.

- Following the ~~hand-~~removal of vegetation in areas where these species may be affected, exclusion fencing will be erected as needed between construction areas and

harvest mouse/wandering shrew habitat that is to remain unaffected to define and isolate protected habitat for these species. This fencing will consist of ~~heavy plastic sheeting or metal~~ material that cannot be climbed by harvest mice or wandering shrews, or similar Resource Agency-approved exclusion materials, buried at least 4 inches below the ground's surface and with at least 1 foot (but no more than 4 feet) above the ground. All supports for the fencing will be placed on the inside of the work area. A 4-foot buffer will be maintained free of vegetation around the outside of the exclusion fencing. The fencing will be inspected daily during construction, and any necessary repairs will be made within 24 hours of when they are found. If any breaks in the fencing are found, a qualified biologist will inspect the work area for salt marsh harvest mice or wandering shrews. If any individual harvest mice are found within the impact footprint, they will be allowed to move on their own (although shrews may be relocated by a qualified biologist) to vegetated areas outside the impact footprint.

- During construction in areas where salt marsh harvest mice and wandering shrews may be affected, a qualified biologist will check underneath vehicles and equipment for these species before such equipment is moved during each day of construction, unless the equipment is surrounded by exclusion fencing. ~~Based on current design concepts, the Master Plan is expected to affect approximately 1.5 acres of tidal coastal brackish marsh (in the Moffett Channel) and another 0.5 acre of non-tidal salt marsh (in the Cargill Channel) that could potentially support these species through raising (and as a result widening) an access road and construction of a new pipeline segment to the diurnal equalization basins. To compensate for these habitat impacts, the City will provide mitigation through a combination of (a) the purchase of credits in an approved conservation bank that provides habitat suitable for use by these species and/or (b) tidal marsh habitat restoration onsite or offsite. Owing to the relatively low quality of habitat provided by the wetlands to be affected by Master Plan activities, this mitigation will be provided at a minimum ratio of 1:1 (mitigation:impact) on an acreage basis. This mitigation can be provided using the same mitigation area as described in Mitigation Measure BIO-3b for wetlands as long as the habitat is suitable for the salt marsh harvest mouse and salt marsh wandering shrew and provides vegetated wetlands adequate to compensate for impacts on these species' habitats at a 1:1 ratio.~~

  ~~Prior to construction, the City will purchase credits from an approved conservation bank and/or prepare a Habitat Mitigation and Monitoring Plan (HMMP) describing the proposed creation of mitigation habitats that will satisfy the mitigation requirements. Impacts on habitat of the salt marsh harvest mouse and salt marsh wandering shrew may not commence until the adequate credits in a conservation bank have been purchased and/or the City prepares the HMMP. The HMMP will be prepared by a qualified restoration ecologist and will include the following:~~

  - ~~A summary of impacts on these species' habitats and the proposed mitigation acreage~~
  - ~~Goals of the restoration to achieve no net loss of habitat functions and values for these species~~
  - ~~The location of the mitigation site and description of existing site conditions~~
  - ~~Mitigation design:~~

- ~~Existing and proposed site hydrology, geomorphology, and geotechnical stability, if applicable~~
- ~~Grading plan if appropriate, including bank stabilization or other site stabilization features~~
- ~~Soil amendments and other site preparation elements as appropriate~~
- ~~Planting plan~~
- ~~Irrigation and maintenance plan~~
- ~~Construction schedule~~

~~– Monitoring plan (including specific, objective final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc.). Performance criteria will include demonstration of the presence of appropriate vegetation for these species within 10 years of mitigation implementation and presence of at least one of these two small mammal species within 10 years of the establishment of appropriate vegetated habitat.~~

~~A contingency plan for mitigation elements that do not meet performance or final success criteria; this plan will include specific triggers for remediation if performance criteria are not being met.~~

- If a salt marsh harvest mouse or salt marsh wandering shrew is discovered, construction activities will cease in the immediate vicinity of the individual mouse/shrew until the individual has been allowed to leave the construction area.

Special-Status Fish

Special-status fish, including Central Valley Fall-run Chinook salmon (*Oncorhynchus tshawytscha*), Central California Coast steelhead (*Oncorhynchus mykiss*), longfin smelt (*Spirinchus thaleichthys*), and green sturgeon (*Acipenser medirostris*), have the potential to occur within Moffett Channel, albeit infrequently and/or in low numbers. None of these species are expected to spawn within affected portions of Moffett Channel or in the upstream portion of Sunnyvale West Channel, primarily due to the lack of suitable spawning habitat. The tidal waters in this area are also considered Essential Fish Habitat (EFH) by the National Marine Fisheries Service (NMFS). Coffer dam installation and subsequent dewatering activities within Moffett Channel would result in direct impacts on special-status fish, if present during construction, and temporary impacts on EFH that may include temporary impairment of water quality and increased turbidity. Noise and vibrations from excavation, sheet pile driving for dewatering, and pile driving for foundations could disrupt the behavior and movement of fish in adjacent waterways. Noise and vibrations from pile driving can even injure or kill fish if loud enough, or if pile driving occurs close enough to fish. In addition, impacts on water quality during construction outside of waters could potentially affect these species if construction materials, sediment, or pollutants enter the water.

Impacts on individual special-status fish (e.g., from adverse water-quality effects, vibration, or noise) are potentially significant given the low population sizes of these species in the South Bay. Potential impacts on special-status fish would be reduced to a less-than-significant level with implementation of Mitigation Measures BIO-2a, Worker Environmental Awareness Training (shown above), BIO-2b, Minimization of Impacts on Water Quality (shown above), and **BIO-2c**,

Special-Status Fish Measures. This measure has been adjusted as necessary to make it apply to the Project. The adjusted mitigation measure does not change the original impact conclusions from the PEIR, nor is it considerably different from that analyzed in the PEIR.

Mitigation Measure BIO-2c: Special-Status Fish Measures

The following measures will be implemented during construction of the ~~Master Plan~~ Project to avoid or minimize impacts on special-status fish species:

- Impacts on tidal waters where special-status fish and Essential Fish Habitat may occur will be minimized to the extent feasible.
- Construction activities in, or directly adjacent to, waters where green sturgeon, longfin smelt, steelhead, or Chinook salmon may be present will be performed between June 1 and November 30. These waters include but are not limited to the Moffett Channel and the Sunnyvale West Channel.
- Activities that extend into the waters where special-status fish may be present~~, such as levee breaching for active restoration of Ponds 1 and 2,~~ will be performed at low tide and/or under de-watered conditions, to the extent practicable.
- A Fish Rescue Plan will be developed for in-water work and coffer dam dewatering activities where special-status fish may be present. The plan will require that a qualified fisheries biologist approved by the Service and NMFS supervise fish rescue and relocation efforts in in-water work areas. The Fish Rescue Plan will include reporting requirements to the Service and NMFS and describe methods for minimizing the risk of stress and mortality due to capture and handling of fishes removed from the construction site and returned to downstream waterways.
- ~~If pile driving or installation of temporary sheet piles is necessary during construction or restoration activities outside of the main plant fenceline, such as for earthwork, foundations, or dewatering, then~~ ~~pile~~ Pile driving where special-status fish may be present will be performed using a vibratory hammer to minimize the potential effects of noise and pressure-waves on fish.
- NMFS personnel will be immediately notified of any observed fish mortality events associated with ~~Master Plan~~ Project activities.
- ~~Tidally restored ponds will contain channels that are adequate for the ingress and egress of fish with tidal circulation to avoid fish stranding.~~
- Treated wood will not be used in structures that may come into contact with water.

Western Pond Turtle

Western pond turtle (*Actinemys marmorata*) has the potential to occur within aquatic habitats in the Project area, including Cargill Channel, Moffett Channel, and the Pond Recirculation Channel. Construction-related activities may result in the loss of individual turtles due to injury or mortality from heavy equipment or earth-moving. In addition, impacts on water quality during construction could potentially affect this species if construction materials, sediment, or pollutants enter water occupied by this species. Impacts on western pond turtles are potentially significant given the low numbers of individuals comprising metapopulations of this species in the South

Bay. Potential impacts on western pond turtles would be reduced to a less-than-significant level with implementation of Mitigation Measures BIO-2a, Worker Environmental Awareness Training (shown above) and BIO-2b, Minimization of Impacts on Water Quality (shown above) to address potential water-quality impacts during construction, and **BIO-2d, Western Pond Turtle Measures**. This measure has been adjusted as necessary to make it apply to the Project. The adjusted mitigation measure does not change the original impact conclusions from the PEIR, nor is it considerably different from that analyzed in the PEIR.

Mitigation Measure BIO-2d: Western Pond Turtle Measures

The following measures will be implemented to avoid and minimize impacts on western pond turtles in portions of the ~~Master Plan~~ work area outside of the main plant fenceline, particularly in or near the Sunnyvale West Channel:

- Impacts on aquatic habitat of the western pond turtle such as the Sunnyvale West Channel, will be minimized to the extent feasible.
- A qualified biologist shall conduct a survey for western pond turtles and their nests immediately (i.e., within 2 hours) prior to commencement of work along aquatic habitat~~the Sunnyvale West Channel~~. If a western pond turtle is found in an area where it could be injured or killed by ~~Master Plan improvement~~ Project activities, the biologist will relocate the turtle to an appropriate site outside the construction area.
- Following the initial survey, a construction crewmember who has been trained to identify western pond turtles by a qualified biologist shall conduct a survey of the work area along aquatic habitats ~~the Sunnyvale West Channel area~~ each morning prior to the onset of construction activities. If a turtle is located, all work in the vicinity shall immediately cease, and a qualified biologist shall be contacted. Work within the area shall not resume until the turtle has been relocated or has moved on its own out of the construction area.
- If an active western pond turtle nest is detected within the activity area, a 25 foot-buffer zone around the nest will be established and maintained during the nesting season (April 1 through August 31) until the young have left the nest or it is no longer active due to predation, as determined by a qualified biologist.

Other Nesting Birds

Several other species of special-status birds, as well as other common bird species protected under the Migratory Bird Treaty Act and California Fish and Game Code, have the potential to nest within the vicinity of the Project site. Nesting habitat for these species would be reduced as a result of construction, nests of these species could be destroyed, and nesting birds could be disturbed as a result of virtually any of the construction activities. Even if nests are not physically disturbed, construction near active nests could cause the abandonment of those nests by adults, potentially resulting in the loss of eggs or young.

Most of these species are regionally common and, therefore, the proportion of regional populations of these species that could be adversely affected by Project activities is relatively low. However, owing to the high bird diversity associated with habitats in and adjacent to the Project site, construction activities have the potential to result in the loss of active bird nests, in

the absence of mitigation measures. Implementation of **Mitigation Measure BIO-2h, Nesting Bird Measures,** would reduce impacts on nesting birds to less-than-significant levels. This measure has been adjusted as necessary to make it apply to the Project. The adjusted mitigation measure does not change the original impact conclusions from the PEIR, nor is it considerably different from that analyzed in the PEIR.

Mitigation Measure BIO-2h: Nesting Bird Measures

The following measures will be implemented throughout the ~~Master Plan~~ work area to minimize impacts on nesting San Francisco common yellowthroat, Alameda song sparrow, and other native bird species:

- Nesting deterrence can be implemented to minimize the potential for nesting birds to constrain Project activities or to be adversely affected by those activities. ~~The most effective nesting deterrence in non - developed portions of the main plant is vegetation removal to remove nesting substrate.~~ Vegetation that is to be affected by the Project should be removed during the nonbreeding season (i.e., September 1 through January 31) if feasible. If necessary, removal of nest-starts (incomplete nests that do not yet contain eggs or young) by qualified biologists may occur during the breeding season. Such nest-start removal may begin early in the breeding season (e.g., February) and continue regularly until vegetation can be removed and construction commences. Some species, such as barn swallows (*Hirundo rustica*) or black phoebes (*Sayornis nigricans*), may establish nests on buildings or other structures. To deter birds from nesting on structures, netting or other deterrence devices may be installed to preclude birds from constructing nests. Such nesting deterrence should be implemented under the supervision of qualified biologists in order to prevent death or injury of birds or other wildlife as a result of improperly installed deterrence devices, and such devices will require regular maintenance to ensure that they are functioning properly.

- Prior to commencement of new activities (i.e., activities that are not currently ongoing in any given area) during the breeding season (February 1 through August 31), preconstruction surveys will be conducted by a qualified biologist no more than 7 days prior to the initiation of new disturbance in any given area to ensure that no active nests of species protected by the Migratory Bird Treaty Act or California Fish and Game Code will be disturbed during ~~Master Plan~~ Project implementation. During this survey, the biologist will inspect all potential nesting habitats (e.g., trees, shrubs, buildings, and various substrates on the ground) in the Project area for nests. ~~This survey will include suitable nesting substrates both within and outside the main plant fenceline.~~ Surveys will be conducted within search radii corresponding to disturbance-free buffer zones described below for raptors (300 feet) and non-raptors (100 feet), including in offsite areas adjacent to the ~~Master Plan~~ Project area (where such areas are accessible ~~and are contained in the buffer zones~~).

- If an active nest is found, a qualified biologist will determine the extent of a disturbance-free buffer zone to be established around the nest until nesting has been completed. Disturbance-free buffer zones are typically 300 feet for raptors and 100 feet for non-raptors, although factors such as existing disturbance and vegetation or structures that screen construction activities from a nest will be considered in determining the appropriate buffer. Nests will be considered active until surveys conducted by a qualified ornithologist confirm nesting is complete. However,

construction within these radii may proceed if, based on monitoring of the bird's behavior, a qualified biologist determines that such activities are not likely to result in the abandonment of the nest. Pursuant to ~~Per~~ CDFW recommendations, monitoring will be conducted as follows:

- A qualified biologist will monitor activity at each nest for three days prior to the onset of construction activities to develop a baseline of the normal behavior of the birds attending the nest. If the behavior observed at the nest is consistent on Days 1 and 2 of monitoring, Day 3 of monitoring may be skipped.
- A qualified biologist will monitor activity at each nest for 8 hours on the first day that construction occurs within the standard buffer (e.g., within 100 feet of a non-raptor nest). If the biologist determines that the birds' behavior is not adversely affected, ~~Master Plan~~ Project activities may continue. The biologist should continue to monitor the nests for 1 hour/day on any day when construction activities occur within the standard buffer around an active nest.
- If at any time the biologist determines that ~~Master Plan~~ Project activities within the standard buffer is adversely affecting the behavior of the birds such that the nest is in jeopardy of failing, construction activities should retreat to honor the standard buffer until the nest is no longer active (i.e., the young have fledged).

Open Water and Wetland Habitats

Proposed Project activities, which would involve dewatering, pipeline excavation, and installation of an access ramp and multiple temporary bypass pipelines, would result in temporary impacts on open water, muted-tidal wetlands, and tidal wetlands within Cargill Channel, Moffett Channel, and the Pond Recirculation Channel. An approximate total of 9.44 acres of Cargill, Moffett, and Pond Recirculation Channel habitat would be dewatered as part of the Project. Based on a recent aquatic resources delineation conducted by ESA (ESA, 2022), Cargill Channel and Moffett Channel are expected to meet the definition of Waters of the U.S./State. Coastal brackish marsh is present within and directly adjacent to the Sunnyvale West Channel and the upper portions of the marsh along the Moffett Channel. Northern coastal salt marsh is present as a narrow strip along the Cargill Channel. Because it is part of the wastewater treatment system, the Pond Recirculation Channel is not expected to be a water of the U.S. or State.

Impacts on water quality could occur during in-water work (i.e., installation of coffer dams and dewatering activities) and if, during other construction activities, construction materials, sediment, or pollutants enter the water. Construction stormwater best management practices required under the NPDES Construction General Permit (described in PEIR Section 4.9, Hydrology) would reduce impacts on water quality and hydrology; implementation of Mitigation Measure BIO-2a, Worker Environmental Awareness Training (shown above), would help reduce impacts during construction; and implementation of Mitigation Measure BIO-2b, Minimization of Impacts on Water Quality (shown above), would reduce construction impacts on water quality. Implementation of those measures, as well as **Mitigation Measures BIO-3a**, **Avoidance of Open Water and Wetland Habitats**, and **BIO-3b**, **Compensatory Mitigation for Aquatic and Wetland Habitats** (refer to Table 4 in Chapter 5 for the full text of Mitigation Measure BIO-3b), would reduce impacts on jurisdictional wetlands and other waters to less-than-significant levels. Mitigation

Measure BIO-3a has been adjusted as necessary to make it apply to the Project. The adjusted mitigation measure does not change the original impact conclusions from the PEIR, nor is it considerably different from that analyzed in the PEIR.

Mitigation Measure BIO-3a: Avoidance of Open Water and Wetland Habitats

- Detailed design of ~~WPCP improvements for the Master Plan.~~ the Project will avoid and minimize impacts on open water and wetland resources to the extent feasible.
- If open water and wetland habitats are present within 100 feet or less of the limits of disturbance ~~in the Master Plan~~ Project area, avoidance buffers shall be maintained between construction areas and the aquatic resources ~~those habitats and construction areas that drain directly to them~~. These buffers should be at least 50 feet for general construction activities and 100 feet for grading, to the extent feasible. The avoidance buffers shall be designated as Environmentally Sensitive Areas and clearly identified in the field using orange fencing. No equipment, vehicles, or personnel are permitted within Environmentally Sensitive Areas. Environmentally Sensitive Areas shall be shown on Project plan sets. All Environmentally Sensitive Area fencing shall be maintained intact and in good condition throughout the duration of construction.
- Any temporarily affected aquatic and wetland habitats will be restored to preconstruction elevations and contours, and temporarily affected wetlands will be revegetated using native plant species appropriate for the salinity, elevation, and location of the affected area.

Migratory Wildlife Corridors and Nursery Sites

A diverse assemblage of urban-adapted native resident and migratory fish and wildlife species use freshwater streams for movement through the Santa Clara Valley. Narrow levees and regular disturbance due to routine maintenance and recreational use within the Project area preclude it from acting as a significant wildlife corridor or nursery site. As a result, construction of the Project would not substantially interfere with movement of terrestrial wildlife species. Coffer dam installation in Moffett Channel would result in a temporary disruption of channel connectivity during construction. Given the lack of suitable spawning habitat and short, seasonal duration of impacts within Moffett Channel (refer to Mitigation Measure BIO-2c), impacts on migratory fish species and other aquatic species would be less than significant. As such, impacts related to movement of wildlife species or use of wildlife nursery sites caused by the Project would not result in any new or more significant impacts than those identified in the certified PEIR.

Biological Communities, Local Policies and Ordinances

Project activities are not anticipated to result in tree removal. As previously described, Project activities, which would involve dewatering, pipeline excavation, and installation of an access ramp and multiple temporary bypass pipelines, would result in temporary impacts on open water, coastal brackish wetlands, and northern coastal salt marsh within Cargill Channel, Moffett Channel, and the Pond Recirculation Channel. Implementation of Mitigation Measure BIO-2a, Worker Environmental Awareness Training (shown above), would reduce impacts during construction. In addition, implementation of Mitigation Measures BIO-3a, Avoidance of Open Water and Wetland Habitats, and BIO-3b, Compensatory Mitigation for Aquatic and Wetland

Habitats (shown above and in Table 4 in Chapter 5), would reduce impacts on jurisdictional wetlands and other waters to less-than-significant levels.

3.4.4 Conclusion

With implementation of adopted Mitigation Measures BIO-1a and modified Mitigation Measures BIO-2a, BIO-2b, BIO-2c, BIO-2d, BIO-2e, BIO-2f, BIO-2g, and BIO-2h, the Project would not result in any new or more significant impacts on special-status wildlife and plants than those identified in the certified PEIR. Impacts related to movement of wildlife species or use of wildlife nursery sites caused by the Project are less than significant and would not result in any new or more significant impacts than those identified in the PEIR.

With implementation of adopted Mitigation Measure BIO-3b and modified Mitigation Measures BIO-2a and BIO-3a, the Project would not result in any new or more significant impacts on sensitive natural communities, riparian habitat, or wetlands during construction and operation compared to those identified in the certified PEIR.

The current Project is outside of the Santa Clara Valley Habitat Conservation Plan /Natural Community Conservation Plan permit area and is not within any other habitat conservation plan area. Therefore, the Project would not result in any new or more significant impacts than those identified in the certified PEIR.

3.5 Hydrology and Water Quality

Issues (and Supporting Information Sources):	*Potentially Significant Effects Not Identified in Prior EIR*	*Potentially Substantial Increase in Severity of Significant Impact Identified in Prior EIR*	*Sponsor Declines to Adopt Feasible Mitigation Measures or Alternatives*	*No New or More Severe Significant Effects*
HYDROLOGY AND WATER QUALITY — Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☐	☒
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through addition of impervious surfaces, in a manner which would:	☐	☐	☐	☒
i) Result in substantial erosion or siltation on- or off-site;	☐	☐	☐	☒
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☐	☒
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☐	☒
iv) Impede or redirect flood flow?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

3.5.1 Setting

The environmental setting relevant to hydrology and water quality for the Project site has not changed since adoption of the PEIR, with the exception of two National Pollutant Discharge Elimination System (NPDES) permits under which the Sunnyvale WPCP is permittee or co-permittee (described below). Setting discussions from the adopted PEIR for water quality standards, groundwater, surface water drainage patterns, and flood and inundation hazards are applicable to the Project.

Effective April 1, 2020, Order No. R2-2014-0035 (Waste Discharge Requirements for Sunnyvale Water Pollution Control Plant and wastewater collection system) issued by the San Francisco Bay Regional Water Quality Control Board [RWQCB] was rescinded and replaced by Order No. R2-2020-0002 (RWQCB, 2020). Order No. R2-2020-0002 sets effluent limitations and discharge

specifications for water discharged to Moffett Channel and San Francisco Bay from the Sunnyvale WPCP. The effluent limitations in the order are the same as shown in PEIR Table 4.10-7 with the exception of enterococcus bacteria, nickel, cyanide, and bis (2-Ethylhexyl) phthalate. The revised numeric effluent limitations are listed in **Table 3**, below.

TABLE 3
SELECT REVISED NUMERIC EFFLUENT LIMITATIONS FOR THE WPCP

Parameter	Units	Average Monthly	Average Weekly	Maximum Daily	Other
Previous Order					
Enterococcus bacteria	Not Applicable	-	-	-	30-day mean not to exceed 35 colonies/100 mL
Nickel[b]	µg/L	24	-	35	-
Cyanide, Total[b]	µg/L	7.5	-	17	
Bis (2-Ethylhexyl) Phthalate[b]	µg/L	5.9	-	12	
Turbidity	NTU	-	-	-	Instantaneous maximum limit of 10 NTU
Revised (Current) Order					
Enterococcus bacteria	Not Applicable	-	-	-	Six-week mean not to exceed 30 colonies/100 mL No more than 10% samples > 110 CFU/100 mL
Nickel[b]	µg/L	24	-	33	-
Cyanide, Total[b]	µg/L	7.0	-	17	-
Bis (2-Ethylhexyl) Phthalate[b]		n/a	n/a	n/a	n/a
Turbidity	NTU	-	-	-	Instantaneous maximum limit of 10 NTU From October 1 through May 31, only applies when total suspended solids exceeds 20 mg/L

NOTES:
[a] Unit Abbreviations: mL = milliliters; µg/L = micrograms per liter; NTU = Nephelometric Turbidity Units; CFU = Colony Forming Units
[b] Limitations apply to the average concentration of all samples collected during the averaging period (daily ~ 24-hour period; monthly ~ calendar month)

SOURCE: RWQCB, 2020

Effective January 1, 2018, Order No. R2-2012-0096 (Mercury and PCBs Watershed Permit, NPDES No. CA0038849) issued by the San Francisco Bay RWQCB was rescinded and replaced by Order No. R2-2017-0041. The Sunnyvale WPCP is co-permittee to this order, which sets requirements for mercury and PCB concentrations in the WPCP effluent. The effluent limitations for average monthly and maximum daily PCB concentrations are the same as those specified for the Sunnyvale WPCP in the previous order and shown in PEIR Table 4.10-7. Similarly, the effluent limitations for average weekly and monthly mercury concentrations are the same as shown in PEIR Table 4.10-7.

3.5.2 Findings of Previously Adopted PEIR

The adopted PEIR determined that all Project impacts related to hydrology and water quality would be less than significant or less than significant with mitigation. Chapter 5, *Mitigation Monitoring and Reporting Program*, reproduces adopted mitigation measures applicable to hydrology and water quality impacts from the Project.

3.5.3 Discussion

The Project would not change the wastewater treatment technologies beyond what was evaluated in the PEIR, and therefore would not alter treated water quality. However, portions of pipeline replacement and rehabilitation would occur in areas not evaluated for impacts in the PEIR (buried below Cargill Channel). The following discussion focuses on impacts groundwater and flooding during construction and operations compared with the analysis conducted in the adopted PEIR.

Water Quality

As the construction of the Master Plan improvements, including the project, would be considered part of a common plan of development, all upland activities outside of the main plant regardless of size would be required to obtain coverage for construction stormwater discharges under the Construction General Permit and provide evidence of compliance to the City of Sunnyvale. Adherence to the Construction General Permit would require preparation of a stormwater pollution prevention plan (SWPPP) outlining construction best management practices (BMPs)related to housekeeping (e.g., storage of construction materials, waste management, vehicle storage and maintenance, pollutant control); non-stormwater management; erosion and sediment control; and run-on run-off control. Implementation of the SWPPP would reduce sediment or other pollutant discharges from upland construction, thereby protecting beneficial uses and adhering to basin plan requirements. The SWPPP would reduce the potential impact related to the discharge of water quality pollutants associated with upland construction activities to a less-than-significant level.

The coffer dam used during construction would exclude excavation and associated activities from adjacent water bodies, protecting water quality during excavation and pipeline replacement. However, during installation of the coffer dam and work along the levees, construction activities could release water quality pollutants into adjacent areas of Moffett Channel, Cargill Channel, and the Pond Recirculation Channel if not adequately managed, potentially impacting water quality. Sudden releases of water during coffer dam removal could also cause erosion and release sediment into Moffett and Cargill Channels if not properly controlled. Implementation of **Mitigation Measure BIO-2b**, **Minimization of Impacts on Water Quality**, as modified in Section 3.4, Biological Resources, would reduce the Project's potential impacts on water quality by requiring use of silt curtains during in-water work, requiring controlled reintroduction of water to dewatered areas, requiring spill containment for activities that handle fuels and hazardous materials, and implementing "good housekeeping" at the work site and access areas, among other measures.

Under current conditions a siphon connects Cargill Channel with Valley Water's Pond A4. When water quality in Pond A4 approaches a threshold, water from Cargill Channel is drawn through the siphon by a pump in Pond A4 operated by Valley Water to dilute Pond A4 to improve the pond's

water quality. To maintain the connection to Pond A4 and maintain Pond A4 water quality, while the coffer dam is in place in Cargill Channel water from Cargill Channel west of the coffer dam would be pumped via a bypass pipeline to Pond A4, as shown on Figure 6. Operation of the bypass pipeline during dewatering would avoid affecting Pond A4 water quality during construction.

The primary effluent pipeline would be rehabilitated with cured in place (CIPP) methods that would not require ground disturbance.[3] The pipeline lining would be cured using either steam or ultraviolet (UV) light, and the pipeline would not be used until curing is complete. During primary effluent pipeline rehabilitation the completed pond return pipeline would be used to convey primary effluent to the oxidation ponds.

CIPP lining uses a resin soaked felt liner that is inverted into the host pipe, and then cured in place. The curing resins used vary, but can include volatile organic carbons (VOC) including styrene, which can be toxic to aquatic species if released into the environment and therefore can potentially violate water quality standards where beneficial uses include aquatic species.

As shown on Figure 4, the 60-inch diameter primary effluent pipeline connects the primary treatment process facilities to the approximately 430-acre oxidation ponds. The primary effluent pipeline is designed to contain partially-treated wastewater such that it is not released into the environment. The primary effluent pipeline is made of reinforced concrete with two steel siphons under Moffett and Cargill Channels. The interiors of the siphons are lined with coal-tar epoxy. A condition assessment completed in 2014 found some concrete corrosion and noted that both siphons contain sludge. The oxidation ponds have been used continuously for wastewater treatment for at least 50 years and are also designed to reduce the likelihood of releasing pollutants into surrounding waters and habitats.

A recent water quality study focused on cure in place pipeline found that the curing method and the duration of curing had a strong influence on the potential for resin constituents to leach from the pipelines once in use (Office of Water Programs, California State University Sacramento, 2017). UV cure methods were found to be most protective of aquatic species. For pipelines rehabilitated with cure in place pipeline in saturated soil conditions, preventing water flow through the rehabilitated pipeline for more than 96 hours after CIPP installation substantially reduced leaching of VOCs, and the use of steam to cure the CIPP also enhanced curing and reduced leaching (Office of Water Programs, California State University Sacramento, 2017).

As noted above, the CIPP lining of the primary effluent pipeline would be UV or steam-cured and would be allowed to fully cure prior to reoperation of the pipeline, which would reduce the potential for resin constituents to leach from the cured liner. Due to the size of the pipeline and the volumes of water conveyed through the pipeline, any constituents that leach from the CIPP lining would be diluted before reaching the ponds. Further, volatiles such as styrene rapidly separate (within 40 hours) from quiescent water such as the treatment ponds (Office of Water Programs, California State University Sacramento, 2017). Water in the ponds is further treated prior to discharge into Moffett Channel. The oxidation ponds also have low ecological habitat value given their continuous

[3] Cured-in-place-pipe lining uses a resin soaked felt liner that is inverted into the host pipe, and then cured in place via hot water or stream.

operation as wastewater treatment ponds and likely are not considered waters of the state. For these reasons, the rehabilitation of the primary effluent pipeline using CIPP methods would not violate water quality standards or otherwise degrade water quality.

With implementation of SWPPP best management practices for upland activities and Mitigation Measure BIO-2b, Project construction would not degrade water quality and impacts would be less than significant.

The secondary effluent and pond return pipelines are buried and submerged. The primary effluent pipeline CIPP lining would not alter the exterior location or shape of the primary effluent pipeline. The Project would not alter drainage patterns or provide substantial additional sources of polluted runoff as there would be no change to current topography or impervious areas associated with the Project. During operations the Project would have less-than-significant impacts on stormwater quality and drainage patterns because the pipelines would be replaced or rehabilitated in their current locations and disturbed areas would be returned to existing grade once replacement is complete.

Groundwater

Shallower unconfined groundwater is present in the Project vicinity, at depths of approximately 12 feet below ground surface at the project site within the main plant (Geosyntec, 2018). An aquitard separates the shallow groundwater from the deeper aquifers of the Santa Clara Basin and prevents groundwater impacted by landfill waste and leachate from moving downward (RWQCB, 2004). As discussed in PEIR Impact HYD-4 (beginning on PEIR page 4.9-36), shallow groundwater beneath the landfill is influenced by surface water ponds, channels, ditches, storm drain pipelines, and sanitary sewers (RWQCB, 2004).

A Corrective Action Program is in place to monitor and control the flow of leachate and impacted groundwater from the landfill (Order No. R2-2004-0030). The Corrective Action Program is based on the hydraulic capture of groundwater by flow toward existing groundwater sinks (areas of relatively low groundwater pressure, toward which groundwater will preferentially flow), primarily stormwater and sanitary sewer pipelines along Borregas Avenue and Carl Road that discharge to the headworks of the main plant. The Project would require the temporary relocation of one surface water gauge in Cargill Channel that is part of the existing Corrective Action Program.

As discussed in Chapter 2, *Project Description*, excavation would extend to approximately 22 feet below ground surface. In addition, Cargill Channel and a portion of Moffett Channel would be dewatered. Excavation areas would be supported by sheet piles, which would temporarily disconnect the excavated area from surrounding shallow groundwater. Dewatering of Cargill Channel could temporarily alter patterns of shallow groundwater flow in the vicinity, including portions of the Corrective Action Program area. In the Project area, shallow groundwater currently flows south from the bay towards pipelines under Carl Road (Ulrick & Associates, 2021). The bottom of Cargill Channel is approximately elevation 92 feet WPCP datum (Carollo Engineers, 2022b) or about -8 feet NGVD (Ulrick & Associates, 2021). The groundwater capture elevation in Carl Road is -9 feet NGVD (Ulrick & Associates, 2021). Therefore, dewatering of Cargill Channel could reduce groundwater flow but is unlikely to alter the direction of groundwater flow from

Cargill Channel towards Carl Road. Extended dewatering in Cargill Channel may affect the local shallow groundwater flow but is unlikely to alter the efficacy of the Corrective Action Program in a manner that could adversely affect groundwater quality because the direction of groundwater flow would not change and the area of groundwater affected (between Cargill Channel and Carl Road, under the main plant) does not contain refuse (Ulrick & Associates, 2021).

Flooding

As noted in the PEIR, the entire WPCP area, including the Project site, is in the FEMA special flood hazard area, and the base flood elevation at the WPCP mapped by FEMA is 11 feet NAVD88.

As discussed in Chapter 2, *Project Description,* the Project would excavate and replace existing pipelines that are buried under Moffett and Cargill channels and would line the interior of the primary effluent pipeline, which would not require ground disturbance outside the main plant. Cargill Channel is a muted-tidal channel that is not connected to streams. Moffett Channel drains Sunnyvale West Channel, a flood control channel managed by Valley Water.

The Project would include installation of coffer dams in Cargill and Moffett Channels during construction. During a flood the coffer dams could redirect flood flows; however, as shown in Table 1 the coffer dams would be in place during the dry season (between April and October). Construction would have less-than-significant impacts related to redirecting flood flows because temporary coffer dams would be in place for a short duration during the dry season.

Once replaced, the material overlying the two buried pipelines (the secondary effluent and pond return pipelines) would be contoured to the existing grade. The Project would not alter the channel grade in Moffett or Cargill channels compared with existing conditions. The levees would be reconstructed in their existing positions. Therefore, the Project would not impede or redirect flood flows compared with existing conditions, which would be a less-than-significant impact.

3.5.4 Conclusion

The Project would comply with existing waste discharge requirements applicable to the WPCP and post closure maintenance requirements applicable to the closed landfill, implement Mitigation Measure BIO-2b during construction, and would not otherwise degrade water quality.

The Project would not substantially alter the existing drainage pattern of the site or area once construction is complete, and would not result in substantial erosion or siltation, increased runoff, or flooding.

The Project would not result in new or more severe significant impacts related to impeding or redirecting flood flows.

The Project would not alter the potential to release pollutants in a flood zone and would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3.6 Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Effects Not Identified in Prior EIR*	*Potentially Substantial Increase in Severity of Significant Impact Identified in Prior EIR*	*Sponsor Declines to Adopt Feasible Mitigation Measures or Alternatives*	*No New or More Severe Significant Effects*
CULTURAL RESOURCES — Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

3.6.1 Setting

The environmental setting relevant to cultural resources for the Project has not changed relative to the setting in the PEIR.

3.6.2 Findings of Previously Adopted PEIR

The adopted PEIR determined that all Project impacts related to cultural resources would be less than significant or less than significant with mitigation. Chapter 5, *Mitigation Monitoring and Reporting Program*, reproduces adopted mitigation measures applicable to cultural resources impacts from this project.

3.6.3 Discussion

The following discussion evaluates whether Project changes would result in any new or more severe significant environmental effects than identified in the PEIR.

Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5

As described in the PEIR, the Sunnyvale WPCP would not be considered a historical resource as it does not meet the criteria for eligibility for listing in the National Register of Historic Places or California Register of Historical Resources. As such, any alterations or expansions to these facilities contemplated under the Project would have no impact on historical resources as defined by CEQA Section 15064.5.

Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5

As described in the PEIR, no archaeological resources were identified in the Sunnyvale WPCP through background research or field survey. While not expected, the unanticipated discovery

of archaeological resources or human remains cannot be entirely discounted. Impacts on archaeological resources would be potentially significant. Implementation of adopted **Mitigation Measure CUL-2**, **Unanticipated Discovery of Archaeological Resources**, would reduce impacts to a less-than-significant level by ensuring appropriate treatment of inadvertently discovered archaeological resources. With implementation of this mitigation measure, the Project would not result in any new or more significant impacts on previously unknown archaeological resources than those identified in the certified PEIR.

Directly or indirectly destroy a unique paleontological resource or site

As described in the PEIR, while the paleontological sensitivity of the units underlying the site is low, there is a remote possibility that fossils may be discovered during excavations associated with components of the Project. Because the significance of such fossils would be unknown until examined by a qualified paleontologist, such an event represents a potentially significant impact on paleontological resources. Implementation of adopted **Mitigation Measure CUL-3**, **Unanticipated Discovery of Paleontological Resources**, would reduce impacts to a less-than-significant level by ensuring appropriate treatment of accidentally discovered paleontological resources.

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

As described in the PEIR, no human remains, including those interred outside of formal cemeteries, are in the Project site or vicinity. Although unlikely, the discovery of human remains during construction that involves ground disturbance cannot be entirely discounted. Disturbance of human remains would be a potentially significant impact. Implementation of adopted **Mitigation Measure CUL-4**, **Unanticipated Discovery of Human Remains**, would reduce impacts to a less-than-significant level by ensuring appropriate treatment of inadvertently discovered human remains. With implementation of this mitigation measure, the Project would not result in any new or more significant impacts on previously unknown human remains than those identified in the certified PEIR.

Cumulative Cultural Resources Impacts

The geographic scope for cumulative effects on cultural and paleontological resources includes the immediate vicinity of locations where the Project could cause disturbance to historical resources, unique archaeological resources, human remains, and/or paleontological resources. As the Project would not have an impact on historical resources there would be no cumulative impact. Similar to the proposed Project, cumulative projects in the Project vicinity could have a significant impact on previously undiscovered archaeological resources, including human remains interred outside of formal cemeteries, as well as paleontological resources during ground-disturbing activities. The potential impacts of the Project when considered together with similar impacts from other probable future projects in the vicinity could result in a significant cumulative impact on previously unknown archaeological resources, human remains, or paleontological resources. However, implementation of Mitigation Measures CUL-2, CUL-3, and CUL-4 would

require that work halt in the vicinity of a find until it is evaluated, and in the case of human remains the County Coroner is contacted. In addition, cumulative projects undergoing CEQA review would have similar types of unanticipated discovery measures. Therefore, with implementation of Mitigation Measures CUL-2, CUL-3, and CUL-4, the Project's contribution to cumulative impacts would not be considerable.

3.6.4 Conclusion

Implementation of the adopted mitigation measures applicable to cultural resources would reduce possible impacts related to archaeological resources, paleontological resources, and human remains during construction of the Project to a less than significant level, and the Project would not result in any new or more severe significant impacts.

3.7 Tribal Cultural Resources

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

3.7.1 Setting

Since the adoption of the PEIR, Assembly Bill 52 (AB 52) was passed, which applies to projects for which a lead agency has issued a Notice of Preparation (NOP) of an environmental impact report or notice of intent to adopt a negative declaration on or after July 1, 2015. Tribal cultural resources were not analyzed in the PEIR.

Environmental Setting

Tribal cultural resources are: 1) 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 in the California Register, or local register of historical resources, as defined in PRC Section 5020.1(k); or, 2) a resource determined by the lead CEQA agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1(c).

As described in Section 3.6, Cultural Resources, background research and a survey effort did not identify cultural resources in the Project area or in the vicinity. In addition, Native American outreach completed for the PEIR and consultation with the California State Historic Preservation Officer did not result in the identification of any tribal cultural resources in the Project vicinity (ESA, 2016).

Regulatory Setting

State

In September 2014, the California Legislature passed AB 52, which added provisions to the PRC to evaluate under CEQA impacts on tribal cultural resources, as well as consultation requirements with California Native American tribes (PRC Section 21080.3.1, 21080.3.2, 21082.3). Lead

agencies are required to analyze project impacts on tribal cultural resources separately from archaeological resources (PRC Section 21074; 21083.09). A tribal cultural resource is defined in Public Resources Code section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

1. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Regarding impacts on tribal cultural resources, PRC Section 21084.3 states:

a) Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.

b) If the lead agency determines that a project may cause a substantial adverse change to a tribal cultural resource, and measures are not otherwise identified in the consultation process provided in Section 21080.3.2, the following are examples of mitigation measures that, if feasible, may be considered to avoid or minimize the significant adverse impacts:

    1) Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

    2) Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

        (A) Protecting the cultural character and integrity of the resource.

        (B) Protecting the traditional use of the resource.

        (C) Protecting the confidentiality of the resource.

    3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

    4) Protecting the resource.

3.7.2 Discussion

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

No known tribal cultural resources listed or determined eligible for listing in the California Register or included in a local register of historical resources as defined in PRC Section 5020.1(k), pursuant to PRC Section 21074(a)(1), would be impacted by the Project.

However, while unlikely, if any previously unrecorded archaeological resource were identified during ground-disturbing construction activities and were found to qualify as a tribal cultural resource pursuant to PRC Section 21074(a)(1) (determined to be eligible for listing in the California Register or in a local register of historical resources), any impacts on the resource resulting from the Project could be potentially significant. Any such potential significant impacts would be reduced to a less than significant level by implementing adopted **Mitigation Measure CUL-2**, **Unanticipated Discovery of Archaeological Resources** and **Mitigation Measure CUL-4**, **Unanticipated Discovery of Human Remains** (refer to Section 3.6).

With implementation of these mitigation measures, the Project would not result in any new impacts on tribal cultural resources.

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

The City did not determine any resource that could potentially be affected by the Project to be a tribal cultural resource significant pursuant to criteria set forth in PRC Section 5024.1(c). Therefore, the Project is not anticipated to impact any such resources.

However, while unlikely, if any previously unrecorded archaeological resource were identified during Project implementation, particularly ground-disturbing construction activities, and were found to qualify as a tribal cultural resource pursuant to PRC Section 21074(a)(2) (determined by the lead agency to be significant pursuant to criteria set forth in PRC Section 5024.1[c]), any impacts on the resource resulting from the Project could be potentially significant. Any such potential significant impacts would be reduced to a less than significant level by implementing adopted **Mitigation Measure CUL-2**, **Unanticipated Discovery of Archaeological Resources**, and **Mitigation Measure CUL-4**, **Unanticipated Discovery of Human Remains** (refer to Section 3.6).

With implementation of these mitigation measures, the Project would not result in any new impacts on tribal cultural resources.

3.7.3 Conclusion

Implementation of the adopted mitigation measures applicable to cultural resources would reduce possible impacts related to tribal cultural resources during construction of the Project to a less than significant level, and the Project would not result in any new significant impacts.

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CHAPTER 4
Conclusion

The Secondary Effluent Pipeline Replacement Project would not result in new or more severe significant impacts than those attributable to the project described in the Sunnyvale Water Pollution Control Plant (WPCP) Master Plan Program Environmental Impact Report (PEIR).

The analyses and discussion in Chapter 3 do not reflect involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects. There have been no changes in circumstances under which the Project is undertaken that would result in new significant environmental impacts or substantially more severe impacts, and no new information has become available that would indicate the potential for new significant impacts or substantially more severe impacts than were discussed in the PEIR. Therefore, no further evaluation is required, and no Subsequent EIR is needed pursuant to CEQA Guidelines Section 15162.

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CHAPTER 5

Mitigation Monitoring and Reporting Program – Secondary Effluent Pipeline Replacement Project

Table 4 presents mitigation measures and City actions to implement, monitor and report on these measures that apply to the Secondary Effluent Pipeline Replacement Project (Project). These measures include modifications to the original measures adopted by the City Council on August 23, 2016, and have been clarified as necessary to make them apply to the Project. The clarified mitigation measures do not change the original impact conclusions from the PEIR, nor are they considerably different from those analyzed in the PEIR.

Table 5 presents other mitigation measures contained within the Sunnyvale Water Pollution Control Plant Master Plan Mitigation Monitoring and Reporting Program that do not apply to the Project, and the reasons that they do not apply.

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TABLE 4
MITIGATION MONITORING AND REPORTING PROGRAM – SECONDARY EFFLUENT PIPELINE REPLACEMENT PROJECT

Mitigation Measures Adopted as Conditions of Approval	Implementation Procedures	Monitoring Responsibility	Monitoring and Reporting Action	Monitoring Schedule	Verification of Compliance
Transportation					
Mitigation Measure TR-1a: Truck Route Plan. As part of pre-construction submittals, the contractor(s) shall submit a truck route plan to the City of Sunnyvale Public Works Department for review and approval to help minimize impacts to adjacent roadways.	Contractor(s) shall obtain approval of truck route plan and implement plan during construction	City of Sunnyvale Public Works Department	Verify, review and approve truck route plan.	Prior to construction	*Verified by:* *Date:*
Mitigation Measure TR-1b: Implement a Temporary Traffic Control Plan. The City contractor(s) shall prepare and implement a traffic control plan using the City's Temporary Traffic Control guidelines to reduce traffic impacts on the roadways at and near the work site, as well as to reduce potential traffic safety hazards and ensure adequate access for emergency responders. The City shall coordinate development and implementation of this plan with City departments (e.g., Emergency Services, Fire, Police, Transportation), as appropriate. To the extent applicable, the traffic control plan shall conform to the Caltrans' *California Manual on Uniform Traffic Control Devices*, Part 6 (Temporary Traffic Control; Caltrans, 2014). The traffic control plan shall include, but not be limited to, the following elements: • Circulation and detour plans to minimize impacts on local road circulation during road and lane closures. Flaggers and/or signage shall be used to guide vehicles through and/or around the construction zone. • Controlling and monitoring construction vehicle movement through the enforcement of standard construction specifications by onsite inspectors. • Sufficient staging areas for trucks accessing construction zones to minimize disruption of access to adjacent public rights-of-way. • Scheduling truck trips outside the peak morning and evening commute hours to the extent possible. • Maintaining pedestrian and bicycle access and circulation during project construction where safe to do so. If construction activities encroach on bicycle routes or multi-use paths, advance warning signs (e.g., "Bicyclists Allowed Use of Full Lane" and/or "Share the Road") shall be posted that indicate the presence of such users. • Identifying detours for bicycles and pedestrians, where applicable, in all areas affected by project construction. • Implementing roadside safety protocols. Advance "Road Work Ahead" warning and speed control signs (including those informing drivers of State legislated double fines for speed infractions in a construction zone) shall be posted to reduce speeds and provide safe traffic flow through the work zone. • Coordinating construction with administrators of police and fire stations (including all fire protection agencies), and recreational facility managers. Operators shall be notified in advance of the timing, location, and duration of construction activities and the locations of detours and lane closures, where applicable. • Storing all equipment and materials in designated contractor staging areas on or adjacent to the worksite, such that traffic obstruction is minimized.	Contractor(s) shall prepare plan that adheres to all measures listed Contractor(s) shall implement plan	City of Sunnyvale Public Works Department	Verify inclusion of plan in contract specifications	Prior to construction	*Verified by:* *Date:*
Mitigation Measure C-TR-1: Implement Coordinated Transportation Management Plan. Prior to construction, the City's respective contractor(s) shall develop a Coordinated Transportation Management Plan, and the City and its contractor(s) shall work with other projects' contractors and appropriate County and/or City departments (e.g., Emergency Services, Fire, Police, Transportation) as needed to prepare and implement a transportation management plan for roadways adjacent to and directly affected by the Project ~~Master Plan improvements~~ or the WPF, and to address the transportation impact of the overlapping construction projects within the vicinity of the Project ~~Master Plan~~ or the WPF 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 ~~Master Plan~~ or WPF with nearby projects. • Coordination between the 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.	City's contractor(s) shall develop a plan that adheres to all measures listed. The City and its contractor(s) shall work with other project contractors, if necessary, and appropriate County and/or City departments for preparation and implementation of this plan.	City of Sunnyvale Public Works Department	Verify inclusion of this plan in the contract specifications.	Prior to construction	*Verified by:* *Date:*

TABLE 4 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM – SECONDARY EFFLUENT PIPELINE REPLACEMENT PROJECT

Mitigation Measures Adopted as Conditions of Approval	Implementation Procedures	Monitoring Responsibility	Monitoring and Reporting Action	Monitoring Schedule	Verification of Compliance
Air Quality					
Mitigation Measure AQ-2a: Implement BAAQMD Basic Construction Mitigation Measures. The City shall implement the following applicable BAAQMD Basic Construction Mitigation Measures to reduce emissions of fugitive dust and equipment exhaust: • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. • All haul trucks transporting soil, sand, or other loose material offsite shall be covered. • All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. • All vehicle speeds on unpaved roads shall be limited to 15 mph. • All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator. • Post a publicly visible sign with the telephone number and person to contact at the City or City's contractor regarding dust complaints. This person shall respond and the contractor shall take corrective action within 48 hours.	City or its contractor(s) implement BAAQMD Basic Construction Measures	City of Sunnyvale Public Works Department	Verify inclusion of measures in contract specifications and construction plans. Inspect construction site to confirm compliance by the contractor, report non-compliance and ensure corrective action.	Prior to construction During construction	*Verified by:* *Date:*
Biological Resources					
Mitigation Measure BIO-1a: Reduce Impacts on Congdon's Tarplant. • Within 2 years prior to initial ground disturbance for activities outside the main plant fenceline, the City will retain a qualified biologist, or require the contractor to retain a qualified biologist, to conduct protocol-level surveys for Congdon's tarplant in suitable habitat in, and within 50 feet of, the proposed construction footprint. These surveys will be conducted in accordance with the protocols established by the CDFW and CNPS, and shall coincide with the bloom period for the species (May through November). • If Congdon's tarplant is present in the survey area, the City contractor will avoid impacts on individuals of this species to the extent feasible during implementation of the Project ~~Master Plan~~. • If Congdon's tarplant is present near the limits of disturbance, the City contractor will maintain a buffer free from construction-related activities around the tarplant occurrence; this buffer will be at least 50 feet if feasible, but large enough to avoid indirect impacts such as dust mobilization and alteration of hydrology. The City contractor shall demarcate the buffer in the field with orange fencing. No equipment or vehicles shall be permitted within the buffer area during construction. • If 15 percent or more of the known population of Congdon's tarplant within five miles of the work ~~Master Plan~~ area at the time of impact would be affected by the Project ~~Master Plan~~, the City will provide compensatory mitigation. To compensate for loss of individual Congdon's tarplants, offsite habitat either occupied by the species or suitable for restoration to support the species and revegetated with this species (such as Sunnyvale Baylands Park) shall be preserved and managed in perpetuity at a minimum 1:1 mitigation ratio (at least one plant preserved for each plant affected). Seeds from the affected population shall be collected and used to seed the mitigation area.	Contractor(s) shall prepare construction plans that incorporate protocol-level pre-construction surveys for Congdon's tarplant. The Contractor shall identify a qualified biologist. Qualified biologist will conduct pre-construction surveys. Qualified biologist to inspect construction site to confirm implementation of measures. Locate compensatory mitigation site, as needed, and select qualified biologist to collect and disseminate seeds from affected population during appropriate season (generally September/October) Qualified biologist shall collect and disseminate seeds from affected population during appropriate season	City of Sunnyvale Public Works Department	Review qualifications of Contractor-nominated biologist and either approve or recommend identification of additional candidates. Review pre-construction survey reports for recommended avoidance, buffer, and/or need for compensatory mitigation. Inspect and confirm implementation of construction buffer zone(s) based on pre-construction survey results. Review pre-construction survey reports for recommended avoidance, buffer, and/or need for compensatory mitigation. Secure record of planting from qualified biologist	Prior to commencement of construction. After completion of pre-construction survey report. One inspection shall occur during each phase of construction. After completion of pre-construction survey report. After completion of planting.	*Verified by:* *Date:*
Mitigation Measure BIO-2a: Worker Environmental Awareness Training. The City will retain, or require the contractor to retain, a qualified biologist to conduct mandatory contractor/worker environmental awareness training for all construction personnel working on project activities outside of the main plant~~, including but not limited to Ponds 1 and 2, the diurnal equalization and emergency storage basins, channel levees, and the Bay Trail parking relocation area~~. The awareness training will be provided to all construction personnel to brief them on the potential for special-status species to occur on the site, the need to avoid effects to special-status species and their habitats, and all project mitigation measures pertaining to biological resources and water quality. If new construction personnel are added, the contractor will ensure that the personnel receive the mandatory training before starting work. A representative will be appointed during the employee education program to be the contact for any employee or contractor who might inadvertently kill or injure a special-status species or who finds a dead, injured, or entrapped individual. The representative's name and telephone number will be provided to the City prior to the initiation of construction activities outside of the main plant.	City or contractor(s) to retain a qualified biologist to conduct environmental awareness training for construction personnel. Qualified biologist to conduct training(s)	City of Sunnyvale Public Works Department	Review qualifications of Contractor-nominated biologist and either approve or recommend identification of additional candidates. Verify inclusion of the Plan in contract specifications. Record name of appointed representative to contact Record date(s) of training	Prior to construction outside of the main plant	*Verified by:* *Date:*

TABLE 4 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM – SECONDARY EFFLUENT PIPELINE REPLACEMENT PROJECT

Mitigation Measures Adopted as Conditions of Approval	Implementation Procedures	Monitoring Responsibility	Monitoring and Reporting Action	Monitoring Schedule	Verification of Compliance
Biological Resources (cont.)					
Mitigation Measure BIO-2b: Minimization of Impacts on Water Quality. The following measures will be incorporated into the construction stormwater pollution prevention plan and implemented during construction of the Project ~~Master Plan~~ improvements to avoid or minimize impacts on water quality: • Earth-moving in areas draining directly to wetlands and aquatic habitats will not occur during days when rain is occurring or predicted to occur (i.e., greater than 40 percent chance) during the work period. This measure applies to all Project areas with potential to drain directly to wetlands or aquatic habitats, particularly in or adjacent to ~~the Southeast Channel, the~~ Sunnyvale West Channel, ~~the~~ Cargill Channel, Moffett Channel, Ponds 1 and 2, and SCVWD Pond A4. • All permit conditions, legal requirements, and appropriate dredging and engineering practices shall be followed to avoid and minimize water quality impacts ~~associated with Master Plan activities~~. Suitable erosion control, sediment control, source control, treatment control, material management, and stormwater management BMPs will be implemented consistent with the latest edition of the California Stormwater Quality Association "Stormwater Best Management Practices Handbook," available at ~~www.capmphandbooks.com~~ www.casqa.org. • Spill prevention kits shall always be in close proximity when using hazardous materials (e.g., crew trucks and other logical locations). Feasible measures shall be implemented to ensure that hazardous materials are properly handled and the quality of aquatic resources is protected by all reasonable means when removing vegetation and sediments from the channels. • No fueling shall be done in areas immediately adjacent to (i.e., within 50 feet of) channels, ponds, or wetlands. For stationary equipment that must be fueled on site, containment shall be provided in such a manner that any accidental spill of fuel shall not be able to enter the water or contaminate sediments that may come in contact with water. Any equipment that is readily moved out of the channels, ponds, or wetlands shall not be fueled in these sensitive habitat areas or the immediate floodplains surrounding them. • A hazardous materials management/fuel spill containment plan will be developed and implemented by the construction contractor and given to all contractors and biological monitors ~~working on the Master Plan~~, with at least one copy of the plan located onsite at all times. The purpose of the plan is to provide onsite construction managers, environmental compliance monitors, and regulatory agencies with a detailed description of hazardous materials management, spill prevention, and spill response/cleanup measures associated with the construction activities ~~of Master Plan elements~~. The primary objective of the plan is to prevent a spill of hazardous materials. Elements of the plan will include, but are not limited to the following: – A discussion of hazardous materials management, including delineation of hazardous material and hazardous waste storage area, access and egress routes, waterways, emergency assembly areas, and temporary hazardous waste storage areas; – Materials Safety Data Sheets for all chemicals used and stored on site; – An inventory list of emergency equipment; – Spill control and countermeasures including employee spill prevention/response training; – Notification and documentation procedures; and – A monthly reporting plan. • Vehicles will be checked daily for oil or fuel leaks and will be washed only at an approved area (existing construction yards or legally operating car washes) ~~as described above for Mitigation Measure BIO-1b~~. No washing of vehicles will occur in work ~~Master Plan~~ areas located outside of the main plant fenceline. • The work site, areas adjacent to the site, and access areas will be maintained in an orderly condition, free and clear from debris and discarded materials. This measure includes all work ~~Master Plan~~ areas located outside of the main plant fenceline. Personnel will not sweep, grade, or flush surplus materials, rubbish, debris, or dust onto adjacent areas or waterways. Upon completion of work, all building materials, debris, unused materials, concrete forms, and other construction-related materials will be removed from the work ~~Master Plan~~ areas located outside of the main plant fenceline. • Stockpiled materials outside of the main plant fenceline will be covered by plastic sheeting, tarps, or similar material that can be secured during wind and rain. A sediment fence or berm will be installed around stockpiled dredged material to prevent runoff from transporting sediment into sensitive habitats (such as the channels, ponds, and wetlands). Heavy equipment will not be operated in the active channels or within wetland habitats, but instead from existing hardscape, access roads, and levees. • Water conservation methods will ensure that water used in the work ~~Master Plan~~ area does not create surface flows capable of carrying pollutants to the nearby creek channel. All personnel, including sub-contractors will be instructed on the practical methods of preventing leaks or over-use of watering, and will be required to adhere to the practices in the detail sheets provided. Woody debris from tree trimming and other activities will not be left in the active channels or in wetland habitats. • In-channel vegetation removal may result in increased local erosion in the channels due to increased flow velocity. To minimize such erosion, the toe of the bank will be protected by leaving vegetation within the channel to the maximum extent practicable. • Cofferdams or silt fencing will be used to the extent feasible during construction and maintenance activities that could potentially result in substantial siltation of open water. For any work within aquatic or wetland habitats, such as ~~Ponds 1 and 2~~ Moffett Channel, Pond Recirculation Channel, or the Cargill Channel, silt curtains will be installed to prevent suspended sediments from migrating out of the immediate work area, and ~~dredging~~ in-water work will be conducted on incoming tides to the extent feasible to further reduce the potential for sediment mobilization outside the ~~Master Plan~~ area. Prior to removal of coffer dams, water from adjacent areas of the respective water body will be pumped back into the dewatered area to avoid erosion of levees or release of sediment into aquatic habitats (e.g., water from Cargill Channel west of the coffer dam will be pumped into the eastern dewatered area of Cargill Channel). ~~Dredging within aquatic or wetland habitats will be conducted with a closed clamshell-style dredge to reduce the amount of suspended sediment produced. Dredge volumes will be documented to ensure compliance with and adequate performance of these measures.~~	City or contractor(s) to retain a qualified water quality specialist to prepare a stormwater pollution prevention plan that adheres to all measures Contractor(s) to include plan in construction plans	City of Sunnyvale Public Works Department	Verify inclusion of plan in contract specifications Review monthly hazardous materials management/fuel spill containment plan reports for compliance with measure Document dredging volumes in compliance with measure	Prior to construction During construction	*Verified by:* *Date:*

TABLE 4 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM – SECONDARY EFFLUENT PIPELINE REPLACEMENT PROJECT

Mitigation Measures Adopted as Conditions of Approval	Implementation Procedures	Monitoring Responsibility	Monitoring and Reporting Action	Monitoring Schedule	Verification of Compliance
Biological Resources (cont.)					
Mitigation Measure BIO-2c: Special-Status Fish Measures. The following measures will be implemented during construction of the ~~Master Plan~~ Project to avoid or minimize impacts on special-status fish species: • Impacts on tidal waters where special-status fish and Essential Fish Habitat may occur will be minimized to the extent feasible. • Construction activities in, or directly adjacent to, waters where green sturgeon, longfin smelt, steelhead, or Chinook salmon may be present will be performed between June 1 and November 30. These waters include but are not limited to the Moffett Channel and the Sunnyvale West Channel. • Activities that extend into the waters where special-status fish may be present, ~~such as levee breaching for active restoration of Ponds 1 and 2,~~ will be performed at low tide and/or under de-watered conditions, to the extent practicable. • A Fish Rescue Plan will be developed for in-water work and coffer dam dewatering activities where special-status fish may be present. The plan will require that a qualified fisheries biologist approved by the Service and NMFS supervise fish rescue and relocation efforts in in-water work areas. The Fish Rescue Plan will include reporting requirements to the Service and NMFS and describe methods for minimizing the risk of stress and mortality due to capture and handling of fishes removed from the construction site and returned to downstream waterways. • ~~If pile driving or installation of temporary sheet piles is necessary during construction or restoration activities outside of the main plant fenceline, such as for earthwork, foundations, or dewatering, then pile~~ Pile driving where special-status fish may be present will be performed using a vibratory hammer to minimize the potential effects of noise and pressure-waves on fish. • National Marine Fisheries Service personnel will be immediately notified of any observed fish mortality events associated with ~~Master Plan~~ Project activities. • ~~Tidally restored ponds will contain channels that are adequate for the ingress and egress of fish with tidal circulation to avoid fish stranding.~~ • Treated wood will not be used in structures that may come into contact with water	Contractor to include requirements in construction plans City or contractor to notify NMFS of fish mortality events observed	City of Sunnyvale Public Works Department	Verify inclusion of these measures in contract specifications and construction plans Record fish mortality events and confirm reporting to NMFS	Prior to construction During construction	
Mitigation Measure BIO-2d: Western Pond Turtle Measures. The following measures will be implemented to avoid and minimize impacts on western pond turtles in portions of the ~~Master Plan~~ work area outside of the main plant fenceline, particularly in or near the Sunnyvale West Channel: • Impacts on aquatic habitat of the western pond turtle, such as the Sunnyvale West Channel, will be minimized to the extent feasible. • A qualified biologist shall conduct a survey for western pond turtles and their nests immediately (i.e., within 2 hours) prior to commencement of work along aquatic habitat ~~the Sunnyvale West Channel~~. If a western pond turtle is found in an area where it could be injured or killed by ~~Master Plan improvement~~ Project activities, the biologist will relocate the turtle to an appropriate site outside the construction disturbance area. • Following the initial survey, a construction crewmember who has been trained to identify western pond turtles by a qualified biologist shall conduct a survey of the work area along aquatic habitat ~~the Sunnyvale West Channel area~~ each morning prior to the onset of construction activities. If a turtle is located, all work in the vicinity shall immediately cease, and a qualified biologist shall be contacted. Work within the area shall not resume until the turtle has been relocated or has moved on its own out of the construction disturbance area. • If an active western pond turtle nest is detected within the activity area, a 25 foot-buffer zone around the nest will be established and maintained during the nesting season (April 1 through August 31) until the young have left the nest or it is no longer active due to predation, as determined by a qualified biologist.	Contractor to retain qualified biologist Contractor to prepare construction plans that incorporate pond turtle survey Biologist to conduct survey prior to construction Biologist to train construction crew member Biologist to implement buffer if nest is found	City of Sunnyvale Public Works Department	Review qualifications of Contractor-nominated biologist and either approve or recommend identification of additional candidates. Verify inclusion of these measures in contract specifications and construction plans Review survey report	Prior to construction	
Mitigation Measure BIO-2e: Burrowing Owl Measures. The following measures will be implemented to avoid and minimize impacts on burrowing owls in the ~~Master Plan~~ work area, particularly on the closed landfill and along the Sunnyvale West Channel but also including areas ~~within~~ along the main plant fenceline that may support ground squirrel burrows: • Preconstruction surveys for burrowing owls will be conducted by a qualified biologist prior to all construction activities that occur within 250 feet of potential burrowing owl habitat ~~on the closed landfill or along the Sunnyvale West Channel~~, in conformance with CDFW protocols. This measure applies to construction activities inside of the main plant fenceline only where ground squirrel burrows are present ~~or for those activities located within 250 feet of suitable burrowing owl habitat on the closed landfill or Sunnyvale West Channel~~. The final survey will occur no more than 2 days prior to the start of any ground-disturbing activity such as clearing and grubbing, excavation, or grading, or any similar activity within 250 feet of suitable habitat that could disturb nesting owls. If no burrowing owls are located during these surveys, no additional action would be warranted. However, if burrowing owls are located on or immediately adjacent to impact areas, the following measures would be implemented. • If burrowing owls are present during the nonbreeding season (generally 1 September to 31 January), the City/contractor would maintain a 150-foot buffer zone, within which no new ~~Master Plan~~ Project-related activity would occur, around the occupied burrow(s) if feasible. However, this buffer distance would not apply to existing operations and maintenance activities in the main plant. A reduced buffer distance is acceptable during the nonbreeding season as long as construction avoids direct impacts on the burrow(s) used by the owls. During the breeding season (generally 1 February to 31 August), a 250-foot buffer, within which no new ~~Master Plan-related~~ activity would be permissible, would be maintained between ~~Master Plan~~ activities and occupied burrows. Owls present at burrows on the site after 1 February would be assumed to be nesting on or adjacent to the site unless evidence indicates otherwise. This protected area would remain in effect until 31 August, or based upon monitoring evidence, until young owls are foraging independently or until the nest is no longer active.	Contractor to prepare plans that incorporate preconstruction surveys, buffer zones, and relocation plan Contractor to identify qualified biologist to conduct preconstruction surveys Qualified biologist to establish buffer zones or conduct owl relocation, as needed	City of Sunnyvale Public Works Department	Review qualifications of Contractor-nominated biologist and either approve or recommend identification of additional candidates. Verify inclusion of these measures in contract specifications and construction plans Review survey report If burrowing owls present, inspect construction site to confirm buffer zones	Prior to construction During construction	*Verified by:* *Date:*

TABLE 4 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM – SECONDARY EFFLUENT PIPELINE REPLACEMENT PROJECT

Mitigation Measures Adopted as Conditions of Approval	Implementation Procedures	Monitoring Responsibility	Monitoring and Reporting Action	Monitoring Schedule	Verification of Compliance
Biological Resources (cont.)					
• In the unlikely event that an occupied burrowing owl burrow is within the construction footprint (e.g., on the bank of a levee), and the burrow cannot be avoided, the owl will be evicted from the burrow by a qualified biologist using one-way doors. The biologist will leave the one-way doors in place for at least 48 hours, checking them daily to ensure that they are functioning properly. If the biologist cannot be certain that the owl is outside the burrow (e.g., if the one-way doors were installed when the owl was inside the burrow and the owl cannot be detected outside later), then the burrow will be excavated by hand prior to being filled to ensure that no owl is trapped inside. Otherwise, the burrow will be backfilled after the owl has been evicted. No burrowing owls will be evicted from burrows during the nesting season unless evidence indicates that nesting is not actively occurring (e.g., because the owls have not yet begun nesting early in the season, or because young have already fledged late in the season).					
Mitigation Measure BIO-2f: California Ridgway's Rail and California Black Rail Measures. The following measures will be implemented for activities outside of the main plant fenceline to avoid and minimize impacts on California Ridgway's rails and California black rails, particularly in tidal marsh habitats associated with the Moffett Channel: • ~~.~~ Impacts on tidal wetland habitat of these species will be avoided ~~minimized to the extent feasible~~. Tidal wetland habitat for these species occurs in the northern portions of the work ~~Master Plan~~ area, in association with the Moffett Channel. ~~Suitable tidal wetland habitat for these species is not present within the main plant fenceline.~~ • To avoid causing the abandonment of an active nest, construction activities within 700 feet of vegetated tidal marsh providing suitable breeding habitat for Ridgway's rails or black rails (i.e., the area along Moffett Channel where the marsh ~~begins to~~ widens near the pond circulation pump station ~~just upstream from its confluence with Guadalupe Slough, or the large marsh area along Guadalupe Slough north of Pond 1~~) will be avoided during the breeding season from February 1 through August 31 ~~unless protocol-level surveys are conducted to determine rail locations and territories the same year in which those construction activities occur. If breeding Ridgway's rails or black rails are determined to be present, activities will not occur within 700 feet of areas in which Ridgway's rails or black rails were heard calling during protocol-level surveys. If the intervening distance across a major slough channel (e.g., Moffett Channel or Guadalupe Slough) or across a substantial barrier between the locations of rail detections and any construction activity area is greater than 200 feet, then it may proceed at that location within the breeding season~~. • If areas within or adjacent to rail habitat cannot be avoided during the breeding season (February 1 through August 31), protocol-level surveys shall be conducted to determine rail nesting locations. The surveys will focus on potential habitat that could be disturbed by construction activities during the breeding season to ensure that rails are not breeding in these locations. – Survey methods for rails will follow the *Site-Specific Protocol for Monitoring Marsh Birds*, which was developed for use by the USFWS and partners to improve bay-wide monitoring accuracy by standardizing surveys and increasing the ability to share data (Wood et al. 2017). Surveys are concentrated during the approximate period of peak detectability, January 15 to March 25 and are structured to efficiently sample an area in three rounds of surveys by broadcasting calls of target species during specific periods of each survey round. Call broadcast increase the probability of detection compared to passive surveys when no call broadcasting is employed. The survey protocol for Ridgway's rail is summarized below. ▪ Previously used survey locations (points) should be used when available to maintain consistency with past survey results. Adjacent points should be at least 200 meters (656 feet) apart along transects in or adjacent to areas representative of the marsh. Points should be located to minimize disturbances to marsh vegetation. Up to 8 points can be located on a transect. ▪ At each transect, three surveys (rounds) are to be conducted, with the first round of surveys initiated between January 15 and February 6, the second round performed February 7 to February 28, and the third round March 1 to March 25. Surveys should be spaced at least one week apart and the period between March 25 to April 15 can be used to complete surveys delayed by logistical or weather issues. A Federal Endangered Species Act Section 10(a)(1)(A) permit is required to conduct active surveys. ▪ Each point on a transect will be surveyed for 10 minutes each round. A recording of calls available from USFWS is broadcast at each point. The recording consists of 5 minutes of silence, followed by a 30-second recording of Ridgway's rail vocalizations, followed by 30 seconds of silence, followed by a 30-second recording of California black rail, followed by 3.5 minutes of silence. – If no breeding California Ridgway's rails are detected during surveys, or if their breeding territories can be avoided by 700 feet, then Project activities may proceed at that location. – If protocol surveys determine that breeding California Ridgway's rails are present in the Project area, the following measures would apply to Project activities conducted during their breeding season (February 1- August 31): ▪ A USFWS- and California Department of Fish and Wildlife (CDFW)-approved biologist with experience recognizing California Ridgway's rail vocalizations will be on site during construction activities occurring within 700 feet of suitable rail breeding habitat. ▪ If a California Ridgway's rail vocalizes or flushes within 10 meters (33 feet), it is possible that a nest or young are nearby. If an alarmed bird or nest is detected, work will be stopped, and workers will leave the immediate area carefully and quickly. The location of the sighting will be recorded to inform future activities in the area. ▪ All crews working in rail habitat during the breeding season will be trained and supervised by a USFWS- and CDFW-approved rail biologist.	Contractor to prepare construction plans incorporating requirements of the measure Prior to February 1 of the years during which activities would occur within 700 feet of suitable breeding habitat, qualified biologist to conduct protocol-level surveys	City of Sunnyvale Public Works Department	Verify inclusion of these measures in contract specifications and construction plans	Protocol-level survey begins mid-January prior to construction	*Verified by:* *Date:*

TABLE 4 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM – SECONDARY EFFLUENT PIPELINE REPLACEMENT PROJECT

Mitigation Measures Adopted as Conditions of Approval	Implementation Procedures	Monitoring Responsibility	Monitoring and Reporting Action	Monitoring Schedule	Verification of Compliance
Biological Resources (cont.)					
• Aside from continued use of recreational trails established prior to the start of the breeding season (which may continue), only routine inspection, maintenance, or monitoring activities that have little potential for effects on rails due to their short durations, distance from rail habitat, or low-magnitude effects may be performed during the breeding season in areas within or adjacent to rail breeding habitat. Otherwise, with USFWS and CDFW approval on a case-by-case basis, construction activities may take place after July 15 in a given area if the activity is thought to be minimally disturbing to breeding rails. • The extent of impacts near ~~on~~ tidal marsh will be clearly demarcated in the field prior to construction, and no impacts (including construction access) will occur outside those limits. • Silt fencing or similar material will be installed at the perimeter of work areas, between all areas of earth-moving and marsh ~~outside the impact area~~ to prevent dirt and other materials from entering marsh areas that are not intended to be affected. • No animals can be brought to the project site to avoid harassing, killing, or injuring wildlife. • The project site will be maintained trash-free, and food refuse will be contained in secure bins and removed daily during construction and dredging. • Nighttime work near tidal marsh habitat will be avoided to the extent feasible. If nighttime work cannot be avoided, lighting will be directed to the work area and away from tidal marsh habitat.					
Mitigation Measure BIO-2g: Salt Marsh Harvest Mouse and Salt Marsh Wandering Shrew Measures The following measures will be implemented for activities outside of the main plant fence line to avoid and minimize impacts on the salt marsh harvest mouse and salt marsh wandering shrew, particularly in marsh habitat associated with ~~the~~ Moffett Channel, and Cargill Channel: • A USFWS and CDFW-approved biologist, with knowledge and experience with salt marsh harvest mouse and salt marsh wandering shrew habitat requirements, will conduct pre-construction surveys for these species and identify and mark suitable habitat prior to Project initiation. • Impacts ~~on pickleweed and wetland habitat that may support these species will be minimized to the extent feasible. Wetland habitat that may support these species occurs in the northern portion of the Master Plan area, in association with the Moffett Channel and the Cargill Channel. No suitable habitat for these species occurs within the main plant fence line.~~ • To avoid the loss of individual harvest mice or wandering shrews from any excavation, fill, or construction activities in suitable habitat, vegetation removal and fill in marsh habitats, including the Moffett Channel and the Cargill Channel, will be limited to the minimum amount necessary ~~to implement the Master Plan improvements.~~ Wherever feasible, sufficient pickleweed habitat will remain adjacent to the activity area to provide refugia for displaced individuals. • In areas where salt marsh harvest mice or wandering shrew habitat will be affected, vegetation and debris that could provide cover for mice will be removed using only mechanized hand tools, or by another method approved by the USFWS and CDFW, at least three weeks prior to the commencement of construction activities. Vegetation removal will occur under the supervision of a qualified biologist. The vegetation will be removed on a progressive basis, such that the advancing front of vegetation removal moves toward vegetation that would not be disturbed. In some cases, temporary shelter consisting of dead vegetation may be positioned to provide escape routes to suitable habitat. A qualified biologist will monitor the vegetation removal and make specific recommendations with respect to the rate of vegetation removal (to ensure that any harvest mice or wandering shrews present are able to escape to cover that will not be affected), whether vegetation needs to remain in a certain area temporarily to facilitate dispersal of mice into habitat outside the impact area, and whether any berms are necessary to allow mice or shrews to disperse across wetted channels. • Following the ~~hand~~-removal of vegetation in areas where these species may be affected, exclusion fencing will be erected as needed between construction areas and harvest mouse/wandering shrew habitat that is to remain unaffected to define and isolate protected habitat for this these species. This fencing will consist of ~~heavy plastic sheeting or metal~~ material that cannot be climbed by harvest mice or wandering shrews, or similar Resource Agency-approved exclusion materials, buried at least 4 inches below the ground's surface and with at least 1 foot (but no more than 4 feet) above the ground. All supports for the fencing will be placed on the inside of the work area. A 4-foot buffer will be maintained free of vegetation around the outside of the exclusion fencing. The fencing will be inspected daily during construction, and any necessary repairs will be made within 24 hours of when they are found. If any breaks in the fencing are found, a qualified biologist will inspect the work area for salt marsh harvest mice or wandering shrews. If any individual harvest mice are found within the impact footprint, they will be allowed to move on their own (although shrews may be relocated by a qualified biologist) to vegetated areas outside the impact footprint. • During construction in areas where salt marsh harvest mice and wandering shrews may be affected, a qualified biologist will check underneath vehicles and equipment for these species before such equipment is moved during each day of construction, unless the equipment is surrounded by exclusion fencing. ~~Based on current design concepts, the Master Plan is expected to affect approximately 1.5 acres of tidal coastal brackish marsh (in the Moffett Channel) and another 0.5 acre of non-tidal salt marsh (in the Cargill Channel) that could potentially support these species through raising (and as a result widening) an access road and construction of a new pipeline segment to the diurnal equalization basins. To compensate for these habitat impacts, the City will provide mitigation through a combination of (a) the purchase of credits in an approved conservation bank that provides habitat suitable for use by these species and/or (b) tidal marsh habitat restoration onsite or offsite. Owing to the relatively low quality of habitat provided by the wetlands to be affected by Master Plan activities, this mitigation will be provided at a minimum ratio of 1:1 (mitigation:impact) on an acreage basis. This mitigation can be provided using the same mitigation area as described in Mitigation Measure BIO-3b for wetlands as long as the habitat is suitable for the salt marsh harvest mouse and salt marsh wandering shrew and provides vegetated wetlands adequate to compensate for impacts on these species' habitats at a 1:1 ratio~~.	Contractor to prepare construction plans incorporating requirements of the measure Contractor to inspect fencing daily during construction Contractor to identify qualified biologist to check underneath vehicles and equipment for species before equipment is moved each day.	City of Sunnyvale Public Works Department	Verify inclusion of these measures in contract specifications and construction plans	Prior to and during construction	*Verified by:* *Date:*

TABLE 4 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM – SECONDARY EFFLUENT PIPELINE REPLACEMENT PROJECT

Mitigation Measures Adopted as Conditions of Approval	Implementation Procedures	Monitoring Responsibility	Monitoring and Reporting Action	Monitoring Schedule	Verification of Compliance
Biological Resources (cont.)					
~~• Prior to construction, the City will purchase credits from an approved conservation bank and/or prepare a Habitat Mitigation and Monitoring Plan (HMMP) describing the proposed creation of mitigation habitats that will satisfy the mitigation requirements. Impacts on habitat of the salt marsh harvest mouse and salt marsh wandering shrew may not commence until the adequate credits in a conservation bank have been purchased and/or the City prepares the HMMP. The HMMP will be prepared by a qualified restoration ecologist and will include the following:~~ ~~– A summary of impacts on these species' habitats and the proposed mitigation acreage~~ ~~– Goals of the restoration to achieve no net loss of habitat functions and values for these species~~ ~~– The location of the mitigation site and description of existing site conditions~~ ~~– Mitigation design:~~ ~~▪ Existing and proposed site hydrology, geomorphology, and geotechnical stability, if applicable~~ ~~▪ Grading plan if appropriate, including bank stabilization or other site stabilization features~~ ~~▪ Soil amendments and other site preparation elements as appropriate~~ ~~▪ Planting plan~~ ~~▪ Irrigation and maintenance plan~~ ~~– Construction schedule~~ ~~– Monitoring plan (including specific, objective final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc.). Performance criteria will include demonstration of the presence of appropriate vegetation for these species within 10 years of mitigation implementation and presence of at least one of these two small mammal species within 10 years of the establishment of appropriate vegetated habitat.~~ ~~– A contingency plan for mitigation elements that do not meet performance or final success criteria; this plan will include specific triggers for remediation if performance criteria are not being met.~~ • If a salt marsh harvest mouse or salt marsh wandering shrew is discovered, construction activities will cease in the immediate vicinity of the individual mouse/shrew until the individual has been allowed to leave the construction area.					
Mitigation Measure BIO-2h: Nesting Bird Measures. The following measures will be implemented throughout the ~~Master Plan~~ work area to minimize impacts on nesting San Francisco common yellowthroat, Alameda song sparrow, and other native bird species: • Nesting deterrence can be implemented to minimize the potential for nesting birds to constrain project activities or to be adversely affected by those activities. ~~The most effective nesting deterrence in non-developed portions of the main plant is vegetation removal to remove nesting substrate.~~ Vegetation that is to be affected by the project should be removed during the nonbreeding season (i.e., September 1 through January 31) if feasible. If necessary, removal of nest-starts (incomplete nests that do not yet contain eggs or young) by qualified biologists may occur during the breeding season. Such nest-start removal may begin early in the breeding season (e.g., February) and continue regularly until vegetation can be removed and construction commences. Some species, such as barn swallows (*Hirundo rustica*) or black phoebes (*Sayornis nigricans*), may establish nests on buildings or other structures. To deter birds from nesting on structures, netting or other deterrence devices may be installed to preclude birds from constructing nests. Such nesting deterrence should be implemented under the supervision of qualified biologists in order to prevent death or injury of birds or other wildlife as a result of improperly installed deterrence devices, and such devices will require regular maintenance to ensure that they are functioning properly. • Prior to commencement of new activities (i.e., activities that are not currently ongoing in any given area) during the breeding season (February 1 through August 31), preconstruction surveys will be conducted by a qualified biologist no more than 7 days prior to the initiation of new disturbance in any given area to ensure that no active nests of species protected by the Migratory Bird Treaty Act or California Fish and Game Code will be disturbed during ~~Master Plan~~ Project implementation. During this survey, the biologist will inspect all potential nesting habitats (e.g., trees, shrubs, buildings, and various substrates on the ground) in the project area for nests. ~~This survey will include suitable nesting substrates both within and outside the main plant fenceline.~~ Surveys will be conducted within search radii corresponding to disturbance-free buffer zones described below for raptors (300 feet) and non-raptors (100 feet), including in offsite areas adjacent to the ~~Master Plan~~ Project area (where such areas are accessible ~~and are contained in the buffer zones~~). • If an active nest is found, a qualified biologist will determine the extent of a disturbance-free buffer zone to be established around the nest until nesting has been completed. Disturbance-free buffer zones are typically 300 feet for raptors and 100 feet for non-raptors, although factors such as existing disturbance and vegetation or structures that screen construction activities from a nest will be considered in determining the appropriate buffer. Nests will be considered active until surveys conducted by a qualified ornithologist confirm nesting is complete. However, construction within these radii may proceed if, based on monitoring of the birds behavior, a qualified biologist determines that such activities are not likely to result in the abandonment of the nest. Pursuant to ~~Per~~ CDFW recommendations, monitoring will be conducted as follows: – A qualified biologist will monitor activity at each nest for three days prior to the onset of construction activities to develop a baseline of the normal behavior of the birds attending the nest. If the behavior observed at the nest is consistent on Days 1 and 2 of monitoring, Day 3 of monitoring may be skipped.	Contractor(s) to prepare construction plans that include schedule of vegetation removal, nest deterrence, preconstruction surveys, and buffer zones Contractor to identify qualified biologist to conduct nesting deterrence measures Contractor to remove vegetation within non-breeding season Biologist to implement nesting deterrence measures	City of Sunnyvale Public Works Department	Review qualifications of Contractor-nominated biologist and either approve or recommend identification of additional candidates. Verify inclusion of measures in contract specifications and construction plans	Prior to construction	*Verified by:* *Date:*

TABLE 4 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM – SECONDARY EFFLUENT PIPELINE REPLACEMENT PROJECT

Mitigation Measures Adopted as Conditions of Approval	Implementation Procedures	Monitoring Responsibility	Monitoring and Reporting Action	Monitoring Schedule	Verification of Compliance
Biological Resources (cont.)					
– A qualified biologist will monitor activity at each nest for 8 hours on the first day that construction occurs within the standard buffer (e.g., within 100 feet of a non-raptor nest). If the biologist determines that the birds' behavior is not adversely affected, ~~Master Plan~~ Project activities may continue. The biologist should continue to monitor the nests for 1 hour/day on any day when construction activities occur within the standard buffer around an active nest. – If at any time the biologist determines that ~~Master Plan~~ Project activities within the standard buffer is adversely affecting the behavior of the birds such that the nest is in jeopardy of failing, construction activities should retreat to honor the standard buffer until the nest is no longer active (i.e., the young have fledged)					
Mitigation Measure BIO-3a: Avoidance of Open Water and Wetland Habitats. • Detailed design of ~~WPCP improvements for the Master Plan~~ the Project will avoid and minimize impacts on open water and wetland resources to the extent feasible. • If open water and wetland habitats are present within 100 feet or less of the limits of disturbance ~~in the Master Plan~~ Project area, avoidance buffers shall be maintained between construction areas and the aquatic resources ~~those habitats and construction areas that drain directly to them~~. These buffers should be at least 50 feet for general construction activities and 100 feet for grading, to the extent feasible. The avoidance buffers shall be designated as Environmentally Sensitive Areas and clearly identified in the field using orange fencing. No equipment, vehicles, or personnel are permitted within Environmentally Sensitive Areas. Environmentally Sensitive Areas shall be shown on Project plan sets. All Environmentally Sensitive Area fencing shall be maintained intact and in good condition throughout the duration of construction. • Any temporarily affected aquatic and wetland habitats will be restored to preconstruction elevations and contours, and temporarily affected wetlands will be revegetated using native plant species appropriate for the salinity, elevation, and location of the affected area.	Contractor(s) to prepare construction plans that incorporate habitat mitigation and buffer zones	City of Sunnyvale Public Works Department	Verify inclusion of measures in contract specifications and construction plans Confirm placement of fencing at site against construction plans Confirm restoration to preconstruction elevations and contours	Prior to construction During construction After construction	
Mitigation Measure BIO-3b: Compensatory Mitigation for Aquatic and Wetland Habitats. The City shall obtain permits from the USACE, RWQCB, and CDFW as needed to obtain authorization to affect jurisdictional waters. In order to ensure that the proposed Project ~~Master Plan~~ results in no net loss of wetland and aquatic habitat functions and values, the City shall compensate for the permanent loss of jurisdictional wetland and aquatic habitats through a combination of on-site and/or off-site restoration/creation and protection and enhancement of wetland habitat. The size and location(s) of the area(s) to be restored/created will be determined based on appropriate mitigation ratios derived in consultation with USACE, RWQCB, and CDFW, but the amount of compensatory mitigation provided shall be at least 1:1 (i.e., at least equivalent to the acreage of jurisdictional wetlands and other waters permanently affected). Prior to construction, the City of Sunnyvale will purchase credits from a mitigation bank approved by the applicable resource agencies and/or prepare a Mitigation and Monitoring Plan describing the proposed creation of mitigation wetlands that will satisfy the mitigation requirements. Impacts on jurisdictional wetlands and other waters may not commence until the adequate credits in a mitigation bank have been purchased and/or the City of Sunnyvale prepares the Mitigation and Monitoring Plan and implementation is assured. The Mitigation and Monitoring Plan will be prepared by a qualified restoration ecologist and will include the following: • A summary of wetland impacts and the proposed wetland creation mitigation • Goals of the restoration to achieve no net loss of habitat functions and values • The location of the mitigation site and description of existing site conditions • Mitigation design: • Existing and proposed site hydrology, geomorphology, and geotechnical stability, if applicable • Grading plan if appropriate, including bank stabilization or other site stabilization features • Soil amendments and other site preparation elements as appropriate • Planting plan • Irrigation and maintenance plan • Construction schedule • Monitoring plan (including specific, objective final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc.). Performance criteria will include the establishment of wetland vegetation on any vegetated wetland mitigation area within 5 years of mitigation implementation. • A contingency plan for mitigation elements that do not meet performance or final success criteria within 5 years; this plan will include specific triggers for remediation if performance criteria are not being met.					

TABLE 4 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM – SECONDARY EFFLUENT PIPELINE REPLACEMENT PROJECT

Mitigation Measures Adopted as Conditions of Approval	Implementation Procedures	Monitoring Responsibility	Monitoring and Reporting Action	Monitoring Schedule	Verification of Compliance
Hazards and Hazardous Materials					
Mitigation Measure HAZ-2a: Hazardous Building Materials Abatement. The City shall ensure that, prior to demolition, the building is surveyed for hazardous building materials including, electrical equipment containing polychlorinated biphenyl (PCBs), fluorescent light ballasts containing PCBs or bis(2-ethylhexyl) phthalate (DEHP), and fluorescent light tubes containing mercury vapors. These materials shall be removed and properly disposed of prior to the start of demolition or renovation. Light ballasts that are proposed to be removed during renovation shall be evaluated for the presence of PCBs and in the case where the presence of PCBs in the light ballast cannot be verified, they shall be assumed to contain PCBs, and handled and disposed of as such, according to applicable laws and regulations. Any other hazardous building materials identified either before or during demolition or renovation shall be abated according to federal, state, and local laws and regulations.	City or contractor(s) to conduct survey for hazardous building materials Contractor to remove and properly dispose of materials as described	City of Sunnyvale Public Works Department	Verify inclusion of requirements in contract specifications Review survey results Confirm handling and disposal performed in compliance with laws and regulations	Prior to ground disturbance During demolition	*Verified by:* *Date:*
Mitigation Measure HAZ-2b: Health and Safety Plan. For each Project component ~~Master Plan improvement~~ involving ground disturbing activities, the City or its contractor will prepare a Health and Safety Plan in accordance with federal OSHA regulations (29 CFR 1910.120) and Cal/OSHA regulations (8 CCR Title 8, Section 5192). Each Plan will be based on all activities proposed as part of the specific project and include designated personnel responsible for implementation of the Plan. The City will require each contractor for each individual construction contract to implement a Plan. Each Plan will include all required measures to protect construction workers and the general public potentially exposed to hazardous materials or wastes by including engineering controls, monitoring, and security measures to prevent dangerous levels of exposure and unauthorized entry to the construction area, and to reduce hazards outside of any construction area. If prescribed contaminant exposure levels are exceeded, personal protective equipment shall be required for workers in accordance with state and federal regulations. Compliance with the Health and Safety Plan will not be construed as approval of the adequacy of the contractor's health and safety professional's qualifications or any safety measure taken in or near the construction site. The contractor will 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.	Contractor(s) to prepare Health and Safety Plan and incorporate Plan in construction plans Contractor(s) to implement Plan	City of Sunnyvale Public Works Department	Review each Health and Safety Plan Verify inclusion of Plan in contract specifications for each individual construction contract	Prior to ground disturbance	*Verified by:* *Date:*
Mitigation Measure HAZ-2c: Soil and Groundwater Management Plan. For any elements involving ground disturbing activities, the City will require the construction contractor to implement a Soil and Groundwater Management Plan, subject to review by the City that specifies the method for handling and disposal of contaminated soil and groundwater prior to demolition, excavation, and construction activities. The plan will include all necessary procedures to ensure that any excavated materials and fluids from throughout the work ~~Master Plan~~ area 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 will 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. • Procedures to be implemented if unknown subsurface conditions or contamination are encountered, such as previously unreported tanks, wells, or contaminated soils. • Detailed control measures for use and storage of hazardous materials to prevent the release of pollutants to the environment, and emergency procedures for the containment and cleanup of accidental releases of hazardous materials to minimize the impacts of any such release. These procedures shall also include reporting requirements in the event of a reportable spill or other emergency incident. At a minimum, the City or its contractor shall notify applicable agencies in accordance with guidance from the California Office of Emergency Services as well as the Santa Clara County Environmental Health Department. • Procedures for containment, handling and disposal of groundwater generated from construction dewatering, the method used to analyze groundwater for hazardous materials likely to be encountered at specific locations and the appropriate treatment and/or disposal methods.	Contractor to prepare Soil and Groundwater Management Plan Contractor to implement Plan	City of Sunnyvale Public Works Department	Review Soil and Groundwater Management Plan Verify inclusion of Plan in contract specifications	Prior to ground disturbance	*Verified by:* *Date:*
Cultural Resources					
Mitigation Measure CUL-2: Unanticipated Discovery of Archaeological Resources. If prehistoric or historic-period archaeological resources are encountered, all construction activities within 100 feet will halt and the City of Sunnyvale will be notified. 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); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include deposits of metal, glass, and/or ceramic refuse. A Secretary of the Interior-qualified archaeologist will inspect the findings within 24 hours of discovery. If it is determined that the project could damage a historical resource or a unique archaeological resource (as defined pursuant to the CEQA Guidelines), mitigation will be implemented in accordance with PRC Section 21083.2 and Section 15126.4 of the CEQA Guidelines, with a preference for preservation in place. Consistent with Section 15126.4(b)(3), this may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. If avoidance is not feasible, a qualified archaeologist will prepare and implement a detailed treatment plan in consultation with City of Sunnyvale and, for prehistoric resources, the appropriate Native American representative. Treatment of unique archaeological resources will follow the applicable requirements of PRC Section 21083.2. Treatment for most resources would consist of (but would not be not 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 will 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.	City or Contractor to retain cultural resources expert to conduct preconstruction worker environmental awareness training on recognition of archaeological resources Contractor to notify City of Sunnyvale if resources encountered Secretary of the Interior-qualified archaeologist will inspect the findings within 24 hours of discovery Archaeologist, City, and contractor to implement mitigation as determined by archaeologist	City of Sunnyvale Public Works Department	Verify inclusion of requirements in contract specifications	Prior to ground disturbance	*Verified by:* *Date:*

TABLE 4 (CONTINUED)
MITIGATION MONITORING AND REPORTING PROGRAM – SECONDARY EFFLUENT PIPELINE REPLACEMENT PROJECT

Mitigation Measures Adopted as Conditions of Approval	Implementation Procedures	Monitoring Responsibility	Monitoring and Reporting Action	Monitoring Schedule	Verification of Compliance
Cultural Resources (cont.)					
Mitigation Measure CUL-3: Unanticipated Discovery of Paleontological Resources. If paleontological resources, such as fossilized bone, teeth, shell, tracks, trails, casts, molds, or impressions are discovered during ground-disturbing activities, work will stop in that area and within 100 feet of the find until a qualified paleontologist can assess the nature and importance of the find and, if necessary, develop appropriate treatment measures in conformance with Society of Vertebrate Paleontology standards, and in consultation with the City of Sunnyvale.	City or Contractor to retain cultural resources expert to conduct preconstruction worker environmental awareness training on recognition of archaeological resources Contractor to notify City of Sunnyvale if resources encountered	City of Sunnyvale Public Works Department	Verify inclusion of requirements in contract specifications	Prior to ground disturbance	*Verified by:* *Date:*
Mitigation Measure CUL-4: Unanticipated Discovery of Human Remains. In the event of discovery or recognition of any human remains during construction activities, such activities within 100 feet of the find will cease until the Santa Clara County Coroner has been contacted to determine that no investigation of the cause of death is required. The NAHC will be contacted within 24 hours if it is determined that the remains are Native American. 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 of Sunnyvale (or, for the WPF, the District) for the appropriate means of treating the human remains and any grave goods.	Contractor(s) shall monitor worker activities Contractor(s) shall halt work and notify the County Coroner, if necessary. If appropriate, Coroner shall notify NAHC. NAHC shall notify Most Likely Descendant (MLD).	City of Sunnyvale Public Works Department	Verify inclusion of requirements in contract specifications	Prior to ground disturbance	*Verified by:* *Date:*

TABLE 5
ADOPTED MITIGATION MEASURES THAT DO NOT APPLY TO THE SECONDARY EFFLUENT PIPELINE REPLACEMENT PROJECT

Adopted Mitigation Measures	Reason Measure Does Not Apply to Secondar Effluent Pipeline Replacement Project
Mitigation Measure NOI-1: Develop and Implement Construction Noise Logistics Plan.	Does not apply due to nature of project activities and distance from receptors.
Mitigation Measure AQ-2b: Implement BAAQMD Additional Construction Mitigation Measures	Does not apply due to nature of project activities.
Mitigation Measure BIO-1b: Prevent the Introduction and Spread of Non-native, Invasive Species	Does not apply due to nature of project activities.
Mitigation Measure BIO-4a: Avoidance and Preservation of Trees.	Does not apply due to nature of project and location.
Mitigation Measure BIO-4b: Master Plan Compensation for Impacts on Protected Trees	Does not apply because no protected trees would be removed.
Mitigation Measure HYD-2: Hydraulic Analysis of Levee Widening.	Does not apply due to nature of project activities.
Mitigation Measure HYD-3a: Flood Hazard Assessment and Design For Diurnal Equalization Tanks, Pump Station, and Pipeline.	Does not apply due to nature of project activities.
Mitigation Measure HYD-3b: Restoration Plan for Ponds 1 and 2.	Does not apply due to nature of project activities.
Mitigation Measure HYD-3c: Flood Protection Prior to Levee Breaching.	Does not apply due to nature of project activities.
Mitigation Measure WQ-4: Water Quality Evaluation and Control Plan for Oxidation Pond Breaching and Restoration.	Does not apply due to nature of project activities.
Mitigation Measure CUL-1. Assessment of Effects to Cargill Channel.	Does not apply due to nature of project (replacement of existing facilities).
Mitigation Measure AES-1: Levee Plantings and Visual Screening.	Does not apply due to nature of project and location.
Mitigation Measure GI-1: Update Projections.	Does not apply due to nature of project activities.

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Appendix A
Air Quality Supporting Information

DETAILS OF CONSTRUCTION EQUIPMENT AND ACTIVITY

Provided by Carollo	Calculated by ESA

Overall construction timeline: Match to "Const Phasing" tab					
Construction Phase	Start Date	End Date	Number of workdays in Phase		
Site Preparation and Construction	4/1/24	2/28/25	**166**	**11/18/2024**	**166**
Pond Return Bypass System	6/1/24	12/30/24	**151**		
Pond A4 Bypass	4/1/24	11/30/24	**243**		
Open Trench Construction (Removal/Install)	7/1/24	11/30/24	**110**		
Steel Header Rehabilitation	7/1/24	8/31/24	**45**		
			196		

Construction Vehicle Trips by Phase						
Construction Phase	Construction workers/day	Worker trips/day	Truck Trips/day (Off-haul)	Truck Trips/day (fill)	Construction Material delivery trips/day	
Site Preparation and Construction	8	**16**	**6**	30	4	
Pond Return Bypass System	8	**16**	**N/A**	N/A	4	
Pond A4 Bypass	0	**0**	**0**	0	0	No additional workers or trucl
Open Trench Construction (Removal/Install)	20	**40**	**24**	18	4	
Steel Header Rehabilitation	4	**8**	**N/A**	N/A	1	

Construction Equipment and Activity by Phase						
Equipment NOTE: Please click on a cell and select equipment from the drop down list	Number of Equipment used	Avg Operation (hrs/day)	Number of Work Days in the construction phase equipment is used	Equipment size (hp)	Total Run Time (hours)	Adjusted number of work hours/day
Site Preparation and Construction						
Cranes	1	8	88	270	704	4.2
Other Construction Equipment	4	8	82	415	656	4.0
Pumps	1	24	15	75	360	2.2
Off-Highway Trucks	2	8	90	250	720	4.3
Other General Industrial Equipment	1	8	82	275	656	4.0
Rollers	1	8	6	20	48	0.3
Pond Return Bypass System						
Cranes	1	8	30	270	240	1.6
Excavators	1	8	30	270	240	1.6
Pumps	3	12	200	350	2400	15.9
Other Construction Equipment	1	8	20	N/A	160	1.1
Generator Sets	1	8	20	60	160	1.1
Pond A4 Bypass						
Pumps	1	24	243	50	5832	24.0

DETAILS OF CONSTRUCTION EQUIPMENT AND ACTIVITY

Provided by Carollo	Calculated by ESA

Overall construction timeline: Match to "Const Phasing" tab					
Construction Phase	**Start Date**	**End Date**	**Number of workdays in Phase**		
Site Preparation and Construction	4/1/24	2/28/25	**166**	**11/18/2024**	**166**
Pond Return Bypass System	6/1/24	12/30/24	**151**		
Pond A4 Bypass	4/1/24	11/30/24	**243**		
Open Trench Construction (Removal/Install)	7/1/24	11/30/24	**110**		
Steel Header Rehabilitation	7/1/24	8/31/24	**45**		
			196		

Construction Vehicle Trips by Phase						
Construction Phase	**Construction workers/day**	**Worker trips/day**	**Truck Trips/day (Off-haul)**	**Truck Trips/day (fill)**	**Construction Material delivery trips/day**	
Site Preparation and Construction	8	**16**	**6**	30	4	
Pond Return Bypass System	8	**16**	**N/A**	N/A	4	
Open Trench Construction (Removal/Install)						
Excavators	2	8	100	270	800	7.3
Plate Compactors	1	8	45	10	360	3.3
Cement and Mortar Mixers	1	8	15	5	120	1.1
Dumpers/Tenders	2	8	60	250	480	4.4
Graders	1	8	20	250	160	1.5

DETAILS OF CONSTRUCTION EQUIPMENT AND ACTIVITY

Provided by Carollo	Calculated by ESA

Overall construction timeline: Match to "Const Phasing" tab					
Construction Phase	**Start Date**	**End Date**	**Number of workdays in Phase**		
Site Preparation and Construction	4/1/24	2/28/25	**166**	**11/18/2024**	**166**
Pond Return Bypass System	6/1/24	12/30/24	**151**		
Pond A4 Bypass	4/1/24	11/30/24	**243**		
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Steel Header Rehabilitation	7/1/24	8/31/24	**45**		
			196		

Construction Vehicle Trips by Phase						
Construction Phase	**Construction workers/day**	**Worker trips/day**	**Truck Trips/day (Off-haul)**	**Truck Trips/day (fill)**	**Construction Material delivery trips/day**	
Site Preparation and Construction	8	**16**	**6**	30	4	
Pond Return Bypass System	8	**16**	**N/A**	N/A	4	
Other General Industrial Equipment	1	8	30	N/A	240	2.2
Generator Sets	1	8	30	60	240	2.2
Steel Header Rehabilitation						
Excavators	1	8	2	270	16	0.4

CALEEMOD EMISSIONS SUMMARY

CONSTRUCTION EMISSIONS - Criteria Air Pollutants - Uncontrolled

Year	Number of Workdays	Tons per year				Average Pounds per day			
		ROG	NOx	Ex PM-10	Ex PM-2.5	ROG	NOx	Ex PM-10	Ex PM-2.5
2024	196	0.66	5.09	0.18	0.18	6.8	51.9	1.9	1.8
PROJECT TOTAL		0.66	5.09	0.18	0.18	6.8	51.9	1.9	1.8

CONSTRUCTION EMISSIONS - GHG as MT

Year	CO_2	CH_4	N_2O	CO_2e
2024	1820.0	0.19	6.54E-03	1826.6
Total	1820.0	0.19	0.00654	1826.6

	CO_2	CH_4	N_2O
GWP	1	25	298

Source: https://ww2.arb.ca.gov/ghg-gwps

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Secondary Effluent Pipeline Replacement Project

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	1.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Unit size assumed

Construction Phase - From RFI response

Off-road Equipment - From RFI response

Off-road Equipment - From RFI response

Off-road Equipment - From RFI response

Off-road Equipment - From RFI response

Trips and VMT - From RFI response

Off-road Equipment - Added based on carollo input
Fleet Mix -

Road Dust -

Consumer Products -

Area Coating -

Landscape Equipment -

Table Name	Column Name	Default Value	New Value

Secondary Effluent Pipeline Replacement Project - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstructionPhase	NumDays	1.00	166.00
tblConstructionPhase	NumDays	100.00	151.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblOffRoadEquipment	HorsePower	231.00	270.00
tblOffRoadEquipment	HorsePower	9.00	5.00
tblOffRoadEquipment	HorsePower	231.00	270.00
tblOffRoadEquipment	HorsePower	16.00	250.00
tblOffRoadEquipment	HorsePower	158.00	270.00
tblOffRoadEquipment	HorsePower	158.00	270.00
tblOffRoadEquipment	HorsePower	158.00	270.00
tblOffRoadEquipment	HorsePower	84.00	60.00
tblOffRoadEquipment	HorsePower	84.00	60.00
tblOffRoadEquipment	HorsePower	187.00	250.00
tblOffRoadEquipment	HorsePower	402.00	250.00
tblOffRoadEquipment	HorsePower	172.00	415.00
tblOffRoadEquipment	HorsePower	172.00	275.00
tblOffRoadEquipment	HorsePower	8.00	10.00
tblOffRoadEquipment	HorsePower	84.00	75.00
tblOffRoadEquipment	HorsePower	84.00	350.00
tblOffRoadEquipment	HorsePower	80.00	20.00
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	UsageHours	4.00	1.60
tblTripsAndVMT	HaulingTripNumber	0.00	72.00
tblTripsAndVMT	HaulingTripNumber	0.00	84.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	8.00
tblTripsAndVMT	WorkerTripNumber	3.00	8.00
tblTripsAndVMT	WorkerTripNumber	25.00	16.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblTripsAndVMT	WorkerTripNumber	0.00	16.00
tblTripsAndVMT	WorkerTripNumber	23.00	40.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.6647	5.0865	5.1678	0.0189	0.0519	0.1813	0.2331	0.0141	0.1761	0.1901	0	1,820.01	1,820.01	0.1875	6.54E-03	1,826.64
Maximum	**0.6647**	**5.0865**	**5.1678**	**0.0189**	**0.0519**	**0.1813**	**0.2331**	**0.0141**	**0.1761**	**0.1901**	**0**	**1,820.01**	**1,820.01**	**0.1875**	**6.54E-03**	**1,826.64**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.6647	5.0865	5.1678	0.0189	0.0519	0.1813	0.2331	0.0141	0.1761	0.1901	0.0000	1,820.0051	1,820.0051	0.1875	6.5400e-003	1,826.6406
Maximum	**0.6647**	**5.0865**	**5.1678**	**0.0189**	**0.0519**	**0.1813**	**0.2331**	**0.0141**	**0.1761**	**0.1901**	**0.0000**	**1,820.0051**	**1,820.0051**	**0.1875**	**6.5400e-003**	**1,826.6406**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-1-2024**	**6-30-2024**	1.4093	1.4093

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2	**7-1-2024**	**9-30-2024**	2.4338	2.4338
		Highest	2.4338	2.4338

2.2 Overall Operational

Unmitigated Operational

Operational emissions not estimated in this run

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation and Construction	Site Preparation	4/1/2024	11/18/2024	5	166	
2	Pond Return Bypass System	Building Construction	6/1/2024	12/30/2024	5	151	
3	Steel Header Rehabilitation	Trenching	7/1/2024	8/31/2024	5	45	
4	Open Trench Constructon	Trenching	7/1/2024	11/30/2024	5	110	
5	Pond A4 Bypass	Trenching	4/1/2024	11/30/2024	7	244	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Steel Header Rehabilitation	Excavators	1	0.40	270	0.38
Site Preparation and Construction	Cranes	1	4.20	270	0.29
Site Preparation and Construction	Off-Highway Trucks	2	4.30	250	0.38
Site Preparation and Construction	Other Construction Equipment	4	4.00	415	0.42
Site Preparation and Construction	Other Construction Equipment	1	4.00	275	0.42
Site Preparation and Construction	Pumps	1	2.20	75	0.74
Site Preparation and Construction	Rollers	1	0.30	20	0.38
Pond Return Bypass System	Cranes	1	1.60	270	0.29
Pond Return Bypass System	Excavators	1	1.60	270	0.38
Pond Return Bypass System	Generator Sets	1	1.10	60	0.74
Pond Return Bypass System	Other Construction Equipment	1	1.10	172	0.42
Pond Return Bypass System	Pumps	3	15.90	350	0.74
Open Trench Constructon	Cement and Mortar Mixers	1	1.10	5	0.56
Open Trench Constructon	Dumpers/Tenders	2	4.40	250	0.38
Open Trench Constructon	Excavators	2	7.30	270	0.38
Open Trench Constructon	Generator Sets	1	2.20	60	0.74
Open Trench Constructon	Graders	1	1.50	250	0.41
Open Trench Constructon	Other General Industrial Equipment	1	2.20	88	0.34
Open Trench Constructon	Plate Compactors	1	3.30	10	0.43
Pond A4 Bypass	Pumps	1	24.00	84	0.74

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Steel Header Rehabilitation	1	8.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation and Construction	10	16.00	8.00	72.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Pond Return Bypass System	7	16.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Open Trench Constructon	9	40.00	8.00	84.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Pond A4 Bypass	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Secondary Effluent Pipeline Replacement Project - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation and Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1547	1.3977	1.2045	4.0800e-003		0.0547	0.0547		0.0505	0.0505	0.0000	358.2364	358.2364	0.1126	0.0000	361.0525
Total	**0.1547**	**1.3977**	**1.2045**	**4.0800e-003**		**0.0547**	**0.0547**		**0.0505**	**0.0505**	**0.0000**	**358.2364**	**358.2364**	**0.1126**	**0.0000**	**361.0525**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	4.9000e-003	1.1400e-003	2.0000e-005	6.1000e-004	4.0000e-005	6.5000e-004	1.7000e-004	4.0000e-005	2.1000e-004	0.0000	2.1217	2.1217	7.0000e-005	3.4000e-004	2.2238
Vendor	7.1000e-004	0.0296	9.1400e-003	1.3000e-004	4.3700e-003	1.8000e-004	4.5500e-003	1.2600e-003	1.7000e-004	1.4300e-003	0.0000	13.0082	13.0082	2.7000e-004	1.9100e-003	13.5835
Worker	3.1100e-003	2.0700e-003	0.0277	8.0000e-005	0.0105	5.0000e-005	0.0106	2.8000e-003	5.0000e-005	2.8500e-003	0.0000	7.7621	7.7621	2.1000e-004	2.1000e-004	7.8294
Total	**3.9000e-003**	**0.0366**	**0.0380**	**2.3000e-004**	**0.0155**	**2.7000e-004**	**0.0158**	**4.2300e-003**	**2.6000e-004**	**4.4900e-003**	**0.0000**	**22.8920**	**22.8920**	**5.5000e-004**	**2.4600e-003**	**23.6367**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1547	1.3977	1.2045	4.0800e-003		0.0547	0.0547		0.0505	0.0505	0.0000	358.2360	358.2360	0.1126	0.0000	361.0521
Total	**0.1547**	**1.3977**	**1.2045**	**4.0800e-003**		**0.0547**	**0.0547**		**0.0505**	**0.0505**	**0.0000**	**358.2360**	**358.2360**	**0.1126**	**0.0000**	**361.0521**

Mitigated Construction Off-Site

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	4.9000e-003	1.1400e-003	2.0000e-005	6.1000e-004	4.0000e-005	6.5000e-004	1.7000e-004	4.0000e-005	2.1000e-004	0.0000	2.1217	2.1217	7.0000e-005	3.4000e-004	2.2238
Vendor	7.1000e-004	0.0296	9.1400e-003	1.3000e-004	4.3700e-003	1.8000e-004	4.5500e-003	1.2600e-003	1.7000e-004	1.4300e-003	0.0000	13.0082	13.0082	2.7000e-004	1.9100e-003	13.5835
Worker	3.1100e-003	2.0700e-003	0.0277	8.0000e-005	0.0105	5.0000e-005	0.0106	2.8000e-003	5.0000e-005	2.8500e-003	0.0000	7.7621	7.7621	2.1000e-004	2.1000e-004	7.8294
Total	**3.9000e-003**	**0.0366**	**0.0380**	**2.3000e-004**	**0.0155**	**2.7000e-004**	**0.0158**	**4.2300e-003**	**2.6000e-004**	**4.4900e-003**	**0.0000**	**22.8920**	**22.8920**	**5.5000e-004**	**2.4600e-003**	**23.6367**

3.3 Pond Return Bypass System - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3509	2.3825	2.1819	0.0106		0.0732	0.0732		0.0728	0.0728	0.0000	1,090.5601	1,090.5601	0.0348	0.0000	1,091.4291
Total	**0.3509**	**2.3825**	**2.1819**	**0.0106**		**0.0732**	**0.0732**		**0.0728**	**0.0728**	**0.0000**	**1,090.5601**	**1,090.5601**	**0.0348**	**0.0000**	**1,091.4291**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5000e-004	0.0269	8.3200e-003	1.2000e-004	3.9800e-003	1.6000e-004	4.1400e-003	1.1500e-003	1.5000e-004	1.3000e-003	0.0000	11.8327	11.8327	2.5000e-004	1.7400e-003	12.3561
Worker	2.8300e-003	1.8800e-003	0.0252	8.0000e-005	9.5800e-003	5.0000e-005	9.6300e-003	2.5500e-003	4.0000e-005	2.5900e-003	0.0000	7.0607	7.0607	1.9000e-004	1.9000e-004	7.1219
Total	**3.4800e-003**	**0.0288**	**0.0335**	**2.0000e-004**	**0.0136**	**2.1000e-004**	**0.0138**	**3.7000e-003**	**1.9000e-004**	**3.8900e-003**	**0.0000**	**18.8934**	**18.8934**	**4.4000e-004**	**1.9300e-003**	**19.4780**

Mitigated Construction On-Site

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3509	2.3825	2.1819	0.0106		0.0732	0.0732		0.0728	0.0728	0.0000	1,090.5588	1,090.5588	0.0348	0.0000	1,091.4278
Total	**0.3509**	**2.3825**	**2.1819**	**0.0106**		**0.0732**	**0.0732**		**0.0728**	**0.0728**	**0.0000**	**1,090.5588**	**1,090.5588**	**0.0348**	**0.0000**	**1,091.4278**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5000e-004	0.0269	8.3200e-003	1.2000e-004	3.9800e-003	1.6000e-004	4.1400e-003	1.1500e-003	1.5000e-004	1.3000e-003	0.0000	11.8327	11.8327	2.5000e-004	1.7400e-003	12.3561
Worker	2.8300e-003	1.8800e-003	0.0252	8.0000e-005	9.5800e-003	5.0000e-005	9.6300e-003	2.5500e-003	4.0000e-005	2.5900e-003	0.0000	7.0607	7.0607	1.9000e-004	1.9000e-004	7.1219
Total	**3.4800e-003**	**0.0288**	**0.0335**	**2.0000e-004**	**0.0136**	**2.1000e-004**	**0.0138**	**3.7000e-003**	**1.9000e-004**	**3.8900e-003**	**0.0000**	**18.8934**	**18.8934**	**4.4000e-004**	**1.9300e-003**	**19.4780**

3.4 Steel Header Rehabilitation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5000e-004	1.6900e-003	2.1500e-003	1.0000e-005		6.0000e-005	6.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.8675	0.8675	2.8000e-004	0.0000	0.8745
Total	**2.5000e-004**	**1.6900e-003**	**2.1500e-003**	**1.0000e-005**		**6.0000e-005**	**6.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.8675**	**0.8675**	**2.8000e-004**	**0.0000**	**0.8745**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	2.0000e-003	6.2000e-004	1.0000e-005	3.0000e-004	1.0000e-005	3.1000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	0.8816	0.8816	2.0000e-005	1.3000e-004	0.9206
Worker	4.2000e-004	2.8000e-004	3.7500e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.0521	1.0521	3.0000e-005	3.0000e-005	1.0612
Total	**4.7000e-004**	**2.2800e-003**	**4.3700e-003**	**2.0000e-005**	**1.7300e-003**	**2.0000e-005**	**1.7400e-003**	**4.7000e-004**	**2.0000e-005**	**4.9000e-004**	**0.0000**	**1.9337**	**1.9337**	**5.0000e-005**	**1.6000e-004**	**1.9818**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5000e-004	1.6900e-003	2.1500e-003	1.0000e-005		6.0000e-005	6.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.8675	0.8675	2.8000e-004	0.0000	0.8745
Total	**2.5000e-004**	**1.6900e-003**	**2.1500e-003**	**1.0000e-005**		**6.0000e-005**	**6.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.8675**	**0.8675**	**2.8000e-004**	**0.0000**	**0.8745**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	2.0000e-003	6.2000e-004	1.0000e-005	3.0000e-004	1.0000e-005	3.1000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	0.8816	0.8816	2.0000e-005	1.3000e-004	0.9206
Worker	4.2000e-004	2.8000e-004	3.7500e-003	1.0000e-005	1.4300e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.0521	1.0521	3.0000e-005	3.0000e-005	1.0612
Total	**4.7000e-004**	**2.2800e-003**	**4.3700e-003**	**2.0000e-005**	**1.7300e-003**	**2.0000e-005**	**1.7400e-003**	**4.7000e-004**	**2.0000e-005**	**4.9000e-004**	**0.0000**	**1.9337**	**1.9337**	**5.0000e-005**	**1.6000e-004**	**1.9818**

3.5 Open Trench Constructon - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

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Off-Road	0.0334	0.2645	0.2888	1.1000e-003		9.7100e-003	9.7100e-003		9.0500e-003	9.0500e-003	0.0000	95.8042	95.8042	0.0291	0.0000	96.5308
Total	**0.0334**	**0.2645**	**0.2888**	**1.1000e-003**		**9.7100e-003**	**9.7100e-003**		**9.0500e-003**	**9.0500e-003**	**0.0000**	**95.8042**	**95.8042**	**0.0291**	**0.0000**	**96.5308**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.0000e-005	5.7100e-003	1.3300e-003	2.0000e-005	7.1000e-004	5.0000e-005	7.6000e-004	2.0000e-004	4.0000e-005	2.4000e-004	0.0000	2.4753	2.4753	8.0000e-005	3.9000e-004	2.5944
Vendor	4.7000e-004	0.0196	6.0600e-003	9.0000e-005	2.9000e-003	1.2000e-004	3.0100e-003	8.4000e-004	1.1000e-004	9.5000e-004	0.0000	8.6199	8.6199	1.8000e-004	1.2600e-003	9.0011
Worker	5.1500e-003	3.4200e-003	0.0458	1.4000e-004	0.0175	8.0000e-005	0.0175	4.6400e-003	8.0000e-005	4.7200e-003	0.0000	12.8589	12.8589	3.5000e-004	3.5000e-004	12.9704
Total	**5.7100e-003**	**0.0287**	**0.0532**	**2.5000e-004**	**0.0211**	**2.5000e-004**	**0.0213**	**5.6800e-003**	**2.3000e-004**	**5.9100e-003**	**0.0000**	**23.9541**	**23.9541**	**6.1000e-004**	**2.0000e-003**	**24.5659**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0334	0.2645	0.2888	1.1000e-003		9.7100e-003	9.7100e-003		9.0500e-003	9.0500e-003	0.0000	95.8041	95.8041	0.0291	0.0000	96.5307
Total	**0.0334**	**0.2645**	**0.2888**	**1.1000e-003**		**9.7100e-003**	**9.7100e-003**		**9.0500e-003**	**9.0500e-003**	**0.0000**	**95.8041**	**95.8041**	**0.0291**	**0.0000**	**96.5307**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.0000e-005	5.7100e-003	1.3300e-003	2.0000e-005	7.1000e-004	5.0000e-005	7.6000e-004	2.0000e-004	4.0000e-005	2.4000e-004	0.0000	2.4753	2.4753	8.0000e-005	3.9000e-004	2.5944
Vendor	4.7000e-004	0.0196	6.0600e-003	9.0000e-005	2.9000e-003	1.2000e-004	3.0100e-003	8.4000e-004	1.1000e-004	9.5000e-004	0.0000	8.6199	8.6199	1.8000e-004	1.2600e-003	9.0011
Worker	5.1500e-003	3.4200e-003	0.0458	1.4000e-004	0.0175	8.0000e-005	0.0175	4.6400e-003	8.0000e-005	4.7200e-003	0.0000	12.8589	12.8589	3.5000e-004	3.5000e-004	12.9704

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Total	**5.7100e-003**	**0.0287**	**0.0532**	**2.5000e-004**	**0.0211**	**2.5000e-004**	**0.0213**	**5.6800e-003**	**2.3000e-004**	**5.9100e-003**	**0.0000**	**23.9541**	**23.9541**	**6.1000e-004**	**2.0000e-003**	**24.5659**

3.6 Pond A4 Bypass - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1120	0.9437	1.3615	2.4100e-003		0.0429	0.0429		0.0429	0.0429	0.0000	206.8659	206.8659	9.1000e-003	0.0000	207.0934
Total	**0.1120**	**0.9437**	**1.3615**	**2.4100e-003**		**0.0429**	**0.0429**		**0.0429**	**0.0429**	**0.0000**	**206.8659**	**206.8659**	**9.1000e-003**	**0.0000**	**207.0934**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1120	0.9437	1.3614	2.4100e-003		0.0429	0.0429		0.0429	0.0429	0.0000	206.8657	206.8657	9.1000e-003	0.0000	207.0932
Total	**0.1120**	**0.9437**	**1.3614**	**2.4100e-003**		**0.0429**	**0.0429**		**0.0429**	**0.0429**	**0.0000**	**206.8657**	**206.8657**	**9.1000e-003**	**0.0000**	**207.0932**

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Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**