CITY OF PACIFICA

WET WEATHER FLOW EQUALIZATION BASIN PROJECT

DRAFT MITIGATED NEGATIVE DECLARATION/ INITIAL STUDY

DECEMBER 2016

Prepared for

City of Pacifica
1800 Francisco Boulevard
Pacifica, California 94044

Prepared by

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1404 Franklin Street, Suite 600
Oakland, California 94612

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NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION FOR THE CITY OF PACIFICA WET WEATHER EQUALIZATION BASIN PROJECT

PROJECT TITLE:	**City of Pacifica Wet Weather Flow Equalization Basin Project**
PROJECT SPONSOR:	**City of Pacifica, Public Works Department**
PROJECT LOCATION:	**Equalization Basin Location:** City of Pacifica Skatepark parking lot (southeast of the Skatepark and southwest of the Pacifica Community Center) 540 Crespi Drive, Pacifica, CA 94044 **Pipeline Locations:** Crespi Drive along the northeast side of Community Center, Anza Drive near Balboa Way, Balboa Way between Anza Drive and Arguello Boulevard, Arguello Boulevard between Balboa Way and DeSolo Drive, DeSolo Drive between Arguello Boulevard and Linda Mar Boulevard, and Linda Mar Boulevard near DeSolo Drive. **Sanitary Sewer Diversion Structures (2):** Intersection of Arguello Boulevard and Balboa Way, and Intersection of Linda Mar Boulevard and De Solo Drive.
DATE OF PUBLIC NOTICE:	**December 8, 2016**
PUBLIC REVIEW PERIOD:	**December 8, 2016 through January 13, 2017 (5:00 pm)**
DATE OF PUBLIC MEETING:**	**December 15, 2016 from 6:30 p.m. to 8:00 p.m. at the Pacifica Community Center – Auditorium 540 Crespi Drive Pacifica, CA 94044**

*****See Public Review and Comment heading below for more details regarding the Public Meeting***

Project Description:

The City of Pacifica ("the City") intends to construct and utilize the proposed wet weather flow equalization basin ("the EQ basin") and associated pipelines (together referred to as "the Project") as a key element to mitigate storm-related sanitary sewer overflows (SSOs) in the City's wastewater collection system and reduce peak wet weather flows to the City's Calera Creek Water Recycling Plant. The City's sanitary sewer collection system is subject to infiltration and inflow of extraneous groundwater and stormwater into the system, resulting in high wet weather flows during storm events. As a result, SSOs have occurred at several locations in the system during large storms.

Since 2004, the City has been required to monitor and report occurrences of SSOs, initially to the San Francisco Bay Regional Quality Control Board (RWQCB), and since 2007 to the State Water Resources Control Board under the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems adopted in 2006. Under the regional and state regulations, the City is also required to prepare and adopt a Sewer System Management Plan (SSMP), which must include plans and programs for addressing the operation and maintenance of the system and assessing its condition and capacity. The City prepared the *Collection System Master Plan* ("the Master Plan"; RMC 2011) to meet specific SSMP requirements, as well as to develop a long-term plan for rehabilitation, replacement, and capacity improvements to its system.

As a result of SSOs that have occurred in the system, the RWQCB issued a Cease and Desist Order (CDO) to the City in May 2011 (RWQCB 2011), and the City entered into a Consent Decree with Our Children's Earth Foundation in June 2011, requiring it to implement a number of measures targeted at reducing SSOs. The CDO and Consent Decree have similar requirements, including:

- developing and implementing an SSO reduction plan,
- implementing a computerized maintenance management system,
- implementing programs addressing system-wide cleaning, root control, illicit discharge elimination, and private sewer lateral inspection and repair,
- performing a condition assessment of the collection system,
- preparing a System Evaluation and Capacity Assurance Plan (SECAP),
- staff training in implementing the measures, and
- developing an initial and long-term capital improvement plan (CIP) and financial plan.

The Master Plan specifically addresses the condition assessment of the system (based on inspection data collected), the SECAP, and development of a long-term CIP.

The City evaluated many options to meet the requirements presented in the CDO and Consent Decree. The Master Plan included evaluation of a capacity enhancement only project, the installation of an EQ basin, and capacity improvements with sewer system rehabilitation. Based on this comparison, the best alternative was determined to be the implementation of an equalization basin. This alternative was determined to provide the best assurance of meeting regulatory and legal requirements to eliminate capacity-related SSOs in the near term, and has the lowest estimated capital cost of the three alternatives.

Based on preliminary analyses performed during previous engineering studies, four potential sites for the EQ basin were identified for detailed feasibility analyses. Variations in the siting of the EQ basin on a given site or in the routing of associated pipelines resulted in seven potential alternatives as described in

the *Wet Weather EQ Basin Site Feasibility Evaluation* (RMC 2015a). The sites identified in the *Feasibility Evaluation and Addendum* (RMC 2015b) included the following, as shown on **Figure 1:**

- Site 1A: The west end of the park-and-ride parking lot at or along Linda Mar Boulevard.
- Site 2A: Skatepark parking lot with associated pipelines parallel to State Route 1 (SR-1). Alternatives Site 2A and Site 2B have the same proposed EQ basin location and footprint but differ in the orientation for the effluent pipeline.
- Site 2B: Skatepark parking lot with associated pipelines that avoid SR-1.
- Site 2C: Skatepark parking lot with associated pipelines that avoid SR-1 (located closer to the Community Center and approximately 80 to 150 feet from the parcel boundary for residences to the southwest).
- Site 3A: The Crespi Drive parking lot with associated pipelines parallel to SR-1.
- Site 3B: The Crespi Drive parking lot with associated pipelines that avoid SR-1.
- Site 4: The Linda Mar Pump Station parking lot.

Each site presented challenges. Site 2C was selected by the City as the preferred site for placement of the EQ basin as it was property the City already owned, had a lower cost for construction, and presented the least public impact based on providing the greatest distance from private residences within the Site 2 area.

The Project would include the installation of a 2.1-million-gallon capacity EQ basin, two diversion structures to passively divert excess flows from the existing Linda Mar Boulevard and Arguello Boulevard sanitary sewer lines and transport the flow via a conveyance pipeline to the EQ basin during storm events, an effluent conveyance pipeline routing flows to the existing Crespi Drive sanitary sewer line and the Linda Mar Pump Station, a 10-foot tall motor control center building equipped with a 4-foot-high metal antenna that would allow radio communication with the City's Calera Waste Water Treatment Plant and the Linda Mar Pump Station, a ventilation and odor-control system, and a potable-water-supplied cleaning system within the EQ basin.

The EQ basin would be located within the parking lot for the City of Pacifica's Skatepark and immediately southwest of the Community Center (located at 540 Crespi Drive) on the east side of SR-1. This location is identified as Site 2C as presented in the Feasibility Evaluation Addendum that was issued in August 2015 by RMC. The property for the proposed EQ basin is owned by the City of Pacifica, zoned for Controlled Manufacturing, and is identified as Public Facilities in the City of Pacifica General Plan.

The proposed EQ basin construction site is bounded by open space areas to the east and west, residential parcels approximately 80 feet to the southwest, and the Skatepark and Community Center complexes to the northwest and northeast, respectively. There is an open, vegetated drainage swale between the southwestern end of the parking lot and the nearby residences.

The proposed two diversion structures and conveyance pipelines to and from the EQ basin would be constructed in City-owned rights-of-way or public utility easements.

During construction of the EQ Basin, the Skatepark parking lot would be closed to the public, and normal parking in this area would be diverted to the Crespi Parking Lot west of the Community Center. Following completion of EQ basin construction, the Skatepark parking lot would be reconstructed above the EQ basin structure to provide, at minimum, the same number of parking spots as in the existing parking lot.

The Project site is not included on any lists enumerated under Section 65962.5 of the Government Code.

Environmental Review:

An Initial Study (IS) has been prepared under the requirements of the California Environmental Quality Act for review and action by the City of Pacifica. The IS evaluates the potential environmental impacts of the Project. Based on the results of the IS, it has been determined that the Project would not have a significant effect on the environment. Therefore, an Environmental Impact Report is not required, and a Mitigated Negative Declaration (MND) has been prepared. The Project has been modified to incorporate mitigation measures that would reduce potential environmental impacts to a less-than-significant level. The City of Pacifica is hereby releasing this Draft MND/IS, finding it to be accurate and complete and ready for public review.

Public Review and Comment: The public comment period for the Draft MND/IS is December 8, 2016, through January 13, 2017. The City has opted to extend the typical 30-day public review period for an MND/IS to 37 days due to the timing of the public review period during the holiday season. All comments received during the review period will be considered by the City prior to finalizing the MND/IS and making a decision on the Project. Any interested party may comment on the Project or the Draft MND/IS. Comments should focus on the sufficiency of the proposed MND/IS in discussing possible impacts on the physical environment and ways in which potential adverse effects might be minimized in light of the MND/IS's purpose to provide useful and accurate information about such factors. Comments must be received no later than **5:00 p.m. on January 13, 2017**.

The City of Pacifica will host a public meeting on the Project as detailed below:

December 15, 2016 from 6:30p.m. to 8:00p.m.
Pacifica Community Center – Auditorium
540 Crespi Drive
Pacifica, CA 94044

The meeting will begin with a presentation, followed by an open house format where staff will be available to answer questions regarding the proposed project. Written comments on the MND/IS will be accepted during the meeting.

Please note that verbal comments made at the meeting will not be recorded and therefore will not be directly addressed in the Final MND/IS. However, staff will note general themes of verbal comments made and will address those in the Final MND/IS. Therefore, staff encourages the public to submit written comments to ensure that their specific comments are represented in the project record and addressed in the Final MND/IS. Please be sure to include your name, address, and telephone number with your comment.

Please send comments to the following address:

Bonny O'Connor, Assistant Planner
City of Pacifica Planning Department
1800 Francisco Boulevard
Pacifica, California 94044
Fax: 650-359-5807
Email: o'connorb@ci.pacifica.ca.us

For further information or requests to receive project-related documents, please contact Bonny O'Connor at o'connorb@ci.pacifica.ca.us.

The proposed MND/IS is available for review online at the City of Pacifica Planning Department's Environmental Documents webpage (http://www.cityofpacifica.org/depts/planning/environmental_documents/default.asp), or in hardcopy at the following locations:

Location	Address	Hours
City of Pacifica Planning Department, Planning and Building Office	1800 Francisco Boulevard Pacifica, CA 94044	Monday, Tuesday, Thursday: 8:00 AM to 5:00 PM* Wednesday: 8:00 AM to 7:30 PM* Friday: 8:00 AM to 1:00 PM *Closed During Lunch 12:30 PM to 1:30 PM Closed on Holidays
Pacifica-Sanchez Library	1111 Terra Nova Boulevard Pacifica, CA 94044	Monday: 12:00 PM – 8:00 PM Wednesday: 10:00 PM – 6:00 PM Friday: 10:00 AM – 5:00 PM Saturday: 10:00 AM – 5:00 PM Closed: Tuesday, Thursday, Sunday Closed on Holidays
Pacifica-Sharp Park Library	104 Hilton Way Pacifica, CA 94044	Tuesday: 12:00 PM – 8:00 PM Wednesday: 12:00 PM – 8:00 PM Thursday: 10:00 AM – 5:00 PM Saturday: 10:00 AM – 5:00 PM Closed: Monday, Friday, Sunday Closed on Holidays

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TABLES

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APPENDICES

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ACRONYMS AND ABBREVIATIONS

µg	micrograms
µg/m^3	micrograms per cubic meter
µm	micrometers
AB 52	Assembly Bill 52
ABAG	Association of Bay Area Governments
ADA	Americans with Disability Act
APCO	Air Pollution Control Office
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
Basin Plan	*The Water Quality Control Plan for the San Francisco Bay Basin*
BAT	Best Available Technology Economically Achievable
BAU	business-as-usual
BCT	Best Conventional Pollutant Control Technology
BMPs	best management practices
BSA	Biological Study Area
CalEEMod	California Emissions Estimator Model 2013.2.2
CALGreen	California Green Building Standards Code
Cal/OSHA	California Occupational Safety and Health Administration
CAOs	Cleanup and Abatement Orders
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBIA	California Building Industry Association
CBSC	California Building Standards Commission
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDO	Cease and Desist Order

CEQA	California Environmental Quality Act
CGP	Construction General Permit
CH_4	methane
CIP	capital improvement plan
City	the City of Pacifica (
CMMS	computerized maintenance management system
CMP	Congestion Management Program
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide-equivalents
CRLF	California red-legged frog
CUPA	Certified Unified Program Agency
dBA	A-weighted decibels
DPM	diesel particulate matter
DR	dimension ratio
DTSC	Department of Toxic Substances Control
EIRs	Environmental Impacts Reports
EPA	Environmental Protection Agency
EQ basin	proposed wet weather flow equalization basin
EQ	equalization
FAA	Federal Aviation Administration
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
GAC	granular activated carbon
General Plan	*City of Pacifica General Plan*

GHGs	greenhouse gases
HDPE	high density polyethylene
HI	Hazard Index
HMBP	Hazardous Material Business Plan
hp	horsepower
HSC	Health & Safety Code
I/I	infiltration and inflow
IFF	Important Farmland Finder
in/sec	inches/second
IS	Initial Study
lbs	pounds
lbs/day	pounds per day
LCFS	Low Carbon Fuel Standard
LCLUP	Local Coastal Land Use Plan
Ldn	day-night average sound level
Leq	equivalent continuous noise level
LID	low-impact development
Lmax	maximum sound level
Local Coastal Land Use Plan	*City of Pacifica Local Coastal Land Use Plan*
LOS	Level of Service
LRP	Legally Responsible Person
M-1	zoned for Controlled Manufacturing
Master Plan	Collection System Master Plan
MBTA	Migratory Bird Treaty Act
MCC	motor control center
MEP	Mechanical, Electrical, and Plumbing
MMRP	Mitigation Monitoring and Reporting Program Checklist
MND	Mitigated Negative Declaration

N_2O	nitrous oxide
NAHC	Native American Heritage Commission
NAVD88	North American Vertical Datum of 1988
NCCWD	North Coast County Water District
NOI	Notice of Intent
NOx	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
NPOC	non-precursor organic compounds
O&M	operation and maintenance
OEHHA	Office of Environmental Health Hazard Assessment
OSHA	Occupational Safety and Health Administration
PF	Public Facilities
PM10	coarse particulate matter or particulates with an aerodynamic diameter of 10 µm or less
PM2.5	fine particulate matter or particulates with an aerodynamic diameter of 2.5 µm or less
POC	precursor organic compounds
ppm	parts per million
PPV	peak particle velocity
Project	the proposed City of Pacifica Wet Weather Flow Equalization Basin Project, including the proposed wet weather flow equalization basin and associated pipelines
psi	pounds per square inch
R-1	zoned for Single-Family Residential
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SECAP	System Evaluation and Capacity Assurance Plan
SFGS	San Francisco garter snake
SFO	San Francisco International Airport

Skatepark	the City of Pacifica Skatepark
SO_2	sulfur dioxide
SR-1	Cabrillo Highway or State Route 1
SSMP	Sewer System Management Plan
SSOs	sanitary sewer overflows
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TCR	Tribal Cultural Resource
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
UST	underground storage tank
utility easement	an existing 200-linear-foot-long by two 5-foot-wide utility easements between the EQ basin site and the intersection of Anza Drive and Balboa Way
WQOs	water quality objectives
WUI	Wildlife-Urban Interface

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INTRODUCTION

Environmental Review

The proposed Wet Weather Flow Equalization (EQ) Basin Project ("the Project") is not exempt from the California Environmental Quality Act (CEQA) and thus requires the preparation of an Initial Study (IS) to determine whether the Project may have a significant adverse effect on the environment. If there are no adverse effects, or if the potential adverse effects can be reduced to a level that is less than significant through project revisions, a Negative Declaration or Mitigated Negative Declaration (MND) can be adopted by the Lead Agency (Public Resources Code Section 21080). A MND is a type of Negative Declaration that allows the Lead Agency to revise the Project prior to circulating the environmental document for public review.

The City of Pacifica ("the City"), the Lead Agency, has prepared an IS for the Project which determined that the Project would not have a significant effect on the environment with implementation of the mitigation measures recommended in the IS. The City has agreed to implement the mitigation measures identified in the IS. Therefore, a MND has been prepared for the Project.

Public Resources Code Section 21081.6(a) requires the Lead Agency to adopt a monitoring or reporting program for projects subject to the preparation of Environmental Impacts Reports (EIRs) or MNDs. The Draft Mitigation Monitoring and Reporting Program Checklist (MMRP) for the Project is included in Appendix E of the Draft IS.

Report Organization

Mitigated Negative Declaration: contains a summary of potential impacts that may result from the construction and operation of the Project and identifies mitigation measures necessary to make the determination that the Project would not have a significant effect on the environment.

Initial Study: provides an environmental checklist, information on existing conditions at the Project site and vicinity, a discussion of potential impacts, description of mitigation measures, and appendix containing technical studies and other supporting data.

MITIGATED NEGATIVE DECLARATION

Project Description

The City intends to construct and utilize the proposed wet weather flow equalization basin ("the EQ basin") and associated pipelines (together referred to as "the Project") as a key element to mitigate storm-related sanitary sewer overflows (SSOs) in the City's wastewater collection system and reduce peak wet weather flows to the City's Calera Creek Water Recycling Plant. The City's sanitary sewer collection system is subject to infiltration and inflow (I/I) of extraneous groundwater and stormwater into the system, resulting in high wet weather flows during storm events. As a result, SSOs have occurred at several locations in the system during large storms.

Since 2004, the City has been required to monitor and report occurrences of SSOs, initially to the San Francisco Bay Regional Quality Control Board (RWQCB), and since 2007 to the State Water Resources Control Board (SWRCB) under the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems adopted in 2006. Under the regional and state regulations, the City is also required to prepare and adopt a Sewer System Management Plan (SSMP), which must include plans and programs for addressing the operation and maintenance (O&M) of the system and assessing its condition and capacity. The City prepared the Collection System Master Plan ("the Master Plan"; RMC 2011) to meet specific SSMP requirements, as well as to develop a long-term plan for rehabilitation, replacement, and capacity improvements to its system.

As a result of SSOs that have occurred in the system, the RWQCB issued a Cease and Desist Order (CDO) to the City in May 2011 (RWQCB 2011), and the City entered into a Consent Decree with Our Children's Earth Foundation in June 2011, requiring it to implement a number of measures targeted at reducing SSOs. The CDO and Consent Decree have similar requirements, including:

- developing and implementing an SSO reduction plan,
- implementing a computerized maintenance management system (CMMS),
- implementing programs addressing system-wide cleaning, root control, illicit discharge elimination, and private sewer lateral inspection and repair,
- performing a condition assessment of the collection system,
- preparing a System Evaluation and Capacity Assurance Plan (SECAP),
- training staff in implementing the measures, and
- developing an initial and long-term capital improvement plan (CIP) and financial plan.

The Master Plan specifically addresses the condition assessment of the system (based on inspection data collected), the SECAP, and development of a long-term CIP.

The City evaluated many options to meet the requirements presented in the CDO and Consent Decree. The Master Plan included evaluation of a capacity enhancement only project, the installation of an EQ basin, and capacity improvements with sewer system rehabilitation. Based on this comparison, the best alternative was determined to be the implementation of an EQ basin. This alternative was determined to provide the best assurance of meeting regulatory and legal requirements to eliminate capacity-related SSOs in the near term, and has the lowest estimated capital cost of the three alternatives.

Based on preliminary analyses performed during previous engineering studies, four potential sites for the EQ basin were identified for detailed feasibility analyses. Variations in the siting of the EQ basin on a given site or in the routing of associated pipelines resulted in seven potential alternatives as described in the Wet Weather EQ basin Site Feasibility Evaluation (RMC 2015a). The Sites identified in the Feasibility Evaluation and Addendum (RMC 2015b) included the following, as shown on Figure 1:

- Site 1A: The west end of the park-and-ride parking lot at or along Linda Mar Boulevard.
- Site 2A: The City of Pacifica Skatepark ("the Skatepark") parking lot with associated pipelines parallel to State Route 1 (SR-1). Alternatives Site 2A and Site 2B have the same proposed EQ basin location and footprint but differ in the orientation for the effluent pipeline.
- Site 2B: Skatepark parking lot with associated pipelines that avoid SR-1.
- Site 2C: Skatepark parking lot with associated pipelines that avoid SR-1 (located closer to the Community Center and approximately 80 to 150 feet from the parcel boundary for residences to the southwest).
- Site 3A: The Crespi Drive parking lot with associated pipelines parallel to SR-1.
- Site 3B: The Crespi Drive parking lot with associated pipelines that avoid SR-1.
- Site 4: The Linda Mar Pump Station parking lot.

Each site presented challenges. Site 2C was selected by the City as the preferred site for placement of the EQ basin as it was property the City already owned, had a lower cost for construction, and presented the least public impact based on providing the greatest distance from private residences within the Site 2 area. The Project would include the installation of a 2.1-million-gallon capacity EQ basin, two diversion structures to passively divert excess flows from the existing Linda Mar Boulevard and Arguello Boulevard sanitary sewer lines and transport the flow via a conveyance pipeline to the EQ basin during storm events, an effluent

conveyance pipeline routing flows to the existing Crespi Drive sanitary sewer line and the Linda Mar Pump Station, a 10-foot-tall motor control center (MCC) building equipped with a 4-foot-high metal antenna that would allow radio communication with the City's Calera Waste Water Treatment Plant, a ventilation and odor-control system, and a potable-water-supplied cleaning system within the EQ basin.

The EQ basin would be located within the parking lot for the Skatepark and immediately southwest of the Community Center (located at 540 Crespi Drive) on the east side of SR-1. This location is identified as Site 2C as presented in the Feasibility Evaluation Addendum submitted in August 2015 by RMC (RMC 2015b). The property for the proposed EQ basin is owned by the City, zoned for Controlled Manufacturing, and is identified as Public Facilities in the City's General Plan.

The proposed EQ basin construction site is bounded by open space areas to the east and west, residential parcels approximately 80 feet to the southwest, and the Skatepark and Community Center complexes to the northwest and northeast, respectively. There is an open, vegetated drainage swale between the southwestern end of the parking lot and the nearby residences.

The proposed two diversion structures and conveyance pipelines to and from the EQ basin would be constructed in City-owned rights-of-way or public utility easements.

During construction of the EQ Basin, the Skatepark parking lot would be closed to the public, and normal parking in this area would be diverted to the Crespi Parking Lot west of the Community Center. Following completion of EQ basin construction, the Skatepark parking lot would be reconstructed above the EQ basin structure to provide, at minimum, the same number of parking spots as in the existing parking lot.

Project construction is anticipated to occur during a 17-month period starting in May 2017 and ending in late September 2018. Construction hours would be limited to the following:

- Within the EQ basin area (Skatepark parking lot area including the excavation for the jacking and receiving pits): 8:00 a.m. to 5:00 p.m. Monday through Friday
- Along City streets (except at the intersection of Linda Mar Boulevard and De Solo Drive): 9:00 a.m. to 4:00 p.m.
- At the intersection of Linda Mar Boulevard and De Solo Drive: 9:00 a.m. to 3:00 p.m.

Weekend and night work is not anticipated.

Project Location

EQ Basin Location:

City of Pacifica Skatepark parking lot (southeast of the Skatepark and southwest of the Community Center) 540 Crespi Drive, Pacifica, CA 94044

Pipeline Locations:

- Crespi Drive along the northeast side of Community Center,
- Anza Drive near Balboa Way, Balboa Way between Anza Drive and Arguello Boulevard,
- Arguello Boulevard between Balboa Way and DeSolo Drive,
- DeSolo Drive between Arguello Boulevard and Linda Mar Boulevard, and
- Linda Mar Boulevard near DeSolo.

Sanitary Sewer Diversion Structures:

- Intersection of Arguello Boulevard and Balboa Way, and
- Intersection of Linda Mar Boulevard and De Solo Drive.

Project Sponsor

City of Pacifica Public Works Department
155 Milagra Drive
Pacifica, CA 94044

Finding

The Project would not have a significant effect on the environment based on the IS prepared according to CEQA Guidelines. Mitigations have been incorporated into the Project to reduce the identified potentially significant impacts to a less-than-significant level.

Potentially Significant Impacts

The attached IS indicates that the Project could adversely affect the environment. The identified potentially significant impacts are presented below.

Mitigation Measures and Applicant Proposed Measures

In the interest of reducing the potential impacts to the point where the net effect for the Project is insignificant, mitigation measures are recommended. A discussion of the potential impacts of interest and the associated mitigation measures is provided below.

Aesthetics

Impact: During Project construction, heritage trees would be removed.

Mitigation Measure:

AES-1 The Tree Protection Plan prepared by the City (or designee) shall include a schedule and replacement ratio for heritage tree removal. The Tree Protection Plan shall require that

replacement trees shall be placed as closely as feasible to the removal sites in order to return aesthetics to pre-project conditions.

Residual Impact: Less than significant with implementation of the mitigation measure.

Air Quality

Impact: During Project construction, grading and soil disturbing activities would generate fugitive dust.

Mitigation Measure:

AQ-1 The selected contractor shall include basic measures to control dust and exhaust during construction, as recommended by the Bay Area Air Quality Management District (BAAQMD). During any construction period with ground disturbance, the Project contractor shall implement the following BAAQMD-recommended best management practices (BMPs):

1. All exposed non-hardscaped surfaces (e.g., temporary parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered appropriately to maintain a damp condition.

2. All haul trucks transporting soil, sand, or other loose material offsite shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping or washing down paved streets using potable water is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage with these requirements shall be provided for construction workers at all access points.

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

8. A publicly visible sign shall be posted with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Residual Impact: Less than significant with implementation of the mitigation measure.

Impact prior to Applicant Proposed Measure: Project construction emissions would cause excess cancer risk to sensitive receptors (where residences in the area have infants present) to exceed the BAAQMD CEQA community risk thresholds for project-only impacts.

Applicant Proposed Measure:

APM-1 During construction, the selected contractor shall use off-road equipment that would meet, at minimum, the following criteria:

1. All mobile diesel-powered off-road equipment larger than 25 horsepower (hp) and operating on the site for more than 20 hours shall meet, at a minimum, one of the following:

    a. Equipped with engines meeting U.S. Environmental Protection Agency (EPA) particulate matter emissions standards for Tier 2 engines or equivalent;

    b. All diesel-powered portable equipment (i.e., generators, concrete saws, and pumps) operating on the site for more than 20 hours shall be equipped with California Air Resources Board (CARB)-certified Level 3 Diesel Particulate Filters or meet U.S. EPA particulate matter emissions standards for Tier 4 engines or equivalent;

    c. Alternatively fueled (i.e., non-diesel) equipment shall be used; or

    d. Other measures may be the use of added exhaust devices, or a combination of measures, provided that these measures are approved by the City and demonstrated to reduce community risk impacts to less than significant.

2. Line power shall be utilized as soon as feasible, limiting the use of all diesel-fueled generators, including any diesel-powered welders used for construction activities exceeding 20 days for each piece of equipment.

Alternatively, prior to construction, the selected contractor may develop a plan, verified by a qualified air specialist and approved by the City, which ensures that the off-road equipment used onsite to construct the Project would achieve a fleet-wide average 75 percent reduction in coarse particulate matter or particulates with an aerodynamic

diameter of 10 micrometers (µm) or less (PM_{10}) exhaust emissions, compared to uncontrolled aggregate statewide emission rates for similar equipment.

Residual Impact: Less than significant with implementation of the mitigation measure.

Biological Resources

Impact: Project construction could impact biological resources including candidate, sensitive, or special status species, riparian habitat or sensitive natural community, and wetlands.

Mitigation Measures:

BIO-1 The City shall implement the following measures or designate implementation of these measures to the contractor prior to construction:

1. Post signage indicating that travel and parking of vehicles and equipment must be limited to pavement, existing roads, and previously disturbed areas.

2. Include provisions in the Project Plans detailing the areas that have been found to be acceptable for disturbance (i.e., previously disturbed areas and those within the Biological Study Area [BSA]). The contractor shall not disturb or remove vegetation outside of these areas. Work areas that would be temporarily impacted by construction would be restored with respect to pre-existing contours and conditions upon completion of work. Restoration work including re-vegetation and soil stabilization shall be evaluated upon completion of work and performed as needed.

3. The City shall ensure that the Stormwater Pollution Prevention Plan (SWPPP) prepared and implemented for the project shall include measures that:

   - minimize erosion and/or prevent water-borne silt from being deposited in adjacent undeveloped areas;

   - prevent waste and/or construction materials from getting into the adjacent undeveloped areas; and

   - control and prevent the discharge of all potential pollutants, including hazardous materials, solid wastes, paints, concrete, petroleum products, chemicals, wash water or sediment, and non-stormwater discharges to adjacent undeveloped areas via storm drains, water courses, or sheet flow.

BIO-2 The City shall implement the following measures or designate implementation of these measures to the contractor:

1. A qualified biologist shall assist with the placement of wildlife exclusion fencing, and verify that stormwater protection measures to protect adjacent undeveloped areas are in place prior to construction. The biologist shall be provided the contact information of the SWPPP Qualified SWPPP Developer (QSD), and vice versa.

2. Before the contractors, their employees, or any persons start any work onsite, each worker shall participate in an employee education program, consisting of a brief presentation to explain biological resources on the Project site, which shall be conducted by a qualified biologist. The program shall include the following:

    a. a description of relevant special-status species, nesting birds, and bats, along with their habitat needs as they pertain to the BSA;

    b. a report of the occurrence of these species in the Project vicinity, as applicable;

    c. an explanation of the status of these species and their protection under the federal and state regulations;

    d. a list of measures being taken to reduce potential impacts to natural resources during project construction and implementation;

    e. instructions if a special-status species is found onsite; and

    f. a summary of the personal consequences of violating state and federal law related to these species.

    A fact sheet conveying this information shall be prepared and distributed to the above-mentioned people and anyone else who may enter the work areas within the BSA. Upon completion of training, employees shall sign a form stating that they attended the training and agree to all the conservation and protection measures. The training logs shall be provided to the City on a monthly basis.

3. A qualified biologist shall conduct a pre-construction survey within the Project area for the presence of the California red-legged frog (CRLF) and/or the San Francisco garter snake (SFGS). The survey shall be conducted immediately prior to the initial onset of Project activities. If any special-status species are found, work shall not commence until the appropriate state and/or federal resource agencies are contacted and avoidance and mitigation measures are in place.

4. Within the disturbed areas of the BSA, all burrows that can be potentially occupied by CRLF and SFGS shall be hand-excavated by a qualified biologist who holds current permits to handle these species, prior to the start of construction activities. If CRLF or SFGS are found, the United States Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) shall be consulted to determine

an appropriate course of action. Actions could include the relocation of the animal to nearby habitat, and compensatory mitigation for removal of occupied habitat.

5. A wildlife exclusion/environmental fence (with escape routes, such as exit funnels) shall be erected around active construction areas to prevent the movement of animals into active construction areas under oversight by a qualified biologist. During construction, the fence shall be checked every day before construction activities commence for damage, breaks, or trapped wildlife. Any damage to the fence shall be repaired in a timely manner. The qualified biologist overseeing the placement of wildlife exclusion fencing shall ensure placement of the fence so that a minimum 3-foot-wide wildlife corridor remains open between the south end of the Skatepark parking lot and the residential fences.

6. A qualified biologist shall inspect the area inside of the fence for CRLF and SFGS every day before construction activities commence. If any special-status species are found, construction activities shall not be allowed to start and the USFWS and CDFW shall be consulted on an appropriate course of action. Such action could include leaving the animal alone to move away on its own or the relocation of the animal to an area outside of the BSA.

7. When construction and construction-related activities (including, but not limited to, mobilization and staging, clearing, grubbing, vegetation removal, fence installation, demolition, and grading noise) occur during the avian nesting season (from February 1 to August 31 for passerines and January 1 to September 15 for raptors), all suitable habitats located within the Project's area of disturbance, including staging and storage areas plus a 250-foot (passerines) and 1,000-foot (raptor nests) buffer around these areas, shall be thoroughly surveyed, as feasible, for the presence of active nests by a qualified biologist no more than five days before commencement of any site disturbance activities and equipment mobilization. If project activities are delayed by more than five days, an additional nesting bird survey shall be performed. Active nesting is present if a bird is building a nest, sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys shall be documented and provided to the City's Planning Department.

   If pre-construction nesting bird surveys identify potential impacts to active nests, no site disturbance and mobilization of heavy equipment shall take place within a buffer determined by the biologist in consultation with a CDFW biologist. During that consultation, it can also be determined what low-impact construction activities are allowed within the buffer. The buffer shall be in place until the chicks have fledged. Monitoring shall be required to ensure compliance with the Migratory Bird

Treaty Act (MBTA) and California Fish and Game Code. Monitoring dates and findings shall be documented and provided to the City's Planning Department.

8. A preconstruction survey of trees within the developed and disturbed areas of the BSA shall be conducted by a qualified biologist for colony bat roosts within 14 days prior to the onset of project activity, and the survey shall be documented and provided to the City's Planning Department. If an occupied maternity or colony roost is detected, the CDFW shall be consulted to determine appropriate measures, such as bat exclusion methods, if the roost cannot be avoided.

9. Food items may attract wild animals onto the construction site, which would expose them to construction-related hazards. The construction site shall be maintained in a clean condition. All trash (e.g., food scraps, cans, bottles, containers, wrappers, cigarette butts, and other discarded items) shall be placed in closed containers and properly disposed of.

10. If an animal is found at the work site and is believed to be a protected species, work must be halted and the project biologist contacted for guidance. Care must be taken not to harm or harass the species. No wildlife species shall be handled and/or removed from the Project area by anyone except qualified biologists.

11. The Project specifications, the contractor's work plan, and/or SWPPP shall include provisions to ensure that the use of monofilament netting, including its use in temporary and permanent erosion control materials, is avoided altogether. All holes greater than 1 foot deep must be sealed overnight to prevent the entrapment of wildlife. Where holes or trenches cannot be sealed, escape ramps that are no greater than 30% slope shall be positioned such that entrapped wildlife would be able to escape. The escape ramps should be at least 1 foot wide and covered/fitted with a material that provides traction.

Residual Impact: Less than significant with implementation of the mitigation measure.

Cultural Resources

Impact: During Project construction, it is possible that unknown prehistoric, historic, or paleontological resources and human remains could be disturbed.

Mitigation Measures:

CUL-1 In the event that any prehistoric, historic, or paleontological materials are discovered during ground-disturbing activities, ground work shall cease at the Project site and discovered materials and their surroundings shall not be altered or collected. A qualified archaeologist or paleontologist shall be consulted as to the significance of the find, and avoidance measures or appropriate mitigation shall be completed according to CEQA

guidelines. Significant cultural materials recovered shall be subject to scientific analysis and/or professional museum curation, and a report shall be prepared by the qualified archaeologist according to current professional standards. Ground disturbance activities shall continue upon direction from the qualified archaeologist according to current professional standards.

CUL-2 Prior to performing ground disturbance activities, all onsite workers shall be trained by a City-approved archaeologist in what cultural resources are, identifying cultural resources, the procedure if a cultural resource is found, and their legal responsibility to protect cultural resources. Training logs shall be provided to the City regularly.

Residual Impact: Less than significant with implementation of the mitigation measures.

Hazards and Hazardous Materials

Impact: During Project construction, it is possible that contaminated soil or groundwater could be encountered.

Mitigation Measure:

HAZ-1 The City shall ensure that:

(a) The construction contractor (or designee) shall conduct a private utility survey for the presence of underground utilities, fill pipes, and underground storage tanks (USTs) prior to excavation within the Skatepark parking lot area, areas of the proposed jacking and receiving pits, and along the proposed locations of the influent and effluent conveyance pipelines. In the event that a UST is identified within the excavation boundaries, the City shall contact an environmental consultant, who shall perform and/or coordinate the investigation for the presence of contamination in accordance with applicable regulations. A report of the findings of the geophysical survey shall be submitted to the City's Construction Manager and City's Public Works Department liaison.

(b) The construction contractor shall require that site workers be trained in identifying contaminated soil and/or groundwater. In the event that contaminated soil or groundwater is encountered (either visually or through odor detection) during excavation activities, the construction contractor shall follow the procedures below:

- Stop work in areas with suspected contamination;
- Immediately report observations to the City's Construction Manager;
- Contact an environmental consultant, who shall perform and/or coordinate the investigation of suspected contamination in accordance with applicable regulations.

(c) If necessary, based on the findings of the environmental consultant, the City's Public Works Department shall notify San Mateo County Environmental Health Department, San Francisco Bay RWQCB, and/or the California Department of Toxic Substances Control (DTSC).

(d) If investigation confirms presence of contamination, the environmental consultant shall perform and/or coordinate appropriate site investigation and cleanup procedures in accordance with regulatory requirements, including the appropriate segregation and disposal of contaminated soil and groundwater. Once the extents of the contamination have been delineated and the contaminated materials (i.e., soil and/or groundwater) have been excavated or otherwise remediated (e.g., in-situ treatment), ground-disturbing activities shall continue.

Residual Impact: Less than significant with implementation of the mitigation measure.

Impact: During Project construction, hazardous materials would be stored and used on the project site.

Mitigation Measure:

HAZ-2 The selected contractor shall be required to use BMPs to minimize the potential for releases of hazardous materials to groundwater, surface water, and soil. The BMPs shall be outlined in the contractor's Work Plan and provided to the City's Construction Manager, as well as the SWPPP, as required under the SWRCB Construction General Permit. The Work Plan shall include BMPs that accomplish the following:

- Discussion of methodology and available technology for waste management and materials pollution control, as well as other construction-related activities.
- Provisions for training the site workers on the proper storage and handling of hazardous substances, such as fuels, lubricants, paints, and solvents. Training logs shall be provided to the City regularly.
- A process for responding to, and tracking, complaints pertaining to construction activity, including identification of the City's Construction Manager. The Construction Manager shall determine the cause of the complaints and shall take prompt action to correct the problem. The City's Planning and Zoning Department shall be informed who the City's Construction Manager is prior to the issuance of the first permit issued by Building Services.
- Provision for accommodation of pedestrian flow and prevention of any unauthorized personnel from entering the construction zone or material and equipment storage areas.

- Prior to construction, a portable toilet facility and a debris box shall be installed on the site and properly maintained through project completion.

Residual Impact: Less than significant with implementation of the mitigation measures.

Hydrology and Water Quality

Impact: During Project construction, the Project could violate water quality standards or waste discharge requirements if dewatering or stormwater management is not properly implemented.

Mitigation Measures:

HYDRO-1 The general contractor shall develop a dewatering plan and obtain any necessary permits for performing dewatering. The dewatering plan shall include methods to manage the potential environmental impacts that dewatering activities might have. The dewatering plan shall include the following at a minimum:

- a pre-dewatering topographic survey with a minimum vertical accuracy of 0.01 foot (if the existing site topographic survey already prepared for design purposes provides a minimum vertical accuracy of 0.01 foot, this survey can be utilized and an additional topographic survey would not be required);

- a photographic survey of structures and flatwork in the surrounding area documenting any pre-dewatering damage to the structures or flatwork, including measurements of the widths and lengths of any significant cracks in the structures or flatwork;

- pre-construction evaluation of required groundwater extraction rates and volumes, calculation of the radius of influence of the dewatering wells/sumps and anticipated settlements as a function of distance from the excavation;

- measures to address situations where water resource impacts or excessive settlements are occurring.

Monitoring of groundwater levels perpendicular to the proposed excavation zone shall be required to verify the assumptions used to calculate potential settlements.

Noise

Impact: During Project construction and operation of the blower, noise levels from the Project site would increase the ambient noise levels in the project vicinity above current levels, or thresholds identified in the City's Draft General Plan.

Mitigation Measures:

NOISE-1 No construction activities shall be permitted on the weekends or at night. To reduce construction noise levels emanating from the site and minimize disruption and annoyance of existing noise-sensitive receptors in the Project vicinity, the City shall require the selected contractor to develop a Noise Control Plan. This noise control plan shall include, but not be limited to, the following construction BMPs:

- All equipment driven by internal combustion engines shall be equipped with mufflers, which are in good condition and appropriate for the equipment.
- The construction contractor shall utilize "quiet" models of air compressors and other stationary noise sources where technology exists.
- Unnecessary idling of internal combustion engines shall be prohibited.
- Construction staging areas shall be established at locations that would create the greatest distance between the construction-related noise sources and receptors nearest the Project site during all Project construction, as feasible.
- Locate stationary noise sources as far from receptors as feasible. If they must be located near receptors, adequate muffling (with enclosures, where feasible and appropriate) would be used as necessary to comply with local noise ordinance and general plan limits. Any enclosure openings or venting would face away from receptors.
- Locate material stockpiles, as well as maintenance/equipment staging and parking areas, as far as feasible from residential receptors.
- Neighbors located adjacent to the construction site shall be notified of the construction schedule in writing.
- Designate a project liaison who shall be responsible for responding to noise complaints during construction. The name and phone number of the liaison shall be conspicuously posted at construction areas and on all advance notifications. This person shall take steps to resolve complaints, including periodic noise monitoring, if necessary. Results of noise monitoring shall be presented at regular project meetings with the Project contractor, and the liaison shall coordinate with the

contractor to modify any construction activities that generated excessive noise levels to the extent feasible.

- Require a reporting program that documents complaints received, actions taken to resolve problems, and effectiveness of these actions.
- Hold a preconstruction meeting with the job inspectors and the general contractor's onsite project manager to confirm that noise mitigation and practices (including construction hours, construction schedule, and noise coordinator) are completed.

Applicant Proposed Measure:

APM-2 The contractor shall be required to construct temporary noise barriers to shield stationary noise sources (e.g., tunneling equipment) from nearby receptors. The barrier shall be a minimum of 16 feet in height and would provide approximately 8 to 10 A-weighted decibels (dBA) of attenuation at the first floor, and approximately 5 dBA of attenuation at second and third floors, where the line-of-sight to construction activities is interrupted by the barrier.

Residual Impact: Less than significant with implementation of the mitigation measures.

Public Services

Impact: During Project construction, road closures could impact emergency vehicle routes.

Mitigation Measures:

PUB-1 At least 48 hours prior to road closures, the City's Public Works Department (or designee, such as the City's Consultant Construction Manager) shall notify local emergency service providers (Pacifica Police Department at 650-738-7314 and North County Fire Authority at 650-991-8138) of road closures and length of closure. The construction contractor shall obtain encroachment permits from the City's Engineering Department prior to construction-related lane or street parking closures.

Residual Impact: Less than significant with implementation of the mitigation measures.

Transportation and Circulation

Impact: During Project construction, construction trucks would impact local roadways and highways.

Mitigation Measures:

TRANS-1 The selected contractor shall be required to prepare a Traffic Control Plan, which shall include, at minimum:

- A set of comprehensive traffic control measures to maintain safety and Level of Service (LOS), including:
  - scheduling of major truck trips and deliveries to avoid peak traffic hours – deliveries and soil off-haul trucks shall not arrive onsite prior to 8 a.m. and shall not leave the site outside of the hours of 9 a.m. to 3 p.m.,
  - requirements for posting of detour signs,
  - requirements for traffic control personnel such as flaggers during disruptions in the City rights-of-way,
  - lane closure procedures and signage requirements,
  - placement requirements for signs and cones for drivers, and
  - designated construction access routes;
- Methods for maintaining the condition and LOS of city and state roadways;
- Notification procedures for adjacent properties and public safety personnel regarding when major deliveries, detours, and lane closures would occur;
- Location of construction staging areas for materials, equipment, and vehicles at an approved location;
- Any heavy equipment brought to the construction site shall be transported by truck, where feasible.

Residual Impact: Less than significant with implementation of the mitigation measures.

Tribal Cultural Resources

Impact: During Project construction, it is possible that unknown tribal cultural resources could be disturbed.

Mitigation Measures:

See **Mitigation Measures CUL-1** and **CUL-2.**

Residual Impact: Less than significant with implementation of the recommended mitigation measures.

Utilities

Impact: During cleaning of the EQ basin following use for wet weather events, the Project would require 130 pounds per square inch (psi) of water pressure off the existing water main on Crespi Drive.

Applicant Proposed Measure:

APM-3 As noted in the **Project Description**, prior to the flushing and cleaning of the EQ basin, the City's Wastewater Treatment Plant Superintendent, or deputy thereof, shall contact both the North County Fire Department and the North Coast County Water District to alert them of anticipated water usage. If the water usage would impede water service for either of the agencies, the flushing and cleaning of the tank would be delayed until the demand could be met.

Residual Impact: Less than significant.

INITIAL STUDY

Project Information

Project Title:	City of Pacifica Wet Weather Flow Equalization Basin
Lead Agency Name and Address:	City of Pacifica Planning Department 1800 Francisco Boulevard Pacifica, CA 94044
Contact Person and Phone Number:	Bonny O'Connor Phone: (650) 738-7341
Project Location:	Equalization Basin Location: City of Pacifica Skatepark parking lot (southeast of the Skatepark and southwest of the Pacifica Community Center) 540 Crespi Drive Pacifica, CA 94044 Pipeline Locations: Crespi Drive along the northeast side of Community Center, Anza Drive near Balboa Way, Balboa Way between Anza Drive and Arguello Boulevard, Arguello Boulevard between Balboa Way and DeSolo Drive, DeSolo Drive between Arguello Boulevard and Linda Mar Boulevard, and Linda Mar Boulevard near DeSolo. Sanitary Sewer Diversion Structures (2): Intersection of Arguello Boulevard and Balboa Way, and Intersection of Linda Mar Boulevard and De Solo Drive.
Project Sponsor's Name and Address:	City of Pacifica Public Works Department 155 Milagra Drive Pacifica, CA 94044
General Plan / Zoning Designation:	Equalization Basin Location: Public Facilities (PF)/Controlled Manufacturing (M-1) Pipeline Locations: Very Low Density Residential/Single-Family Residential (R-1)

Project Description

Background

The City intends to construct and utilize the Project as a key element to mitigate storm-related SSOs in the City's wastewater collection system and reduce peak wet weather flows to the City's

Calera Creek Water Recycling Plant. The City's sanitary sewer system is subject to I/I of extraneous groundwater and stormwater into the system, resulting in high wet weather flows during storm events. As a result, SSOs have occurred at several locations in the system during large storms.

Since 2004, the City has been required to monitor and report occurrences of SSOs, initially to the San Francisco Bay RWQCB, and since 2007 to the State Water Resources Control Board (SWRCB) under the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems adopted in 2006. Under the regional and state regulations, the City is also required to prepare and adopt an SSMP, which must include plans and programs for addressing the O&M of the system and assessing its condition and capacity. The City prepared the Master Plan (RMC 2011) to meet specific SSMP requirements, as well as to develop a long-term plan for rehabilitation, replacement, and capacity improvements to its system.

Because of SSOs that have occurred in the system, the RWQCB issued a CDO to the City in May 2011 (RWQCB 2011), and the City entered into a Consent Decree with Our Children's Earth Foundation in June 2011, requiring it to implement a number of measures targeted at reducing SSOs. The CDO and Consent Decree have similar requirements, including:

- developing and implementing an SSO reduction plan,
- implementing a CMMS,
- implementing programs addressing system-wide cleaning, root control, illicit discharge elimination, and private sewer lateral inspection and repair,
- performing a condition assessment of the collection system,
- preparing a SECAP,
- training staff in implementing the measures, and
- developing an initial and long-term CIP and financial plan.

The Master Plan specifically addresses the condition assessment of the system (based on inspection data collected), the SECAP, and development of a long-term CIP.

The City evaluated many options to meet the requirements presented in the CDO and Consent Decree. The Master Plan included evaluation of a capacity enhancement only project, the installation of an EQ basin, and capacity improvements with sewer system rehabilitation. Based on this comparison, the best alternative was determined to be the implementation of an EQ basin. This alternative was determined to provide the best assurance of meeting regulatory and legal requirements to eliminate capacity-related SSOs in the near term, and has the lowest estimated capital cost of the three alternatives.

Based on preliminary analyses performed during previous engineering studies, four potential sites for the EQ basin were identified for detailed feasibility analyses. Variations in the siting of the EQ basin on a given site or in the routing of associated pipelines resulted in seven potential alternatives as described in the Wet Weather EQ basin Site Feasibility Evaluation (RMC 2015a).

The Sites identified in the Feasibility Evaluation and Addendum (RMC 2015b) included the following, as shown on **Figure 1:**

- Site 1A: The west end of the park-and-ride parking lot at or along Linda Mar Boulevard.
- Site 2A: Skatepark parking lot with associated pipelines parallel to SR-1. Alternatives Site 2A and Site 2B have the same proposed EQ basin location and footprint but differ in the orientation for the effluent pipeline.
- Site 2B: Skatepark parking lot with associated pipelines that avoid SR-1.
- Site 2C: Skatepark parking lot with associated pipelines that avoid SR-1 (located closer to the Community Center and approximately 80 to 150 feet from the parcel boundary for residences to the southwest).
- Site 3A: The Crespi Drive parking lot with associated pipelines parallel to SR-1.
- Site 3B: The Crespi Drive parking lot with associated pipelines that avoid SR-1.
- Site 4: The Linda Mar Pump Station parking lot.

Each site presented challenges. Site 2C was selected by the City as the preferred site for placement of the EQ basin as it was property the City already owned, had a lower cost for construction, and presented the least public impact based on providing the greatest distance from private residences within the Site 2 area.

Project Objectives

The objective of the Project is to meet the requirements of the CDO and Consent Decree. Specifically, the Project was designed to meet the following condition of the CDO: "By January 1, 2019, the Discharger shall have no insufficient capacity-caused SSOs."

Project Location

The EQ basin would be located within the parking lot for the Skatepark and adjacent to the Community Center (located at 540 Crespi Drive) on the east side of SR-1. This location is identified as Site 2C as presented in the Feasibility Evaluation Addendum. The Site 2C selection was approved by the City Council on September 28, 2015. The Site 2C property is owned by the City, zoned for Controlled Manufacturing, and is identified as Public Facilities in the *City of Pacifica General Plan* ("the General Plan"; City of Pacifica 1980a).

The proposed EQ basin construction site is bounded by open space areas to the east and west, residential parcels approximately 80 feet to the southwest, and the Skatepark and Community Center complexes to the west and north, respectively. There is an open, vegetated drainage swale between the southeastern end of the parking lot and the nearby residences.

The proposed two diversion structures and conveyance pipelines to and from the EQ basin would be constructed in City-owned rights-of-way or public utility easements.

Figure 2 shows the Project location.

Existing Conditions

The proposed EQ basin would be located within the existing Skatepark parking lot. The parking lot is asphaltic concrete paved with concrete curbing defining landscape zones in the parking lot. The parking lot is lit and has a formal storm drainage system.

The proposed sanitary sewer diversion structures and the underground influent and effluent pipelines to and from the EQ basin would be constructed within either the asphaltic concrete-paved City-owned rights-of-way or an existing 200-linear-foot-long by two 5-foot-wide utility easements (total width of 10 feet) located between the EQ basin site and the intersection of Anza Drive and Balboa Way ("the utility easement"). The rights-of-way along Anza Drive, Balboa Way, Arguello Boulevard, and De Solo Drive include existing utilities. The utility easement does not currently include existing utilities. The influent pipeline would traverse a landscaped area to the south of the proposed EQ basin location and pass underneath an existing 24-inch-diameter underground culvert within an existing drainage easement.

Figure 3 shows the existing conditions of the proposed EQ basin location. **Figure 4** shows the existing condition of the diversion structure and pipeline locations.

Community Engagement

The City has conducted several public meetings in order to involve the community in the EQ basin site evaluation and selection process. The following provides a summary of the public meetings conducted, and notices transmitted, to date:

- Presentation of the EQ Basin project and potential site locations at the City Council Chambers (August 14, 2013). Notices for the meeting were distributed on July 29, 2013, to the residences within a 300-foot radius of each of the four potential EQ basin sites. The purposes of the meeting were to: (1) provide an overview of the Project, (2) discuss the possible locations of the EQ basin, and (3) obtain public input on the Project and the possible locations. Approximately 20 community members attended the meeting.

- Presentation of the Draft Feasibility Study findings to the City Council (March 23, 2015). Notices for the meeting were distributed on March 18, 2015, to the residences within a 300-foot radius of each of the four potential EQ basin sites. The meeting was also posted on the City's website under the City Council and Wastewater categories at least seven days prior to the meeting. The purpose of the meeting was to present the findings of the Feasibility Study to the City Council, and to allow the community an opportunity to provide comments.

- Presentation of the Final Feasibility Study findings to the City Council (September 28, 2015). The meeting was posted on the City's website under the City Council and Wastewater categories at least seven days prior to the meeting. The purposes of the meeting were to present staff's final preferred site alternative for the EQ Basin Project and for the City Council to approve and direct staff to move forward with the necessary processes for a successful completion of the Project. The meeting also provided the community with an opportunity to provide comments.

Tribal Consultation

In accordance with Assembly Bill 52 (AB 52), Native American Tribes may request that Lead Agencies provide notification of projects. In the event that a Tribe has submitted a request for notification, the Lead Agency shall provide the Tribe with the opportunity to consult on projects early in the CEQA process. The City has not received any active requests for notification from any Tribes; therefore, tribal consultation was not conducted.

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Source: NAIP 6/13/2014

Figure 1
Feasibility Study EQ Basin Location Alternatives

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Source: NAIP 6/13/2014

Figure 2
Project Location

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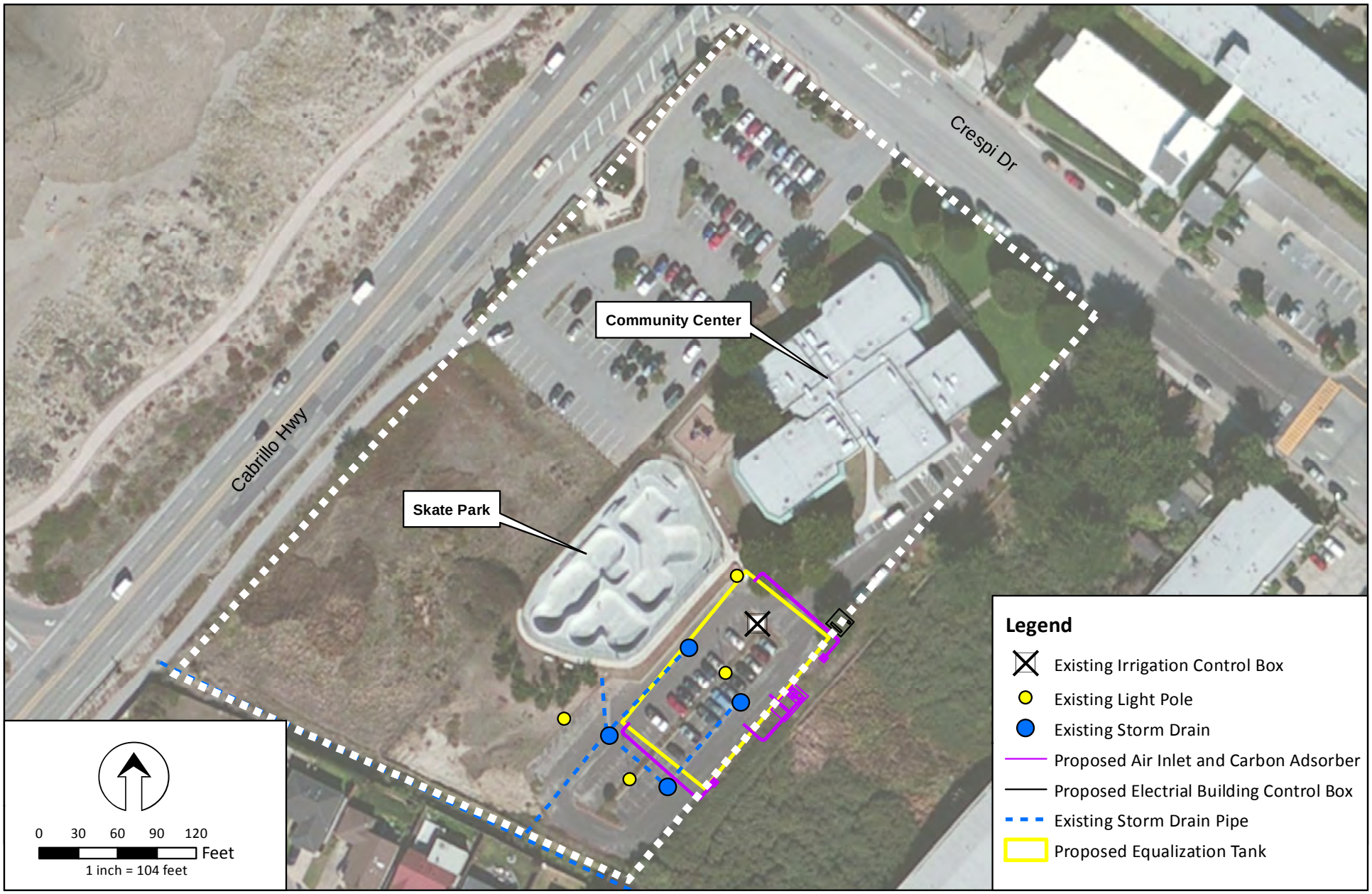

Source: NAIP 6/13/2014

Figure 3
Existing Conditions of the Equalization Location

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Source: NAIP 6/13/2014

Figure 4
Proposed Locations of the Diversion Structure, Jacking Pit, Receiving Pit, Influent Pipeline, and Effluent Pipeline

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Project

The Project would include the installation of a 2.1-million-gallon capacity EQ basin, two diversion structures to passively divert excess flows from the existing Linda Mar and Arguello sanitary sewer lines and transport the flow via a conveyance pipeline to the EQ basin during storm events, an effluent conveyance pipeline routing flows to the existing Crespi Drive sanitary sewer line and the Linda Mar Pump Station, a 10-foot-tall MCC building equipped with a 4-foot-high metal antenna that would allow radio communication with the City's Calera Waste Water Treatment Plant, a ventilation and odor-control system, and a potable-water-supplied cleaning system within the EQ basin. The EQ basin would be located at Site 2C as identified in the 2015 Feasibility Evaluation Addendum. During construction of the EQ Basin, the Skatepark parking lot would be closed to the public, and normal parking in this area would be diverted to the Crespi Parking Lot west of the Community Center. Following completion of EQ basin construction, the Skatepark parking lot would be reconstructed above the EQ basin structure to provide, at minimum, the same number of parking spots as in the existing parking lot.

Project Elements

Wet Weather Flow EQ Basin

The proposed EQ basin is a 45-foot-deep rectangular covered concrete basin with preliminary horizontal internal dimensions of 70 feet by 145 feet, constructed to temporarily store up to 2.1 million gallons of wastewater to mitigate storm-related SSOs from the City's wastewater collection system. The EQ basin would contain two internal compartments separated by an intermediate wall. **Figure 5.A** shows an isometric view of the EQ basin design, **Figure 5.B** shows the proposed EQ basin layout, and **Figure 5.C** shows the view of existing parking lot and a rendering of the parking lot after installation of the EQ basin.

The excavation for the EQ basin would first require the construction of an impermeable slurry cement wall around the perimeter of where the basin would be constructed to minimize groundwater from seeping into the excavation area and to facilitate construction of the structural, formed, and cast-in-place concrete walls of the EQ basin. Based on numerous measurements of depth to groundwater collected from a piezometer that was installed in the Skatepark parking lot, the groundwater elevation in the vicinity of the proposed EQ basin site is at approximately 2 feet below the site grade.

Following completion of the EQ basin construction, the prefabricated concrete roof of the EQ basin would also be used to support vehicle parking associated with the Skatepark and Community Center. The EQ basin roof design would be rated for H-20 loading (i.e., truck axle loading of 32,000 pounds or wheel loading of 16,000 pounds), which would accommodate the delivery trucks to the Community Center which routinely drive through the Skatepark parking lot.

The base of the EQ basin would consist of a 5-foot-thick reinforced concrete mat slab above a 2-foot-thick unreinforced concrete plug. For resisting the buoyancy force while the EQ basin is empty, the mat slab would be anchored by micro piles that would be placed at approximately 12 feet on center in each direction.

Conveyance System

During high-flow storm events, flow from the existing sanitary sewer conveyance system leading to the Linda Mar Pump Station would be diverted to an influent line that leads to the EQ basin through two gravity flow, or passive, diversion structures: one flow diversion each on the Linda Mar Boulevard and Arguello Boulevard sanitary sewer lines. The flow diversion structure on the Linda Mar line would be constructed at the intersection of De Solo Drive and Linda Mar Boulevard. The flow diversion structure on the Arguello line would be constructed at the intersection of Arguello Boulevard and Balboa Way. The influent gravity pipeline used to convey flows from the flow diversion structures on the Linda Mar and Arguello lines to the EQ basin would be 24-inch-diameter high density polyethylene (HDPE) dimension ratio (DR) 17 pipe laid at a minimum slope of 0.004 resulting in an estimated flow capacity of 6.5 million gallons per day. All pipeline joints would be fused except where connecting to dissimilar materials, where a transition coupling would be used. The use of HDPE piping is recommended because of the corrosive nature of the soils that were identified at one location along the pipeline alignments as described in the Geotechnical Report prepared by Construction Testing Services (CTS 2016b) and to help reduce I/I into the EQ basin facilities. In addition, the fused joints would reduce the potential of future stormwater infiltration into the new pipelines and ultimately reduce the amount of flow to the EQ basin.

It is anticipated that a majority of the influent conveyance pipeline would be constructed by open trench construction methods at depths ranging from approximately 8 to 16 feet below existing ground surface. The portions of the influent gravity pipelines that are to be constructed within the utility easement in the nearby residential area would be installed utilizing horizontal trenchless methods (“jacking” or “jack and bore method”). It is anticipated that the trenchless methods would be used to install a 36-inch-diameter steel casing pipe within the easement. The section of the influent pipeline that would be installed within the casing would be fused HDPE placed on casing spacers. The annular space between the conveyance pipe and influent piping would be filled with cement slurry or sand.

The “jacking pit” would be an open excavation that is approximately 20 feet wide by 40 feet long by 20 feet deep that houses the boring machinery and hydraulic jack equipment used during the jack and bore process. The “receiving pit” would be an open excavation that is approximately 10 feet wide by 10 feet long by 20 feet deep that allows for access to the opposite end of the piping so that it may be connected to the portions of the new influent pipeline that would be installed using open trench methods. The jacking pit would be constructed in the southwestern

corner of the Skatepark parking lot and the receiving pit would be constructed within the intersection of Anza Drive and Balboa Way, as shown on **Figure 2**.

During and following storm events when flows in the existing Crespi sanitary sewer line are not at capacity, wastewater temporarily stored in the EQ basin would be pumped from the basin to the effluent piping via four, 10-hp submersible pumps (two pumps in each internal basin chamber). The force main effluent piping from the EQ basin would be a combination of ductile iron piping and fittings and fused HDPE, and would connect to the existing 12-inch-diameter sanitary sewer line along Crespi Drive. Flow in the Crespi Drive line drains by gravity to the Linda Mar Pump Station.

Ventilation and Odor Control

The proposed Ventilation and Odor Control system includes:

- A minimum of two vents with automatic louvers would be placed in each basin chamber to allow for the introduction and release of indoor and outdoor air, respectively.
- Odor control would be achieved using a granular activated carbon (GAC) adsorber system. Air would be withdrawn from the tank in two locations via an exhaust fan (approximately 5-hp motor) and passed through the GAC adsorber. Ambient air would enter the tank through two inlets to replace the foul air from within the tank. The odor control equipment (fan and adsorber) would be located on the east side of the EQ basin, whereas the ambient air inlets are located on the west side. The GAC filter would be constructed on the northeast side of the basin.
- Ventilation of the EQ basin would be required to allow for the necessary exchange of fresh air into the basin and for personnel to safely enter the basin. All entries into the basin would be performed under the authority of a permit-required confined space entry permit issued by the City. Before personnel enter, the EQ basin would be vented to remove dangerous and explosive gases. The odor control system would be manually started to provide positive ventilation of air in and out of the EQ basin. Additional portable ventilation units may be required.
- Access hatches would be installed at various locations within the EQ basin roof and within the parking lot area footprint to allow for insertion or removal of portable ventilation units in the event that air monitoring indicates that additional venting is needed to allow for safe entrance to the EQ basin.

Electrical Improvements

The following items would be incorporated into final design for electrical service and controls:

- A prefabricated building with concrete slab, as shown on **Figure 5.B**. The concrete slab would be set above the Federal Emergency Management Agency (FEMA) 100-year flood elevation of 14.00 feet above mean sea level (North American Vertical Datum of 1988 [NAVD88]).
- The MCC would be provided within the prefabricated building. The MCC would have four motor starters, one for each of the 10 hp pumps, a panel board, a telemetry panel, and a transformer to step down voltages to the ancillary electrical facilities.
- Variable Frequency Drives are not planned for the pumps. The pumps would be constant-speed pumps.
- The MCC would be designed to allow for a portable generator to be plugged in, in the event of an emergency.
- An electrical service application would be submitted to Pacific Gas and Electric and they would determine the service connection point. 480-volt service would be requested to operate the pumps. Typically, the smallest 480-volt service is 200 amps, which is adequate for the projected demands for the EQ basin equipment.
- The ventilation system would be controlled from the prefabricated MCC building.

Water System Improvements

A new water service line would be extended from the existing water main along Crespi Drive to the EQ basin for flushing and cleaning of the EQ basin. Per the North Coast County Water District (NCCWD), the available water pressure in the existing water main is 205 psi. NCCWD has confirmed that the available water pressure would be adequate for the demands of the Project (NCCWD 2016). A meter and reduced pressure backflow assembly would be added to the new water service line near the current Skatepark parking lot access driveway near Crespi Drive in order to reduce pressure to the new water service line to less than 130 psi.

Prior to flushing and cleaning of the EQ basin, the City's Wastewater Treatment Plant Superintendent, or deputy thereof, would contact both the North County Fire Department and the North Coast County Water District, to alert them of anticipated water usage.

Parking Lot

The Skatepark's parking lot would be restored during the final phase of construction. The existing parking lot includes 46 standard parking spaces and three Americans with Disability Act (ADA) parking spaces in a 22,500-square-foot footprint. The restored parking lot would have a total of 51 parking stalls (33 standard parking stalls [19 feet long by 9 feet wide], 15 compact parking stalls [16 feet long by 7.5 feet wide], and three handicap-accessible parking stalls

meeting ADA standards) within the existing 22,500-square-foot parking lot footprint. The proposed layout for the restored parking lot is shown on **Figure 6**.

Adequate drive lanes would be provided to allow one-way traffic circulation. The restored parking lot area above the EQ basin would utilize the tank roof as the parking surface. The parking lot grades would be established to generate sheet flow runoff along the parking lot surface and divert the flow to valley gutters along the perimeter of the EQ basin and to inlets to two bioretention basins that would be constructed at the southern end of the new parking lot. Stormwater collected in the parking lot would be passively treated using bioretention prior to discharge, in conformance with stormwater control and treatment requirements. The parking lot would be illuminated at night to the same levels as the existing parking lot. Three existing storm drain inlets would be removed.

The bioretention basins are designed to meet the requirements of the low-impact development (LID) requirements identified in Section C.3 of the Municipal Regional Permit (MRP) for the Bay Area.[1] In order to avoid potentially significant long-term stormwater quality impacts and comply with the requirements of the MRP, the Project design would implement the recommendations of the C.3 Stormwater Technical Guidance and would demonstrate compliance with the MRP Section C.3 requirements and associated best management practice (BMP) design and sizing criteria by providing approved hydraulic sizing calculations for all proposed post-construction BMPs (e.g., bioretention basins).

Project Operations

Water collection and flow into the EQ basin would be passive, meaning wastewater would flow into the basin by gravity. However, mechanical equipment would be needed within the basin for ventilation and to empty the basin.

It is anticipated that the basin would be used five or fewer times per year, primarily in the winter season when sanitary sewer flows are higher due to I/I. The frequency of usage would be based on annual weather patterns and is therefore highly variable from year to year. As the City's sanitary sewer collection system is improved in the future, it is anticipated that the use of the EQ basin would be reduced as the result of lower I/I.

The volume of water that would be diverted to the EQ basin and the time to fill it would vary as a function of each storm event that would trigger the need for wastewater storage in the basin. The EQ basin pump system is designed to drain up to 2.1 million gallons of water during a maximum 2-day period. The wastewater that would be temporarily stored in the EQ basin would be pumped to the sanitary sewer conveyance system along Crespi Drive when storms subside or

[1] RWQCB Order No. R2-2009-0074, NPDES Permit No. CAS612008.

the flows to the Linda Mar Pump Station decrease. The four pumps needed to drain the EQ basin would be placed at the low point inside the EQ basin (approximately 45 feet below grade).

The ventilation fans, anticipated to be no more than 5 hp total, would only operate when the EQ basin is storing wastewater and would be inactive when the EQ basin is empty, with the exception of operations prior to entry required by City staff for O&M activities, which would take place during daylight hours.

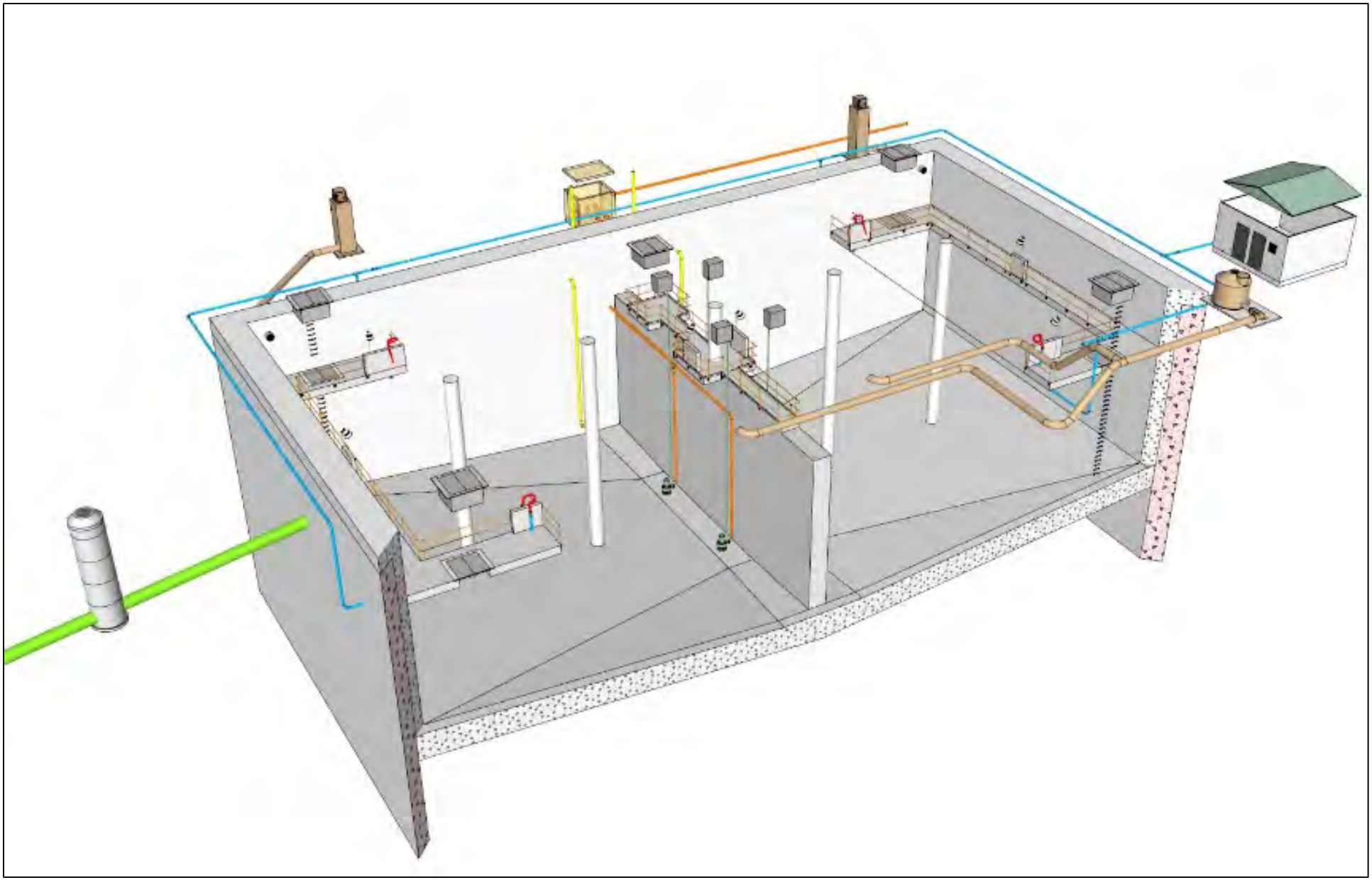

Figure 5.A
Proposed Equalization Basin Design

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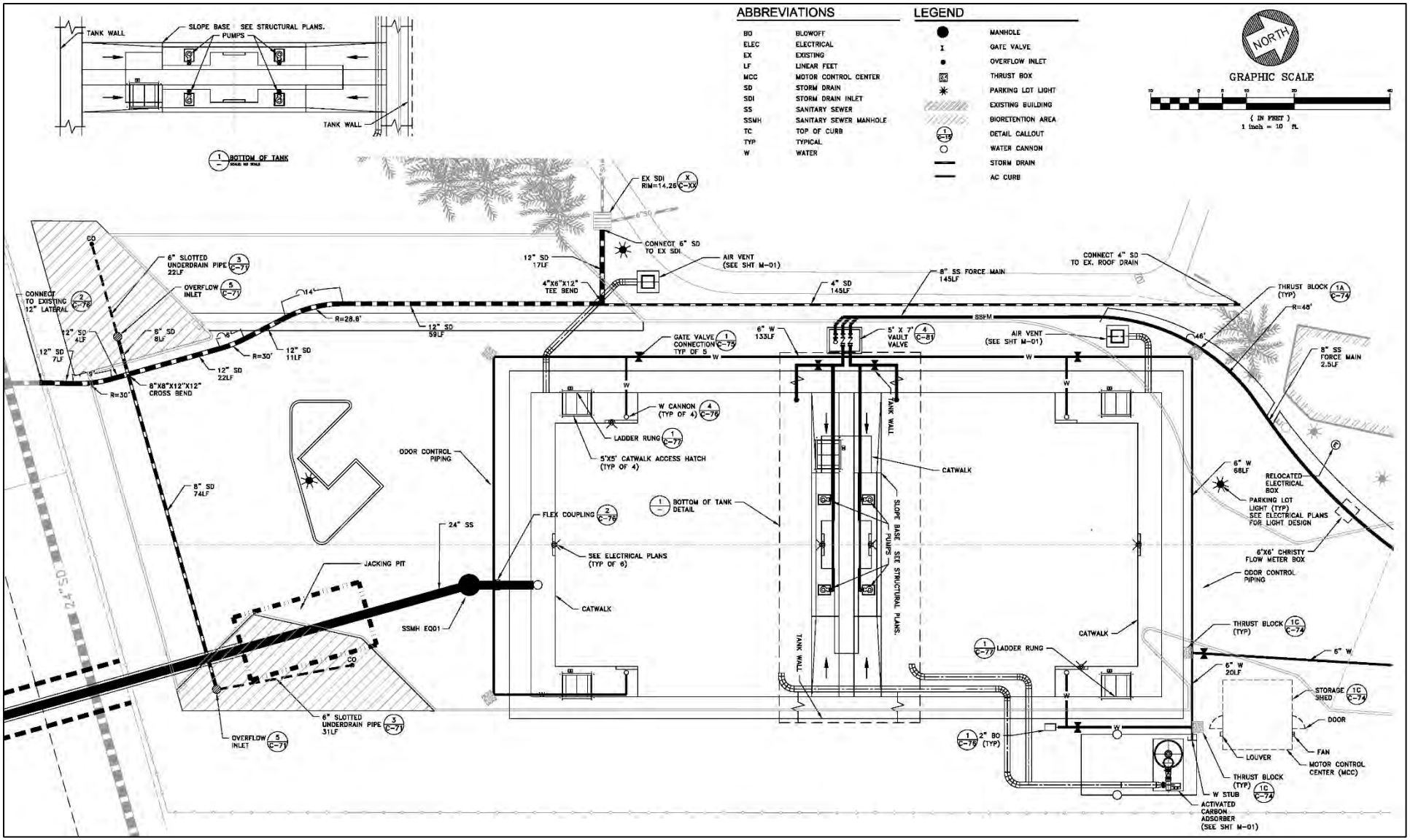

Figure 5.B
Proposed Equalization Basin Layout

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Figure 5.C
View of Existing Parking Lot and Proposed Parking Lot

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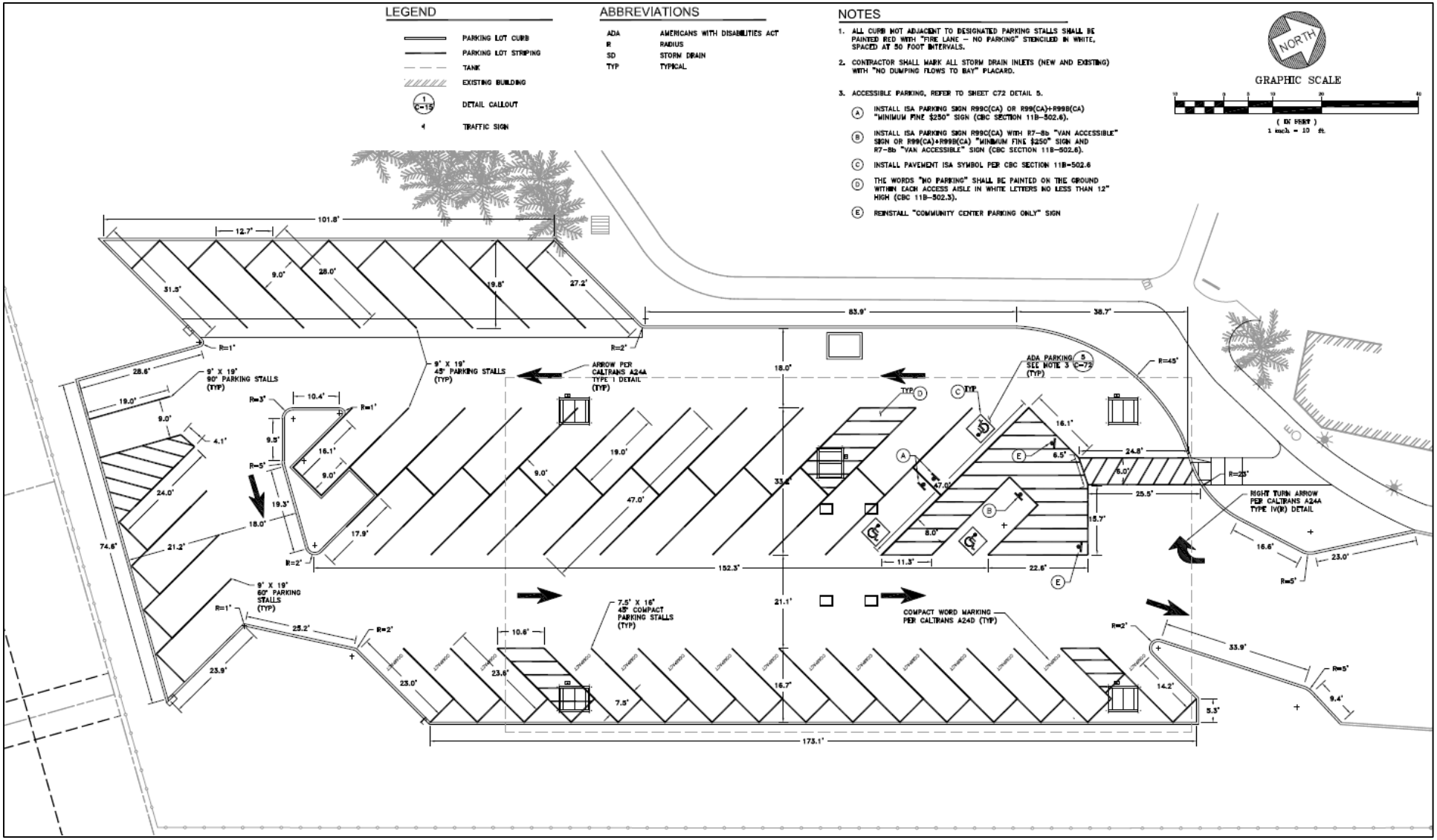

Figure 6
Proposed Parking Lot Layout Following Installation of Equalization Basin

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All pumps and ventilation systems would be electricity driven. There is no planned dedicated generator for the equipment; however, a receptacle would be provided in the MCC to plug in a portable generator in the event of an emergency, i.e., in the instance of a heavy storm requiring the use of the EQ basin and power outage impacting the EQ basin MCC and equipment.

The inside surfaces of the EQ basin would need to be washed down after every use. During wash-down, the water cannons inside the EQ basin would be used one at a time, with an estimated demand of 75 gallons per minute at a discharge pressure of 100 psi. Each water cannon would be operated individually for a period between 5 and 15 minutes, with all four water cannons being operated for a cumulative period of between 20 and 60 minutes per cleaning event. Therefore, the range of water demand is estimated to be between 1,500 gallons and 4,500 gallons per cleaning event. Regular O&M of the EQ basin and associated equipment would be performed, resulting in City personnel being present at the site an estimated 30 days per year. During O&M and EQ basin cleaning activities, several parking spaces would be temporarily blocked off in order to safely use the access hatches.

The new parking lot would be designed to match current lighting levels in the existing parking lot.

Project Construction Activities and Schedule

Project construction is anticipated to occur during a 17-month period starting in May 2017 and ending in late September 2018. Construction hours would be from 7:00 a.m. to 4:00 p.m. Monday through Friday. Weekend and night work is not anticipated per requirements of the Pacifica Municipal Code.

Construction of the Project would include the following phases:

- Phase 1A – EQ basin construction. Construction of Phase 1 is tentatively scheduled to begin in May 2017, with completion anticipated in July 2018.
- Phase 1B – Conveyance pipeline installation. Construction of Phase 1B is tentatively scheduled to begin in June 2017, with completion anticipated in December 2017.
- Phase 2 – Site electrical. Construction of Phase 2 is tentatively scheduled to begin in July 2018, with completion anticipated in September 2018.
- Phase 3 – Ventilation and odor control. Construction of Phase 3 is tentatively scheduled to begin in July 2018, with completion anticipated in August 2018.
- Phase 4 – Parking Lot. Construction of Phase 4 is tentatively scheduled to begin in August 2018, with completion anticipated in September 2018.

During construction, the undeveloped area to the northeast of the EQ basin location near the driveway entrance to the Skatepark parking lot along Crespi Drive would be used for staging, as shown on **Figure 7**.

Source: NAIP 6/13/2014

Figure 7
Proposed Construction Staging Area

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Table 1 presents the construction activities for all construction phases of the Project.

Table 2 shows the anticipated construction schedule for the Project.

Table 1. Proposed Construction Activities and Durations

Phase	Activity	Duration	Construction Equipment	Construction Workers (peak daily number)
1A	Abatement/Demolition	2 weeks	Excavator, front-end loader, bobcat, end dump trucks, saw cutter, backhoe with jackhammer attachment	5-10 workers
1A	Slurry Wall Construction (including excavation and off-hauling soil/spoils)	16 weeks	Excavator, crane with clam-shell bucket, semi-trailer end-dump trucks, concrete pump truck, delivery trucks, batch plant, generator, & hand tools	4-10 workers
1A	Excavate and off hauling soil/spoils for EQ Basin Area	10 weeks	Two excavators, backhoe, dewatering pumps, semi-trailer end dump trucks for off haul, de-watering pumps, & generators	4-10 workers
1A	Concrete Plug and Micro Piles	4 weeks	Concrete pump truck, crane, micro pile drill rig, generators, delivery trucks, & hand tools	4-10 workers
1A	Internal Base and Wall Construction	16 weeks	Concrete pump truck, crane, front-end loader, bobcat, delivery trucks, generators, & hand tools	4-10 workers
1A	Precast EQ Basin Roof Placement	4 weeks	Two cranes, front-end loader, delivery trucks, generators, & hand tools	5-10 workers
1B	Vault Construction and Pump, Piping, and Valve Placement	3 weeks	Mechanical, Electrical, and Plumbing (MEP) crew trucks, backhoe, dump trucks for off hauling soils, delivery trucks, generators, & hand tools	5-10 workers
1B	EQ Basin Effluent Piping	3 weeks	MEP crew trucks, backhoe, compactor, front end loader, delivery trucks, dump trucks for off-hauling spoils, & hand tools	5-10 workers

Phase	Activity	Duration	Construction Equipment	Construction Workers (peak daily number)
1B	Influent Conveyance Piping, Diversion Structures, and Manhole Structures	14 weeks	MEP crew trucks, excavator, backhoe, compactor, front-end loader, delivery trucks, concrete trucks, dump trucks for off-hauling spoils, generators, & hand tools	5-10 workers
1B	Jack and Bore Casing	3 weeks	MEP crew trucks, excavator, backhoe, compactor, front-end loader, jack and bore equipment, delivery trucks, sump pumps for dewatering, dump trucks for off-hauling spoils, generators, & hand tools	5-10 workers
1B	Water Service Line	2 weeks	MEP crew trucks, backhoe, compactor, front-end loader, delivery trucks, dump trucks for off-hauling spoils, generators, & hand tools	5-10 workers
2	Electrical Conduit Placement	4 weeks	MEP crew trucks, backhoe, compactor, delivery trucks, generator, dump trucks for off-hauling spoils, & hand tools	3-5 workers
2	Pre-fabricated Building and Electrical Control Panel / Motor Control Center	6 weeks	Crane, MEP crew trucks, backhoe, compactor, concrete trucks, delivery trucks, generator, dump trucks for off-hauling spoils, & hand tools	2-8 workers
3	Odor Control System Construction	4 weeks	Delivery trucks, backhoe, front-end loader, generators, & hand tools	3-5 workers
4	Finished Grading	3 weeks	Grader, front-end loader, drum roller compacter	5-8 workers
4	Parking Lot Lighting	2 weeks	Crane, delivery trucks, generators, & hand tools	3-5 workers
4	Concrete Curbs/AC Pavement	4 weeks	Paver, delivery trucks, front-end loader, backhoe, generators, & hand tools,	5-8 workers
4	Landscaping	3 weeks	Delivery trucks, backhoe, bobcat, & hand tools	5-8 workers

Source: Freyer & Laureta, Inc.

Table 2. Proposed Construction Schedule

Construction Phase	Calendar Year 2017								Calendar Year 2018									
	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October
Phase 1A																		
Phase 1B																		
Phase 2																		
Phase 3																		
Phase 4																		

Source: Freyer & Laureta, Inc.

Construction Equipment

Due to the close proximity of residences to the Project, as an Applicant Proposed Measure (**APM-1**), the City would require the selected construction contractor to use portable and off-road equipment that would meet, at minimum, the following criteria in order to reduce the construction emissions from the Project:

1. All mobile diesel-powered off-road mobile and portable equipment larger than 25 hp and operating on the site for more than 20 hours shall meet, at a minimum, one of the following:

    a. Equipped with engines meeting U.S. EPA particulate matter emissions standards for Tier 2 engines or equivalent;

    b. All diesel-powered portable equipment (i.e., generators, concrete saws, and pumps) operating on the site for more than 20 hours shall be equipped with CARB-certified Level 3 Diesel Particulate Filters or meet U.S. EPA particulate matter emissions standards for Tier 4 engines or equivalent;

    c. Alternatively-fueled (i.e., non-diesel) equipment shall be used; or

    d. Other measures may be the use of added exhaust devices, or a combination of measures, provided that these measures are approved by the City and demonstrated to reduce community risk impacts to less than significant.

2. Line power shall be utilized as soon as feasible, limiting the use of all diesel-fueled generators including any diesel-powered welders used for construction up to 20 days for each piece of equipment.

Construction Traffic

Construction traffic, including end dump trucks off-hauling soils and debris, and trucks delivering building materials, would use SR-1 and Crespi Drive to access the Project site. A Work Plan and Traffic Control Plan would be developed by the selected contractor including requirements for noise, dust, and traffic management. Traffic control would be provided by the contractor and verified by the City's Construction Manager.

The estimated construction vehicle trips are summarized by phase in **Table 3**. During construction, there would be an estimated 2,220 construction truck trips during Phase 1A, primarily associated with the off-haul of approximately 20,000 cubic yards of spoils from the EQ basin excavation. Soil would be sampled and profiled for offsite disposal prior to the start of excavation, and is anticipated to be disposed of as Class III material to the Ox Mountain Landfill in Half Moon Bay, approximately 14 miles south of the EQ basin site. In addition to obtaining an approved profile from the landfill, the contractor would obtain a letter from the landfill confirming that the landfill can meet the needs of the Project prior to construction.

The remaining phases of construction would have fewer vehicle trips: an estimated 370 construction truck trips during Phase 1B, an estimated 12 construction truck trips during Phase 2, an estimated 50 construction truck trips during Phase 3, and an estimated 142 construction truck trips during Phase 4. **Table 3** presents the estimated construction vehicle trips.

Construction trucks would use SR-1 then turn onto Crespi Drive and enter the Project site. Trucks can queue offsite in the eastern border of the Crespi Parking Lot, in the parking spaces along eastbound Crespi Drive, or in the parking spaces along southbound Roberts Road to minimize backups onto residential streets. A maximum of 10 trucks would be queued up at any given time.

It may be necessary to temporarily reduce two-way travel lanes to one lane or temporarily close parking spots on Crespi Drive or City streets along the pipeline alignment. In accordance with Chapter 2, Title 7 of the Pacifica Municipal Code, the City would apply for and obtain an encroachment permit from the City of Pacifica Engineering/Public Works Department for work performed within the right-of-way. Typical pipeline construction methods would include closure of up to 100-foot segments of roadway for trenching. During segment closure, two-way travel lanes would be reduced to one lane, and traffic control personnel would be present. At the end of each day, the open trench section would either be backfilled or covered with traffic-rated trench plates and secured with cutback. Driveway access for residences along the active segment would be restored at the end of each day. In accordance with the City's Encroachment Permit requirements, advance notice would be provided to the neighbors to inform them about the location, dates, and times when the parking spaces or lanes would be closed.

Table 3. Estimated Construction Vehicle Trips

Construction Activity	Truck Loads	Total Truck Trips	Duration
Phase 1A Basin Construction			
Abatement/Demolition	20 in first week	20	2 weeks
Off-hauling soil/spoils	30-40 per day	1340	8 weeks
Slurry Wall and Base Construction	20 per day	340	16 weeks
Internal Base and Wall Construction	20 per day	420	14 weeks
Precast Top of EQ basin Placement	5 per day	100	4 weeks
Phase 1B Conveyance System			
Pump, Piping, Valve Placement	10 in first week	20	3 weeks
Effluent Pipe	10 in first week	20	3 weeks
Influent Pipe, Diversion Structures, MHs	15-20 per day	220	14 weeks
Jack and Bore Casing	30 per week	90	3 weeks
Water Line	10 in first week	20	2 weeks
Phase 2 Site Electrical			
Conduit Placement	5 per week	10	2 weeks
Motor Control Center	2 in first week	2	4 weeks
Phase 3 Odor Control			
Placement of Vents and Fans	10 in first week	10	2 weeks
GAC Pad and Vessel Construction	40 in 2 weeks	40	4 weeks
Phase 4 Parking Lot			
Fine Grading	10 per day	60	2 weeks
Parking Lot Lighting	Delivery	2	2 weeks
Concrete Curbs/AC Pavement	Max 20/week	60	4 weeks
Landscaping	Spread over 2 weeks	20	2 weeks

Source: Freyer & Laureta, Inc.

Construction Noise and Visual Impact

The selected construction contractor would be required to erect a 16-foot-high temporary noise barrier between the southern perimeter of the work area and the residential areas to the south (**Applicant Proposed Measure APM-2**). Construction equipment is anticipated to operate only during day-time hours (8:00 a.m. – 5:00 p.m. Monday through Friday). No weekend or night-time construction is anticipated.

Dewatering

A temporary dewatering system would be used during the construction of the EQ basin due to near-surface groundwater levels at the site. The EQ basin design includes construction of an impermeable outer concrete slurry wall to reduce the volume of shallow and intermediate groundwater flowing into areas to be excavated and to facilitate construction of the inner formed and cast-in-place concrete wall. A dewatering system consisting of either a series of extraction wells installed inside the slurry cutoff wall or using numerous sump pumps to pump out groundwater would be used during excavation activities. The purpose of the dewatering wells or sump pumps would be to provide an array of extraction points from within the "bathtub" that would be created after the concrete slurry cutoff wall is constructed.

Regardless of the method used to dewater the area within the slurry cutoff wall, extracted groundwater would likely require treatment to reduce the potential for water quality impacts to the receiving body. It is anticipated that extracted groundwater would be discharged to the City's sanitary sewer system. The City is currently evaluating the groundwater quality to determine if it would meet acceptance criteria for the Calera Creek Water Recycling Plant. If the acceptance criteria are met, the City would obtain a Temporary Groundwater Contamination Cleanup Discharge Permit[2] from the Public Works Department and the extracted groundwater would be discharged to the City's sanitary sewer. In the event that the groundwater cannot be accepted by the Calera Creek Water Recycling Plant, a National Pollution Discharge Elimination System (NPDES) permit would be required to discharge the extracted groundwater to the storm drain system. The NPDES permit would include discharge limits for water quality parameters such as turbidity and pH.

Tree Removal

The City has a Heritage Tree ordinance that defines a heritage tree as any tree within the City, with the exception of eucalyptus, which has a trunk with a circumference of 50 inches or greater, and is approximately 16 inches in diameter or more when measured 2 feet above natural grade. The installation of the EQ basin and the MCC building would require the removal of up to four heritage trees, as shown on **Figure 8**. Additionally, the Project includes the use of the area to the east of the intersection of Crespi Drive and the driveway entrance to the Skatepark parking lot for staging and laydown, which would require the removal of four heritage trees as shown on **Figure 8**.

Development projects involving heritage trees which require Planning Commission approval must be accompanied by a tree protection plan. As required by the ordinance, the applicant

[2] Note: This permit type is typically issued for contamination cleanup sites which are extracting and treating contaminated groundwater on a temporary basis. Although the Project groundwater is not anticipated to be contaminated, this discharge permit is the applicable permit issued by the City for construction-related groundwater dewatering discharges to the City's sanitary sewer system for treatment at the Calera Waste Water Treatment Plant.

would submit a Heritage Tree Permit and a Tree Protection Plan along with planning permits and, therefore, would be in compliance. Following completion of the construction of the Project, the removed trees would be replaced at a minimum ratio of 1:1, meaning that a total of at least eight trees would be planted to replace the eight removed trees.

Cultural Resources During Construction

In the event that any prehistoric, historic, or paleontological materials are discovered during ground-disturbing activities, ground work shall cease at the Project and discovered materials and their surroundings shall not be altered or collected.

If human remains are discovered or recognized during construction or ground disturbance activities at the Project, all excavation and disturbance of the location or any nearby area reasonably suspected to overlie adjacent human remains (minimum of 50-foot radius around discovered suspect remains) would cease until the following has occurred in accordance with the requirements of California Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98 and the California Code of Regulations Section 15064.5(e):

1. The San Mateo County Coroner/Sheriff has been informed and has determined that no investigation of the cause of death is required; and

2. If the remains are of Native American origin:

    a. the descendants of the deceased Native Americans have made a recommendation to the party responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in the California Public Resources Code Section 5097.98; or

    b. the Native American Heritage Commission is unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission.

If the agencies determine that avoidance is not feasible, then an alternative plan would be prepared with specific steps and time frame required to resume construction activities. Monitoring, data recovery, determination of significance, and avoidance measures (if applicable) would be completed expeditiously.

Project Approvals

The following agencies have approval authority with respect to the Project:

- City of Pacifica Use Permit
- City of Pacifica Encroachment Permit
- City of Pacifica Building Permit

- City of Pacifica Heritage Tree Permit
- City of Pacifica Temporary Groundwater Contamination Cleanup Discharge Permit (if discharging to sanitary sewer)
- North County Fire Authority for site access and fire hydrants/water pressure
- RWQCB NPDES dewatering permit (if discharging to storm drains)
- SWRCB NPDES Construction General Permit (CGP) for Storm Water Discharges Associated with Construction and Land Disturbance Activities

Source: NAIP 6/13/2014

Figure 8
Proposed Tree Removal

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References

City of Pacifica. 1980a. City of Pacifica General Plan.

Construction Testing Services (CTS). 2016a. Geotechnical Investigation Report, J10998 Pacifica Wet Weather Equalization Basin.

_____. 2016b. Geotechnical Investigation Report, 11266 Pacifica Wet Weather Equalization Basin – Pipeline.

North Coast County Water District (NCCWD). 2016. Letter from Mr. Scott Dalton, Superintendent at NCCWD, to Ms. Maria Aguilar, Assistant Superintendent at City of Pacifica Calera Creek Water Recycling Plant, Subject: "City of Pacifica Future Equalization Basin – Water Usage During Washdown Water Pressure Available at 540 Crespi Drive, Pacifica". September 9.

RMC. 2011. City of Pacifica Collection System Master Plan.

_____. 2015a. Wet Weather Equalization Basin Site Feasibility Evaluation Final Report. August.

_____. 2015b. Technical Memorandum: Site Alternative 2C and Prioritization Addendum to Site Feasibility Evaluation Report. August 25.

San Francisco Bay Regional Water Quality Control Board (RWQCB). 2011. Cease and Desist Order No. R2-2011-0031 Requiring the City of Pacifica Calera Creek Water Recycling Plant and Collection System in San Mateo County to Cease and Desist Discharging Waste in Violation of Requirements in Regional Water Board Order No. R2-2006-0067 (NPDES Permit No. CA 0038776) and State Water Board Order No. 2006-0003-Dwq.

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Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by the Project, involving at least one impact that is a potentially significant impact unless mitigated as indicated by the checklist on the following pages.

- ☒ Aesthetics
- ☒ Biological Resources
- ☐ Greenhouse Gas Emissions
- ☐ Land Use and Planning
- ☐ Population and Housing
- ☒ Transportation and Traffic
- ☒ Mandatory Findings of Significance
- ☐ Agricultural and Forestry
- ☒ Cultural Resources
- ☒ Hazards and Hazardous Materials
- ☐ Mineral Resources
- ☐ Public Services
- ☒ Tribal Cultural Resources
- ☒ Air Quality Resources
- ☐ Geology and Soils
- ☒ Hydrology and Water Quality
- ☒ Noise
- ☐ Recreation
- ☐ Utilities and Service Systems

Determination

On the basis of this initial evaluation:

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

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

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

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

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

T. Wehrmeister 12/5/16

NAME: Tina Wehrmeister Date
TITLE: Planning Director

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Evaluation of Environmental Impacts

CEQA requires a brief explanation to answer all questions listed in the Environmental Checklist. All answers must consider the entire project action including onsite, offsite, indirect, and cumulative project impacts and, as applicable, temporary project construction impacts.

Once the Lead Agency (City of Pacifica) has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation incorporated, or less than significant. If there is one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

Environmental Checklist

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

Existing Conditions

The proposed EQ basin location currently consists of an approximately 22,500-square-foot asphalt-covered parking lot with 46 standard parking stalls, three ADA-accessible parking stalls, and a narrow landscaped median running the length of the parking lot. The proposed influent and effluent conveyance pipeline alignments would be located within current rights-of-way

along Anza Drive, Balboa Way, Arguello Boulevard, and De Solo Drive. The proposed influent pipeline alignment would also be located within an existing unused utility easement between two homes located at 1019 and 1023 Anza Drive. The proposed EQ basin area is bound to the northwest by a sidewalk with the Skatepark beyond; by landscaping and the Pacifica Community Center to the northeast; by an asphalt-covered driveway from Crespi Drive to the northeast; by a narrow landscaped area, fence, and tree-covered area to the east and southeast with a commercial shopping center (Crespi Center) beyond; by a landscaped area including an existing culvert within a drainage easement, fence, and single-family residences along Anza Drive to the southwest; and by an unimproved area with intermittent trees and shrubs to the west. Cabrillo Highway (State Route 1, or SR-1) is located approximately 500 feet to the west and northwest, with the Pacifica State Beach and Pacific Ocean beyond. A photo log of existing site conditions is presented in **Appendix A1**.

The areas immediately surrounding the planned EQ basin site include heritage trees as defined in the City ordinance as any tree within the City, with the exception of eucalyptus, which has a trunk with a circumference of 50 inches or greater, and is approximately 16 inches in diameter or more when measured 2 feet above natural grade.

Impact Discussion

A project would be considered to have a significant aesthetic impact if it would result in substantial changes to visual resources considered to have aesthetic value. Such changes include visible alteration of land, significant structures, visible clutter or disorder, or substantial disruption of the surrounding visual context, especially if such changes are more than temporary in duration. Construction of the Project would result in the temporary presence of construction activities, equipment, and materials; ground disturbance; and stock piles. Although aesthetics would be impacted during construction activities, these activities would be temporary, with no long-term adverse effects on scenic vistas or the surrounding area. Operation and maintenance (O&M) of the Project would not affect scenic vistas or scenic resources and would be aesthetically restored to existing conditions after construction. A brief discussion of each environmental issue is presented below.

a) Would the project have a substantial adverse effect on a scenic vista?

Less than Significant Impact. The City's General Plan identifies SR-1 as a scenic corridor (City of Pacifica 1980a).[3] SR-1 provides motorists with long-duration and long-distance views of the Pacific Ocean and surrounding beaches, cliffs, and ridgelines, which are generally located on the western side of SR-1. The Project site is located on the eastern side of SR-1 in an area that is

[3] No officially designated state scenic highways are located in the vicinity of the proposed Project. However, the segment of SR-1 that travels through the City of Pacifica is designated as an eligible state scenic highway (Caltrans 2016).

relatively flat, and the elevation is approximately at sea level. No other scenic vistas are located within the Project vicinity or east of the EQ basin site.

Construction activities would temporarily impact the aesthetics of the Skatepark, the Skatepark parking lot, the Community Center, and the areas surrounding the pipeline alignment. The construction period is anticipated to occur over a 17-month period, and therefore, impacts to aesthetics during construction would have a limited duration. Construction of the EQ basin could temporarily affect views along the SR-1 scenic corridor, as these activities would include tall equipment which could be seen from the highway. The EQ basin site is separated from SR-1 by a walking path, a vegetated area with shrubs that would block the majority of views of the EQ basin site, the Crespi parking lot, the Community Center, and the Skatepark. While it would be possible to see the construction equipment from SR-1, the Project would occur in an area that is not highly visible to motorists traveling on SR-1 due to the distance and obstacles between the site and the highway.

Operation of the EQ basin would result in several new aboveground structures, including the MCC building, odor control blower, and the GAC vessel. The MCC building would consist of a prefabricated building with a 16-foot by 16-foot footprint with a maximum building height of 10 feet located on a concrete slab adjacent to the northeastern corner of the EQ basin. The odor control system would consist of an exhaust fan pulling air out of the basin and into a single-enclosed steel aboveground vessel (6 feet in diameter and 5.75 feet high) containing activated carbon on the eastern side of the basin. The odor control equipment would also include two 2-foot by 2-foot by 2-foot louvered penthouses, located on the southwest and northwestern sides of EQ basin. In addition, the blower and GAC vessel would be located on a 10-foot by 12-foot concrete slab. The remaining proportions of the odor control system would be located underground. Therefore, there is no potential for disruption of visual context or impediments to views and scenic values.

Construction, operation, and maintenance of the EQ basin would not significantly affect views along the SR-1 scenic corridor.

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

Less than Significant Impact with Mitigation. No officially designated state scenic highways are located in the vicinity of the Project. However, the segment of SR-1 that travels through the City is designated as an eligible state scenic highway (Caltrans 2016).

Construction activities would temporarily impact the aesthetics of the Skatepark, the Skatepark parking lot, the Community Center, and the areas surrounding the pipeline alignment. During construction, the following would be removed, as shown in **Appendix A2**:

- Four heritage trees located east of the intersection of Crespi Drive and the driveway entrance to the Skatepark parking lot are planned to be removed to make a staging area for construction;
- One heritage tree east of the parking area entrance in the MCC building location;
- Three heritage trees at the northern end of the Skatepark parking lot and the northwestern corner of the EQ basin;
- The narrow strip of landscaping to the east of the parking lot in the odor control equipment location; and
- The narrow landscaped median in the center of the current parking lot.

Development projects involving heritage trees which require Planning Commission approval must be accompanied by a tree protection plan. As required by the ordinance, the City's Public Works Department would submit a Heritage Tree Permit and a Tree Protection Plan along with planning permits, prior to obtaining project approval from the City's Planning Department. As stated in **Mitigation Measure AES-1**, the Tree Protection Plan would include the replacement of removed trees at a minimum ratio of 1:1, meaning that a total of at least eight trees would be planted to replace the eight removed trees.

No tree removal is planned along the pipeline alignment either in the rights-of-way or the utility easement.

With implementation of **Mitigation Measure AES-1,** the impact would be less than significant.

c) Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Less than Significant Impact with Mitigation. The visual character of the Skatepark, associated parking lot, and the Community Center is standard for a recreational center parking lot. The visual character along the associated pipelines is described as a suburban single-family residential area. Construction of the Project would result in the temporary presence of construction activities, equipment, and materials; ground disturbance, and stock piles, which would temporarily degrade the existing visual character of the Project site, as it would introduce visual elements that are not typical to the area. However, construction would be temporary and impacts would be short term. As discussed in **Subsection 1b**, above, the construction would result in the removal of a total of eight heritage trees in the vicinity of the Skatepark parking lot, which could degrade the existing visual character of the Site. **Figure 5.C** in the **Project Description** shows the existing view of the parking lot from the south, and a rendering of the same view following construction of the Project. As shown, most of the Project elements would be located underground during O&M of the Project, with the exception of four structures (the MCC building, air blower, and two GAC vessels) which would be located in the Skatepark parking

lot. Therefore, the visual character of the Project sites would be restored after construction, particularly with the implementation of **Mitigation Measure AES-1,** which requires the replacement of removed trees.

d. Would the project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

Less than Significant Impact. Construction of the Project would occur during daylight hours; therefore, no lighting would be necessary in the Project area during construction. Staged materials and equipment during construction would not create substantial glare, and they would generally be non-specular.

Most of the completed Project elements would be located underground during O&M of the Project, with the exception of the aboveground structures for the MCC building and odor control equipment, which would be located in the northern portion of the new Skatepark parking lot. Four existing pole-mounted lights, which provide light to the Skatepark parking lot, would be removed during construction and replaced with new poles and lights following construction. The level of lighting for the parking lot during operation of the EQ basin would be restored to existing conditions. The parking lot lighting design for the Project would minimize or eliminate light spillage or glare to adjacent residences. Given the appearance of asphalt concrete pavement, the completed Project would not be a source of substantial light or glare. As current conditions including lighting structures would be generally restored, the Project would not adversely affect day or nighttime views in the area. The impact would be less than significant.

Mitigation Measures

AES-1 The Tree Protection Plan prepared by the City (or designee) shall include a schedule and replacement ratio for heritage tree removal. The Tree Protection Plan shall require that replacement trees shall be placed as closely as feasible to the removal site in order to return aesthetics to pre-project conditions.

References

California Department of Transportation (Caltrans). 2016. *Scenic Highway Routes*. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed on August 10, 2016.

City of Pacifica. 1980a. City of Pacifica General Plan. Scenic Highways Element.

2. Agricultural and Forestry Resources	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

2. Agricultural and Forestry Resources	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Existing Conditions

The Project would occur within the existing Skatepark parking lot, existing street rights-of-way, and underground utility easements. There are no agricultural or forest resources on the EQ basin site or the proposed pipeline areas.

Impact Discussion

There would be no impacts to agricultural and forestry resources due to the Project.

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The current land use of proposed EQ basin site is a parking lot for the Skatepark, and following the installation of the EQ basin, the site would again be used as a parking lot. The

proposed pipeline alignments are located in existing rights-of-way and an existing utility easement.

The Farmland Mapping and Monitoring Program (FMMP) designates the Project area (EQ basin site and pipeline alignments) as "Urban and Built-Up Land" on the California Important Farmland Finder (IFF) map (State of California 2014). The Project would have no impact under this criterion.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The EQ basin site is zoned as M-1, and the pipeline alignment areas are zoned as R-1 (City of Pacifica 2001a). The Project location is not under Williamson Act Contract (State of California 2012). The Project would have no impact under this criterion.

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

No Impact. The Project contains no forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)). The Project would have no impact under this criterion.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The Project would not result in the loss of forest land or conversion of forest land to non-forest use. The Project would have no impact under this criterion.

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

No Impact. The Project would not be located within or nearby Farmland or forest land; therefore, the Project would not result in the conversion of any Farmland or forest land for other uses. See **Subsections 2a through 2d** above. The Project would have no impact under this criterion.

Mitigation Measures

None required.

References

City of Pacifica. 2001a. City of Pacifica Zoning Maps. http://www.cityofpacifica.org/civicax/filebank/blobdload.aspx?blobid=2469

State of California, Department of Conservation. 2012. San Mateo County Williamson Act FY 2006/2007. ftp://ftp.consrv.ca.gov/pub/dlrp/wa/SanMateo_06_07_WA.pdf

_____. 2014. Farmland Mapping and Monitoring Program, California Important Farmland Finder. http://maps.conservation.ca.gov/ciff/ciff.html

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

Existing Conditions and Project Setting

The Project is located in northwestern San Mateo County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the state and federal levels. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).

Air Pollutants of Concern

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NOx). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. The highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources

(BAAQMD 2016a). High ozone levels aggravate respiratory and cardiovascular diseases, reduce lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Toxic Air Contaminants

Toxic air contaminants (TACs) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and federal levels.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent over three-quarters of the cancer risk from TACs (based on the Bay Area average; BAAQMD 2014a). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the California's Proposition 65 or under the federal Hazardous Air Pollutants programs.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium- and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a new regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles (CARB 2016). The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle.

The BAAQMD is the regional agency tasked with managing air quality in the region. At the state level, the CARB (a part of the California Environmental Protection Agency [EPA]) oversees

regional air district activities and regulates air quality at the state level. The BAAQMD has published CEQA Air Quality Guidelines (BAAQMD 2011) that are used in this assessment to evaluate air quality impacts of projects.

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain high concentrations of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. The closest sensitive receptors are residences to the south that are within 100 feet of the proposed EQ basin site, children using the adjacent Skatepark, and children and elderly persons using the adjacent Community Center. Sensitive receptors also include the Ocean View Senior Apartments approximately 400 feet to the northeast of the Project site and the Cabrillo Elementary School approximately 500 feet to the east. There are additional residences located to the south of the proposed EQ basin site, and proposed trenching activities associated with pipeline installation would traverse the residential neighborhood south of the proposed EQ basin site. Impacts to sensitive receptors are discussed in **Subsection 3d**, below.

BAAQMD Rules and Regulations Applicable to Project Pollutant Sources

During construction, the Project must comply with the following BAAQMD Rules and Regulations (BAAQMD 2016b):

> *Regulation 8 (Organic Compounds) Rule 3 (Architectural Coatings)*
>
> "8-3-301 VOC Content Limits: … no person shall … solicit for application or apply within the District, any architectural coating with a VOC content … in excess of the corresponding limit [i.e., for paints and solvents, a VOC content of 100 grams per liter or less for interior surfaces and 150 grams per liter or less for exterior surfaces]."
>
> *Regulation 11 (Hazardous Pollutants) Rule 1 (Lead)*
>
> "11-1-302 Ground Level [Lead] Concentration Limit without Background: A person shall not discharge any emission of lead, or compound of lead calculated as lead, that will result in ground level concentrations in excess of 1.0 microgram per cubic meter ($\mu g/m^3$) averaged over 24 hours."

If used, an emergency standby diesel generator must comply with the following:

> *Regulation 2 (Permits) Rule 2 (New Source Review)*
>
> "2-2-301 Best Available Control Technology [BACT] Requirement: An applicant for an authority to construct or a permit to operate shall apply BACT to any new or modified source … which has the potential to emit 10.0 pounds or more per highest day of precursor organic compounds (POC), non-precursor organic compounds (NPOC), nitrogen oxides (NOx), sulfur dioxide (SO2), PM_{10} or carbon monoxide (CO)."
>
> *Regulation 9 (Inorganic Gaseous Pollutants) Rule 8 (Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines)*
>
> "9-8-330 Emergency Standby Engines, Hours of Operation: A person may only operate an emergency standby engine under the following circumstances: … for emergency use for an unlimited number of hours; and … for reliability-related activities so long as total hours of operation for this purpose do not exceed 50 hours in a calendar year, or limitations contained in a District permit, whichever is lower."

To any potential odor complaints arising from Project sources (e.g., truck exhaust, cooking odors, etc.):

> *Regulation 7 (Odorous Substances)*
>
> "7-102 Citizen Complaints: The limitations of this Regulation shall not be applicable until the APCO [Air Pollution Control Officer] receives odor complaints from ten or more complainants within a 90-day period, alleging that a person has caused odors perceived at or beyond the property line of such person and deemed to be objectionable by the complainants in the normal course of their work, travel or residence."

Study Methodology and Significance Criteria

The Project and cumulative air quality analyses are addressed using the methodologies and significance thresholds recommended in CEQA Air Quality Guidelines (BAAQMD 2011). The criteria air pollutants or their precursors evaluated herein are: CO, ROG and NOx, PM_{10}, and $PM_{2.5}$. Community or health risks associated with Project-specific and cumulative exposures to TACs are also evaluated.

In June 2011, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA and were posted on BAAQMD's website and included in their updated CEQA Guidelines (BAAQMD 2011). The significance thresholds identified by BAAQMD and used in this analysis are summarized in **Table 4**.

Table 4. Air Quality Significance Thresholds

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Annual Average Emissions (tons/year)
Criteria Air Pollutants			
ROG, NOx or $PM_{2.5}$	54[a]	54	10
PM_{10}	82[a]	82	15
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other BMPs	Not Applicable	
Health Risks and Hazards for New Sources			
Excess Cancer Risk	>10 per one million		
Hazard Index	>1.0		
Incremental annual $PM_{2.5}$	>0.3 µg/m^3		
Cumulative Health Risks and Hazards for Sensitive Receptors and New Sources (from all sources within 1,000-foot zone of influence)			
Excess Cancer Risk	>100 per one million		
Hazard Index	>10.0		
Incremental Annual $PM_{2.5}$	>0.8 µg/m^3		
Odors			
Odor Complaints	None	5 confirmed complaints per year, averaged over 3 years	

[a] Exhaust emissions of $PM_{2.5}$ or PM_{10} only

Notes: ROG = reactive organic gases, NOx = nitrogen oxides, CO = carbon monoxide, PM_{10} = coarse particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5 µm or less; ppm = parts per million, µg = micrograms, lbs = pounds

The BAAQMD's adoption of significance thresholds contained in the 2011 CEQA Air Quality Guidelines was called into question by an order issued March 5, 2012, in California Building Industry Association (CBIA) v. BAAQMD (Alameda Superior Court Case No. RGI0548693). The order required the BAAQMD to set aside its approval of the thresholds until it has conducted environmental review under CEQA. The ruling made in the case concerned the environmental impacts of adopting the thresholds and how the thresholds would indirectly affect land use development patterns. In August 2013, the Appellate Court struck down the lower court's order to set aside the thresholds (Cal. Court of Appeal, First Appellate District, Case Nos. A135335 & A136212). CBIA sought review by the California Supreme Court on three issues, including the appellate court's decision to uphold the BAAQMD's adoption of the thresholds, and the Court granted review on just one: "Under what circumstances, if any, does CEQA require an analysis of

how existing environmental conditions will impact future residents or users of a proposed project?" In December 2015, the Supreme Court determined that an analysis of the impacts of the environment on a project – known as "CEQA-in-reverse" – is only required under two limited circumstances: (1) when a statute provides an express legislative directive to consider such impacts; and (2) when a proposed project risks exacerbating environmental hazards or conditions that already exist (Cal. Supreme Court Case No. S213478). The Supreme Court reversed the Court of Appeal's decision and remanded the matter back to the appellate court to reconsider the case in light of the Supreme Court's ruling. Accordingly, the case is currently pending back in the Court of Appeal. Because the Supreme Court's holding concerns the effects of the environment on a project (as contrasted to the effects of a proposed project on the environment), and not the science behind the thresholds, the significance thresholds contained in the 2011 CEQA Air Quality Guidelines are applied to this project.

Impact Discussion

Currently, the proposed EQ basin site and the pipeline alignment areas do not produce air pollutant emissions other than vehicles accessing the Skatepark parking lot and driving in the public rights-of-way. Temporary construction air pollutant emissions and Project operational air pollutant emissions would be less than BAAQMD emission thresholds. There are, however, additional thresholds that judge the significance of the health impacts of the ambient concentration of the Project-emitted pollutants at the closest residential locations. Based on dispersion modeling of DPM from Project construction activities, the construction cancer risk and hazard index (HI) were less than BAAQMD thresholds, but the modeled maximum annual $PM_{2.5}$ concentration would exceed the Project-level CEQA threshold. However, with implementation of **Applicant Proposed Measure APM-1** and **Mitigation Measure AQ-1**, the maximum annual $PM_{2.5}$ concentration increment would be reduced to less than the BAAQMD health impact thresholds. Project operation would have negligible emissions as the Project would not include any onsite combustion equipment routinely operated or an increase in traffic.

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact. The Project is located in the San Francisco Bay Area Air Basin. The Project is in an area currently designated nonattainment for the California 1-hour and 8-hour ozone standards, nonattainment for the California 24-hour and annual PM_{10} standards, and nonattainment for the California annual $PM_{2.5}$ standard. It is also designated as nonattainment for the national 8-hour ozone standard and nonattainment for the national 24-hour $PM_{2.5}$ standard. To protect public health, the BAAQMD has adopted plans to achieve ambient air quality standards (BAAQMD 2014b). The BAAQMD must continuously monitor its progress in implementing attainment plans and must periodically report to CARB and the U.S. EPA. It must also periodically revise its attainment plans to reflect new conditions and requirements.

In 1991, the BAAQMD, Metropolitan Transportation Commission, and Association of Bay Area Governments (ABAG) prepared the Bay Area 1991 Clean Air Plan. This air quality plan addresses the California Clean Air Act. Updates to this plan are developed approximately every three years. The plans are meant to demonstrate progress toward meeting the more stringent 1-hour ozone California ambient air quality standards. In 2010, the BAAQMD adopted the Bay Area 2010 Clean Air Plan (BAAQMD 2010a). This Clean Air Plan updates the most recent ozone plan, the 2005 Ozone Strategy. Unlike previous Bay Area Clean Air Plans, the 2010 Clean Air Plan is a multi-pollutant air quality plan addressing four categories of air pollutants:

- Ground-level ozone and the key ozone precursor pollutants (ROG and NOx), as required by state law.
- Particulate matter, primarily $PM_{2.5}$, as well as the precursors to secondary $PM_{2.5}$.
- TACs.
- Greenhouse gases (GHGs).

While previous Clean Air Plans have relied upon a combination of stationary and transportation control measures, the 2010 Clean Air Plan adds two new types of control measures: (1) Land Use and Local Impact Measures, and (2) Energy and Climate Measures. These types of measures would indirectly reduce air pollutant and GHG emissions through reductions in vehicle use and energy usage. In addition, the plan includes further study measures, which would be evaluated as potential control measures.

A significant impact would occur if a project conflicted with the Clean Air Plan through inconsistency with the population-growth and vehicle miles traveled assumptions of the Plan. Construction of the Project would not be considered growth-inducing as it would not in and of itself increase the region's population. There would be no long-term operational component to the Project that would generate air emissions and the Project would not generate substantial new vehicle trips in the San Francisco Bay Area Air Basin that would conflict with the Plan. As a result, the Project would not conflict with or obstruct implementation of the Plan, and this impact would be less than significant.

b) Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than Significant Impact with Mitigation. This section addresses the following: construction fugitive dust emissions, operational ozone precursor pollutants (ROG and NOx), PM_{10} and $PM_{2.5}$ emissions, and construction and operational CO emissions.

Construction Fugitive Dust Emissions

The Project would result in temporary emissions during construction from use of construction equipment, truck traffic, and worker traffic. In the 2010 update to the CEQA Air Quality Guidelines, BAAQMD identifies screening criteria for the sizes of land use projects that could

result in significant air pollutant emissions. For construction impacts, the screening size for an industrial-type project is 259,000 square feet (or 6 acres). The Project size (including EQ basin, pipelines, and ancillary equipment), approximately 1 acre, would be expected to have construction period emissions that are less than the threshold for construction period emissions that are judged on an average daily basis throughout the construction period.

Construction activities, particularly during site preparation, slurry wall construction, EQ basin excavation, and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. During construction, the Project could contribute to an existing air quality violation for particulate matter. With implementation of the BAAQMD CEQA Air Quality Guidelines (BAAQMD 2011) BMPs (**Mitigation Measure AQ-1**), the impact from construction fugitive emissions would be less than significant.

Construction PM_{10} and $PM_{2.5}$ emissions, such as DPM, could affect sensitive receptors and lead to localized community risk impacts, as discussed in the **Regulatory Setting**, Toxic Air Contaminants section, above. These impacts are discussed in **Subsection 3d**, below.

Operational Ozone Precursor Pollutants (ROG and NOx), PM_{10}, and $PM_{2.5}$ Emissions

For operational impacts, the Project is anticipated to result in very few new traffic trips for maintenance and little or no other operational emissions (e.g., from stationary equipment). The BAAQMD CEQA Air Quality Guidelines (BAAQMD 2011) screening project size for operational emissions is identified at 541,000 square feet. The screening project size as developed by BAAQMD assumes that similar projects of smaller size would be expected to have less-than-significant impacts with respect to operational-period emissions thresholds. The total disturbance area for the Project would be approximately 1 acre (43,000 square feet), and is therefore significantly smaller than the BAAQMD screening project size. It is anticipated that the basin would be used five or fewer times per year, primarily in the winter season, when higher flows are anticipated due to I/I into the sanitary sewer collection system. The Project would have negligible operational emissions, which would be less than significant.

Construction and Operational CO Emissions

BAAQMD has identified the following screening criteria for determining whether a project's motor vehicle CO emissions would likely cause ambient air quality standards to be exceeded (BAAQMD 2011):

1. Is the Project consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans?

2. Will the Project traffic increase traffic volumes at affected intersections to more than 44,000 vehicles per hour?

3. Will the Project traffic increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or instructional street canyon, below-grade roadway)?

As discussed in **Section 16, Transportation and Circulation**, the Project would generate a small amount of traffic during construction (up to 40 truckloads per day). The maximum peak month average daily traffic on SR-1 between the Project and the proposed disposal site (Ox Mountain Sanitary Landfill) is approximately 3,800 vehicles per peak hour (Caltrans 2015), and therefore, the Project would not increase the traffic volumes at affected intersections to more than 24,000 vehicles per hour. The Project would not result in emissions of CO or traffic congestion leading to increased emissions of carbon monoxide that would cause exceedances of ambient air quality standards. The Project's contribution to ambient CO impacts would be less than significant during construction and operation.

c) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

Less than Significant Impact with Mitigation. The Bay Area is considered a non-attainment area for ground-level ozone and $PM_{2.5}$ under both the federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for PM_{10} under the California Clean Air Act, but not the federal act. The area has attained both state and federal ambient air quality standards for CO. As part of an effort to attain and maintain ambient air quality standards for ozone and PM_{10}, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for ozone precursor pollutants (ROG and NOx), PM_{10}, and $PM_{2.5}$ and apply to both construction period and operational period impacts. Project emissions of non-attainment and attainment pollutants (and their precursors) were addressed under **Subsection 3b**, above, and **Subsection 3d**, below. As discussed, project-related emissions of ROG, NOx, PM_{10}, and $PM_{2.5}$ would be less than the BAAQMD significance thresholds.

d) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact with Implementation of Applicant Proposed Measure. Project impacts related to increased community risk occur either by generating emissions of TACs or introducing a new sensitive receptor, such as a residential use, in proximity to an existing source of TACs. Construction of the Project would temporarily generate TAC emissions that could impact sensitive receptors near the Project site. Operation of the Project would not be expected to cause localized emissions that could expose sensitive receptors to unhealthy air pollutant

levels. Permanent stationary sources of TACs, such as generators, are not proposed as part of the Project.[4]

Construction activities, particularly during demolition, site preparation, slurry wall construction, EQ basin excavation, and grading would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. These impacts were addressed under **Subsection 3b** above. Construction equipment and associated heavy-duty truck traffic generate diesel exhaust, which is a known TAC. Diesel exhaust poses both potential health and nuisance impacts to nearby receptors. As discussed in the **Project Description**, due to the Project's proximity to residences, the City would require the contractor to use new or retrofitted off-road equipment, alternative fuels (non-diesel), and line power (as soon as feasible) in order to reduce potential Project construction emissions. These requirements are outlined in **Applicant Proposed Measure APM-1**.

A community risk assessment of the Project construction activities was completed by Illingworth & Rodkin in 2016 to evaluate potential health effects to sensitive receptors at nearby residences from construction emissions of DPM and $PM_{2.5}$, as summarized in this section.[5]

Methodology

The California Emissions Estimator Model 2013.2.2 (CalEEMod) was used to provide annual emissions for construction. CalEEMod computes emissions for both onsite and offsite construction and operational activities. Onsite activities are primarily made up of construction equipment emissions, while offsite activities include worker vehicles, truck hauling, and vendor traffic. A construction build-out scenario, including equipment list and phasing schedule provided by the Project Team, was used in the modeling to predict on- and near-site construction emissions. Truck traffic inputs to the model included approximately 2,794 truck trips used for soil off-hauling, equipment transportation, import of concrete and asphalt, and other various trips.

The CalEEMod model provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles. A trip length of 0.5 mile was used to represent vehicle travel while at or near the construction site. For modeling purposes, it is conservatively assumed that all of these emissions from on-road vehicles would occur at the construction site. Fugitive $PM_{2.5}$ dust emissions are included in the CalEEMod modeling.

Illingworth & Rodkin used the U.S. EPA ISCST3 dispersion model to calculate concentrations of DPM and $PM_{2.5}$ at existing sensitive receptors in the vicinity of the EQ basin and pipeline sites. The ISCST3 dispersion model is a BAAQMD-recommended model for use in modeling these

[4] The Project is anticipated to rely on portable generators to provide a backup power in emergencies. Those generators would not be routinely stationed or tested at the Project site.
[5] DPM is identified by the State of California as a TAC due to its potential to cause cancer.

types of emission activities for CEQA projects (BAAQMD 2012a). Emission sources for the EQ basin and pipeline sites were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions. In addition to the construction in the vicinity of the proposed EQ basin site, construction work would be conducted along nearby City streets for installation of underground pipelines. These emissions are not anticipated to have local impacts because they would be short term at any one location. In order to model health risks associated with the all construction emissions, it has been assumed that about 30 percent of the emissions from the offsite activities (pipeline construction) would be from the jack and bore casing processes. These emissions were added to the onsite construction emissions at the EQ basin site. For the exhaust emissions from construction equipment, an emission release height of 6 meters (19.7 feet) was used for the area sources. The elevated source height reflects the height of the equipment exhaust pipes plus an additional distance for the height of the exhaust plume above the exhaust pipes to account for plume rise of the exhaust gases. For modeling of fugitive $PM_{2.5}$ emissions, a near-ground level release height of 2 meters (6.6 feet) was used for the area sources. Construction emissions were modeled as occurring daily from 8 a.m. to 4:30 p.m., when the majority of construction activity involving equipment usage would occur.

The modeling used a five-year data set (2001 - 2005) of hourly meteorological data from Fort Funston, San Francisco, that was prepared by BAAQMD for use with the ISCST3 model. This is the closest meteorological monitoring station and adequately characterizes meteorological conditions for coastal areas along the San Francisco Peninsula. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the construction period were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptors. Receptor heights of 1.5 meters (4.9 feet) were used for nearby residences and other sensitive receptors per BAAQMD modeling guidance for ground-level exposures (BAAQMD 2012a).

Modeling Results

The Project construction emissions were modeled both using the assumed fleet average engines and with the reduced emission (higher tier or retrofitted) engines as required for the Project by **Applicant Proposed Measure APM-1**. Without use of the higher tier or retrofitted engines, the Project could exceed the significance criteria for increased cancer risk. With the use of the higher tier/retrofitted engines for off-road equipment, the Project would be less than the significance threshold. The results below reflect the Project incorporating APM-1, as discussed in the **Project Description**.

Health risks were modeled at the Cabrillo Elementary School for child exposure and the risks were found to be less than significant.

The maximum modeled DPM and $PM_{2.5}$ concentrations were identified from the modeling. Increased cancer risks were calculated using modeled DPM concentrations (i.e., $PM_{2.5}$ exhaust) and Office of Environmental Health Hazard Assessment (OEHHA)-recommended risk assessment

methods for both a child exposure (3rd trimester through 2 years of age) and adult exposure (OEHHA 2015). The community risk methodology is described in **Appendix B1**. The cancer risk calculations are based on applying the age sensitivity factors to the DPM exposures that reflect the greater sensitivity of infants and small children to cancer-causing TACs. The modeling was performed using the conservative assumption that infants would be present in the residences surrounding the site on a nearly continuous basis throughout the entire construction period.

As shown in **Table 4**, the significance threshold for excess (incremental) cancer risk from a single source is 10.0 in one million. Based on the estimated construction schedule (**Appendix B2**), results of the assessment for project construction, with **APM-1** controls applied, the maximum incremental cancer risk for residential infant exposure would be 8.1 in one million as shown in **Table 5**, below, which would be less than the 10.0 in one million screening criteria. For adult exposure, the maximum impact was computed as 1.8 in one million, which would be less than the 10.0 in one million screening criteria.

The maximum-modeled annual $PM_{2.5}$ concentration with **APM-1**, which is based on combined exhaust and fugitive dust emissions, was 0.04 $\mu g/m^3$, which is less than the threshold of greater than 0.3 $\mu g/m^3$. The maximum modeled annual residential DPM concentration was 0.026 $\mu g/m^3$ with **APM-1**, which is much lower than the Reference Exposure Level. The maximum computed HI based on this DPM concentration with **APM-1** is 0.01, which is lower than the BAAQMD significance criterion of a HI greater than 1.0. The results of emission modeling and the health risk calculations can be found in **Appendix B3** and **Appendix B4**, respectively.

Therefore, with implementation of the **Applicant Proposed Measure APM-1**, the Project would have a less-than-significant impact with respect to community risk caused by construction activities.

Cumulative TAC Impacts

The 2011 CEQA Air Quality Guidelines method for determining cumulative TAC health risk requires the combination of risk from project sources and all permitted stationary sources and major roadways within 1,000 feet of a project site and adding them for comparison with the cumulative health risk thresholds. A database of permitted stationary emissions sources and their health risks is available online (BAAQMD 2012b). There are no permitted sources located within 1,000 feet of the Project site. A database of major roadways in the Bay Area and their health risks is also available online (BAAQMD 2012c). SR-1 is the only other source of TAC emissions within 1,000 feet of the Project site. The combination of uncontrolled project construction activities and impacts from SR-1 traffic would have less-than-significant cumulative risk impacts (see **Table 5**).

Table 5. Health Risk from Project Construction at Sensitive Receptor with Maximum Impact

Source	Excess Cancer Risk (per million)*	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index (Ratio)
BAAQMD Significance Thresholds			
Single-Source Threshold	10.0	0.3	1.0
Cumulative-Source Threshold	100.0	0.8	10.0
Emissions Incorporating Applicant Proposed Measure APM-1			
Maximum Project Construction Impact (Single Source)	8.1	~0.04	<0.01
SR-1 traffic at 400 feet, using BAAQMD Google Earth Highway Screening Tool, Link 41, 6-foot elevation, 400 feet east	3.4	0.03	<0.01
Cumulative at Maximum Impact	11.5	0.07	<0.02
Exceeds Single-Source Threshold?	*No*	*No*	*No*
Exceeds Cumulative Threshold?	*No*	*No*	*No*

e) Would the project create objectionable odors affecting a substantial number of people?

Less than Significant. It is anticipated that the EQ basin would be used five or fewer times per year, primarily in the winter season, when higher flows are anticipated due to I/I into the sanitary sewer collection system. The untreated mixture of stormwater and sewage water stored in the EQ basin during a storm event, when exposed to air, would have the potential to cause odors. Odor control is incorporated into the Project design, as discussed in the **Project Description**.

The EQ basin would be enclosed and have a ventilation system to prevent the buildup of gases that could result in hazardous conditions within the basin, as well as odors. The effluent from the odor control ventilation system would discharge through a GAC unit for treatment by adsorption prior to discharge to the atmosphere.

The EQ basin interior surfaces would be washed after every use and would help reduce odors.

The BAAQMD's significance criteria for odors are subjective and are based on the number of odor complaints generated by a project. According to BAAQMD Regulation 7 (see **Existing Conditions and Project Setting** above), odor complaints would have to be received from 10 or more people within a 90-day period before an odor complaint investigation would be initiated. Generally, the BAAQMD considers any project with the potential to frequently expose members of the public to objectionable odors to cause a significant impact. With respect to the Project, there could be some odors associated with the high flows that fill the basins; however, these events would not be common at the facility and odor control is included in the Project design. Frequent odor complaints would not be anticipated.

Therefore, odor impacts associated with operation of the Project would be less than significant.

Mitigation and Applicant Proposed Measures

AQ-1 The selected contractor shall include basic measures to control dust and exhaust during construction, as recommended by the BAAQMD. During any construction period with ground disturbance, the Project contractor shall implement the following BAAQMD-recommended BMPs that are required of all projects:

1. All exposed non-hardscaped surfaces (e.g., temporary parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered as appropriately to maintain a damp condition.

2. All haul trucks transporting soil, sand, or other loose material offsite shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping or washing down paved streets using potable water is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage with these requirements shall be provided for construction workers at all access points.

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

8. A publicly visible sign shall be posted with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

APM-1 During construction, the selected contractor shall use portable and off-road equipment that would meet, at minimum, the following criteria:

1. All mobile diesel-powered off-road mobile and portable equipment larger than 25 hp and operating on the site for more than 20 hours shall meet, at a minimum, one of the following:

a. Equipped with engines meeting U.S. EPA particulate matter emissions standards for Tier 2 engines or equivalent;

b. All diesel-powered portable equipment (i.e., generators, concrete saws, and pumps) operating on the site for more than 20 hours shall be equipped with CARB-certified Level 3 Diesel Particulate Filters or meet U.S. EPA particulate matter emissions standards for Tier 4 engines or equivalent;

c. Alternatively fueled (i.e., non-diesel) equipment shall be used; or

d. Other measures may be the use of added exhaust devices, or a combination of measures, provided that these measures are approved by the City and demonstrated to reduce community risk impacts to less than significant.

2. Line power shall be utilized as soon as feasible, limiting the use of all diesel-fueled generators, including any diesel-powered welders, used for construction to 20 days for each piece of equipment.

Alternatively, prior to construction, the selected contractor may develop a plan, verified by a qualified air specialist and approved by the City, which ensures that the off-road equipment used onsite to construct the Project would achieve a fleet-wide average 75 percent reduction in PM_{10} exhaust emissions, compared to uncontrolled aggregate statewide emission rates for similar equipment.

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4. Biological Resources	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or 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, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐

4. Biological Resources	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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?	☐	☐	☐	☒

Existing Conditions, Regulatory Setting, and Environmental Setting

The Project area is approximately 500 feet from the shoreline of the Pacific Ocean. It lies at an elevation between 10 and 17 feet above sea level. Adjacent areas contain residential and commercial development, SR-1 and Crespi Drive, and undeveloped land. The Project area is classified as Urban Land in the City of Pacifica's *Sensitive and Critical Habitat Map* (City of Pacifica 2009). The proposed EQ basin site currently consists of an approximately 22,500-square-foot asphalt-covered parking lot for the existing Skatepark and Community Center. The parking lot consists of 46 standard parking stalls, three ADA accessible parking stalls, and a narrow landscaped median running the length of the parking lot. The pipeline alignments are located within existing rights-of-way and utility easements.

In 2016, the City retained MIG | TRA Environmental Sciences (MIG) to perform a Biological Resources Evaluation (MIG 2016), which is included as **Appendix C** to this document. The biological survey area (BSA) included the proposed EQ basin location within the existing Skatepark parking lot, haul routes, areas of temporary impact caused by equipment and materials staging and soil stockpiles, and adjacent areas that are not developed (**Figure 2 of Appendix C**). The influent and effluent conveyance piping shown in **Figure 3 of Appendix C** was not included in the BSA because these pipelines would be built within existing utility right-of-way easements in the adjacent neighborhood, which is completely developed with homes and paved streets.

The Biological Resources Evaluation included the following, as detailed in **Appendix C**:

- Database and literature review,
- Field surveys (October 7, 2016 and October 14, 2016), including taking three data points per the federal methodology (1987 U.S. Army Corps of Engineers [USACE] and Arid West manuals),
- Plant communities and wildlife habitat classification,
- Sensitive habitats and aquatic features identification,
- Special-status species habitat evaluation.

Regulatory Setting

Biological and water resources in California are protected under federal, state, and local laws. The laws that may pertain to the biological and water resources within the Project area include the following. Summaries of each of these laws are included in **Appendix C**.

- Federal Endangered Species Act
- Clean Water Act
    - CWA Section 404
    - CWA Section 401
- California Fish and Game Code
    - California Endangered Species Act
    - Non-Game Mammals
    - California Fish and Game Code Sections 1600-1607
    - Native Plant Protection Act
    - Fully Protected Species and Species of Special Concern
- Sensitive Vegetation Communities
- Porter-Cologne Water Quality Control Act
- Pacifica General Plan (1980)
- City of Pacifica Strategic Plan
- City of Pacifica Heritage Tree Program

Environmental Setting

Climate and Topography

The climate at the BSA is coastal Mediterranean, with most rain falling in the winter and spring. Mild cool temperatures are common in the winter. The summer is characterized by mild temperatures, but fog and cool temperatures are common as well. The average annual rainfall in Pacifica is 22.8 inches (1983 to 1995; worldclimate.com). The BSA is generally level and includes developed, disturbed, and natural areas.

Soils

There are two soil series within the BSA: Urban Land-Elpaloalto complex, 0 to 2% slopes and Candlestick-Barnabe complex, 30-50% slopes (USDA 2016). The Urban Land-Elpaloalto complex consist of disturbed and human transported material and alluvium derived from metamorphic and sedimentary rock. The complex is well-drained. The Candlestick-Barnabe complex is composed of very gravelly and fine sandy loam and is formed from hard fractured sandstone. It is very shallow and well drained. The Urban Land-Elpaloalto complex is listed as having hydric soils in San Mateo County on the National Hydric Soils List (USDA 2015). The Candlestick-Barnabe complex is not listed as having hydric soils in San Mateo County.

Hydrology

The BSA is approximately 500 feet from the Pacific Ocean and is isolated from tidal influence. The BSA includes two areas that potentially fall under the jurisdiction of the USACE and RWQCB as jurisdictional wetlands; however, a formal delineation has not been completed for these areas. For the purposes of the biological resources evaluation, these areas were assumed to contain features that would qualify them as jurisdictional wetlands. Both of these areas lie at a lower elevation than the BSA; therefore, it is feasible that stormwater from the BSA sheet flows into the two potential jurisdictional wetlands during rain events. Both potential wetlands are separated from the rest of the BSA by a chain link fence.

Plant Communities and Associated Wildlife Habitats

Vegetative communities are assemblages of plant species that occur together in the same area, which are defined by species composition and relative abundance. The plant communities were classified using A Manual of California Vegetation (Sawyer et. al. 2009). However, in some cases it is necessary to identify variants of plant community types or to describe non-vegetated areas that are not described in the literature. The BSA is composed of disturbed and developed habitat, except for the two potential jurisdictional wetlands, and is bordered by urban land (developed habitat) to the northeast and southwest.

- Disturbed habitat includes land cleared of vegetation (e.g., agricultural land) or lands dominated by non-native plant species. This type of habitat can also include areas that are mowed regularly and, thus, preclude the development of native vegetation communities. The BSA includes unpaved areas that are dominated by non-native plant species.

- Developed land includes areas where permanent structures and/or pavement have been placed, which prevents the growth of vegetation, or where landscaping is cleared, tended, and maintained. The BSA includes paved parking lots and landscaped areas.

- Ornamental vegetation includes lands that have been planted with landscaping and are maintained on an ongoing basis. Such landscaping may include native and non-native plantings. However, these plantings have been installed as part of an ornamental landscape plan and do not naturally occur onsite. Within the BSA, ornamental vegetation occurs

adjacent to the parking lot in the landscaped areas. The dominant tree within the BSA is Monterey cypress (*Cupressus macrocarpa*; planted) and shrubs present include slender firethorn (*Pyracantha angustifolia*), coyote brush (*Baccharis pilularis*), and arroyo willow (*Salix lasiolepis*). Several Monterey cypress trees would be removed from the BSA as part of the Project. A previous survey identified ten Monterey Cypress trees that could be classified as heritage trees by the City. The trees within the BSA provide suitable nesting habitat for birds and possibly cavity-roosting bats.

Sensitive Habitats, Riparian Habitats, and Critical Habitats

There are no sensitive natural community types, as defined by CDFW or CNPS, present within the areas of the BSA that would be impacted by the Project. Areas containing wetland plant species are located in the BSA adjacent to the areas that would be impacted by the Project. As stated above, there are two potential jurisdictional wetlands within the BSA, which are identified as freshwater emergent wetlands in the Biological Resources section of the City's Draft EIR for the General Plan Update. However, the Draft EIR states that a site assessment is required to verify actual wetlands (City of Pacifica 2014a).

There are no critical habitats within the BSA, as identified by the USFWS (USFWS 2016).

Migration, Travel Corridors and Habitat Fragmentation

Habitat loss, fragmentation, and degradation resulting from land use changes or habitat conversion can alter the use and viability of wildlife movement corridors (i.e., linear habitats that naturally connect and provide passage between two or more otherwise disjunct larger habitats or habitat fragments). In general, studies suggest that habitat corridors provide connectivity for and are used by wildlife, and as such are an important conservation tool (Beier and Noss 1998). Wildlife habitat corridors should fulfill several functions. They should maintain connectivity for daily movement, travel, mate-seeking, and migration; plant propagation; genetic interchange; population movement in response to environmental change or natural disaster; and recolonization of habitats subject to local extirpation (Beier and Loe 1992).

As mentioned above, the BSA includes two undeveloped areas containing wetland plant species within an urban land setting. The developed and the disturbed areas within the BSA, including the proposed location of the EQ basin, likely function as a movement corridor for smaller wildlife species moving between the two undeveloped areas. The BSA is surrounded by major roads and urban development which impede wildlife movement between the BSA and other natural areas in the Linda Mar area.

Special-Status Species

Based on a review of the CNDDB and CNPS databases, the MIG biologist's knowledge of sensitive species, and MIG's assessment of the types of habitats within the Project area, MIG determined that the California red-legged frog (CRLF; *Rana draytonii*) has a low potential to occur with developed and disturbed areas of the BSA and the San Francisco garter snake (SFGS;

Thamnophis sirtalis tetrataenia) has a low potential to occur within developed and disturbed areas the BSA. Further detail on both the CRLF and SFGS survey methods is provided in **Appendix C**.

No special-status plant species are expected to occur within the BSA. This determination was made due to the presence of essential habitat requirements for the species, the presence of known occurrences within three miles of the BSA, and/or the BSA is within the species known range of distribution. A list of special-status species with occurrences within 3 miles of the BSA that are not expected to occur within the BSA is provided in **Appendix C**.

Wetland Assessment Sample Points

Three exploratory sample points were taken within two areas that had the potential to support wetlands, based on observed hydrology and/or vegetation (**Figure 2 of Appendix C**). Two of the data points (1 and 3) did not meet any of the three parameters and one data point (2) met one of the three parameters (hydrophytic vegetation). The disturbed areas within the BSA do not contain wetlands as defined by the USACE using the three parameters of hydrology, hydrophytic vegetation, and hydric soils.

Wetland Hydrology

As defined by the USACE (Environmental Laboratory 1987) wetland hydrology is an area that is inundated either permanently or periodically at mean water depths less than 6.6 feet, or where the soil is saturated at the surface at some time during the growing season of the prevalent vegetation. The period of inundation or soil saturation varies according to the hydrologic/soil moisture regime and occurs in both tidal and non-tidal situations.

Wetland hydrology encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Wetland hydrology indicators provide evidence that the site has a continuing wetland hydrologic regime. Wetland hydrology indicators include visual observation of inundation, visual observation of saturation, water marks, sediment deposits, surface soil cracks, drainage patterns, drift lines, drainage patterns, and oxidized rhizospheres along living roots, in part.

None of the three data points shown on **Figure 2 of Appendix C** and evaluated during this biological resource evaluation met the wetland hydrology indicators.

Impact Discussion

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less than Significant Impact with Mitigation.

Special-Status Animals

Both the CRLF and SFGS could occur in disturbed areas within the BSA if they are present in potential habitat nearby; their presence in open space areas of the BSA has not been confirmed. Direct impacts to CRLF and SFGS could occur if individuals of these species travel or migrate into work areas and become trapped in trenches or holes, trapped in monofilament netting used in erosion control materials, predated by species attracted to refuse left onsite by the construction crew, or crushed by construction vehicles; or if harassment occurs resulting in altered behavioral patterns that impact survival. Construction vehicles or materials driven or stored in natural habitat areas outside of the wildlife exclusion fence could also impact these species. In addition, the Project could result in indirect impacts to these species if stormwater carries pollutants (e.g., oil, gas, solvents, chemicals, paint, etc.) or sediment into the adjacent undeveloped habitats that could support these species.

With the implementation of **Mitigation Measures BIO-1** and **BIO-2**, which would include posting signage to alert vehicles to remain on roadways and previously disturbed areas, conducting an environmental awareness training for construction personnel, implementing BMPs as identified in the Stormwater Pollution Prevention Plan (SWPPP) and in **BIO-2**, a pre-construction survey for CRLF and SFGS, installation of wildlife exclusion fencing around the BSA, biological monitoring during construction, avoiding the use of monofilament netting, halting construction activities if these species are found in the construction area or along the exclusion fencing, and revegetating and stabilizing the project area following construction, the impacts from the Project would be less than significant.

Roosting Bats

The trees within the BSA could provide suitable roosting habitat for several bat species protected under California Fish and Game Code. Removal or disturbance of roost habitat may result in significant impacts to bat populations if an occupied or perennial (but unoccupied) maternity or colony roost is disturbed or removed. With the implementation of **Mitigation Measures BIO-2**, which would require a pre-construction bat survey, avoiding removal of the roost if feasible, or excluding bats prior to removal of the roost, the impacts from the Project would be less than significant.

Nesting Birds

Birds protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (including song birds and raptors) could nest and are potentially present in the trees within the BSA. When construction activities would start during the avian breeding season (February 1 to August 31 for passerines and January 1 to September 15 for raptors), injury to individuals or nest abandonment could occur. In addition, noise and increased construction activity could temporarily disturb nesting or foraging activities, potentially resulting in the abandonment of nest sites. Implementation of **Mitigation Measures BIO-2** would require a pre-construction

nesting bird survey and consultation with the CDFW biologist to determine the appropriate buffer if an active nest is discovered, and what passive activities would be allowed in the buffer. This measure would reduce impacts from the Project to less than significant.

The Project would require the removal of trees that provide nesting habitat for birds. As stated in **Mitigation Measure AES-1**, the trees would be replaced with native tree species at a minimum 1:1 ratio.

Special-Status Plants

Because of the lack of suitable habitat, special-status plants are not expected within the developed and disturbed areas of the BSA. Therefore, there would be no impacts to special-status plants. No further botanical surveys are recommended at this time.

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

Less than Significant Impact with Mitigation. Sensitive vegetation communities include riparian habitat or other sensitive natural communities identified in local or regional plans, policies, or regulations, or designated by the USFWS and CDFW. The BSA includes two undeveloped areas that contain vegetation typical of wetlands. Willows (wetland vegetation) extend onto a berm along the east side of the Skatepark parking lot. However, no work would occur within the undeveloped areas or on the portion of the berm containing willows during project construction. Although no direct impacts to wetlands or any other sensitive natural communities are proposed by the Project, the Project could result in impacts to these areas if equipment is operated or materials are stored in these areas, or if construction-related pollutants (such as oil, gas, solvents, paints, trash) are dumped or allowed to flow into these adjacent undeveloped areas. As identified in **Mitigation Measure BIO-2**, a wildlife exclusion/environmental fence would be placed between active construction areas and the undeveloped areas containing wetland vegetation to protect these areas from the direct impacts of construction activities, and BMPs implemented through a SWPPP would protect these areas from pollutants that can adversely impact wetland vegetation and habitat quality. Therefore, impacts on wetland vegetation would be less than significant with implementation of **Mitigation Measure BIO-2**.

No other sensitive natural communities are present in the BSA and the Project would not directly impact sensitive natural communities.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant Impact with Mitigation. Although no direct impacts to wetlands are proposed by the Project, the Project could result in impacts to these areas if equipment is operated or materials are stored in these areas that are adjacent to the construction site, or if construction-related pollutants (such as oil, gas, solvents, paints, trash) are dumped or allowed to flow into them. As identified in **Mitigation Measure BIO-2**, a wildlife exclusion/environmental fence would be placed between active construction areas and the undeveloped areas containing wetland vegetation to protect these areas from the direct impacts of construction activities, and as identified in **Mitigation Measure BIO-1**, BMPs implemented through a SWPPP would protect these areas from pollutants that can adversely impact wetland vegetation and habitat quality. Therefore, with implementation of **Mitigation Measures BIO-1** and **BIO-2**, impacts on wetland vegetation would be less than significant.

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?

Less than Significant Impact with Mitigation. The Project is not in a significant migratory corridor and does not contain a native wildlife nursery site; however, there may be some wildlife movement between the undeveloped areas east and west of the site. Project activities could result in temporary barriers to wildlife movement between the two undeveloped areas of the BSA during the 12 to 18 months of construction, but it would not result in permanent barriers or restriction beyond existing conditions because the area would be restored to its pre-construction condition following construction. The qualified biologist overseeing the placement of wildlife exclusion fencing (**Mitigation Measure BIO-2**) would ensure placement of the fence so that a minimum 3-foot-wide wildlife corridor remains open at the south end of the Project site, between the existing parking lot and the residential fences. The biological monitor performing daily site inspections would identify if wildlife trying to move between the undeveloped areas are getting trapped; if there is an issue, the monitor can identify adaptive measures to assist with wildlife movement (**Mitigation Measure BIO-2**). With the implementation of **Mitigation Measures BIO-2**, including conducting an environmental awareness training for construction personnel, implementing BMPs that protect wildlife and allowance for a wildlife corridor, properly installing wildlife exclusion fencing with escape routes such as exit funnels, and biological monitoring during construction, temporary impacts from the Project on wildlife movement would be less than significant.

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

Less than Significant Impact. The BSA contains several Monterey cypress trees that were planted as part of the landscaping for the Community Center. As discussed in **Subsection 1b**, a tree survey would be conducted by a qualified arborist prior to construction to assess the condition of the trees to be impacted by the Project and determine if they are classified as heritage trees by the City. In accordance with City of Pacifica Municipal Code, removal of heritage trees or construction within the drip line of any heritage tree would require approval from the City's Planning Commission. Compliance with this policy would mean the Project would not conflict with local policies.

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

No Impact. The BSA is not within an area covered by a Habitat Conservation Plan or Natural Community Conservation Plan. Therefore, the Project would have no impact related to a conservation plan.

Mitigation Measures

BIO-1 The City shall implement the following measures or designate implementation of these measures to the contractor prior to construction:

1. Post signage indicating that travel and parking of vehicles and equipment must be limited to pavement, existing roads, and previously disturbed areas.

2. Include provisions in the Project Plans detailing the areas that have been found to be acceptable for disturbance (i.e., previously disturbed areas and those within the BSA). The contractor shall not disturb or remove vegetation outside of these areas. Work areas that would be temporarily impacted by construction would be restored with respect to pre-existing contours and conditions upon completion of work. Restoration work including re-vegetation and soil stabilization shall be evaluated upon completion of work and performed as needed.

3. The City shall ensure that the SWPPP prepared and implemented for the Project shall include measures that:

   - minimize erosion and/or prevent water-borne silt from being deposited in adjacent undeveloped areas;

   - prevent waste and/or construction materials from getting into the adjacent undeveloped areas; and

- control and prevent the discharge of all potential pollutants, including hazardous materials, solid wastes, paints, concrete, petroleum products, chemicals, wash water or sediment, and non-stormwater discharges to adjacent undeveloped areas via storm drains, water courses, or sheet flow.

BIO-2 The City shall implement the following measures or designate implementation of these measures to the contractor:

1. A qualified biologist shall assist with the placement of wildlife exclusion fencing and verify that stormwater protection measures to protect adjacent undeveloped areas are in place prior to construction. The biologist shall be provided the contact information of the SWPPP preparer, and vice versa.

2. Before the contractors, their employees, or any persons start any work onsite, each worker shall participate in an employee education program, consisting of a brief presentation to explain biological resources on the Project site, which shall be conducted by a qualified biologist. The program shall include the following:

   a. a description of relevant special-status species, nesting birds, and bats along with their habitat needs as they pertain to the BSA;

   b. a report of the occurrence of these species in the Project vicinity, as applicable;

   c. an explanation of the status of these species and their protection under the federal and state regulations;

   d. a list of measures being taken to reduce potential impacts to natural resources during project construction and implementation;

   e. instructions if a special-status species is found onsite; and

   f. a summary of the consequences of violating state and federal law related to these species.

   A fact sheet conveying this information shall be prepared and distributed to the above-mentioned people and anyone else who may enter the work areas within the BSA. Upon completion of training, employees shall sign a form stating that they attended the training and agree to all the conservation and protection measures. The training logs shall be provided to the City on a monthly basis.

3. A qualified biologist shall conduct a pre-construction survey within the Project area for the presence of CRLF and SFGS. The survey shall be conducted immediately prior to the initial onset of Project activities. If any special-status species are found, work shall not commence until the appropriate state and/or federal resource agencies are contacted and avoidance and mitigation measures are in place.

4. Within the disturbed areas of the BSA, all burrows that can be potentially occupied by CRLF and SFGS shall be hand-excavated by a qualified biologist who holds current permits to handle these species, prior to the start of construction activities. If CRLF or SFGS are found, the USFWS and CDFW shall be consulted to determine an appropriate course of action. Actions could include the relocation of the animal to nearby habitat, and compensatory mitigation for removal of occupied habitat.

5. A wildlife exclusion/environmental fence (with escape routes, such as exit funnels) shall be erected around active construction areas to prevent the movement of animals into active construction areas. During construction, the fence shall be checked every day before construction activities commence for damage, breaks, or trapped wildlife. Any damage to the fence shall be repaired in a timely manner. The qualified biologist overseeing the placement of wildlife exclusion fencing shall ensure placement of the fence so that a minimum 3-foot-wide wildlife corridor remains open at the south end of the project site, between the existing parking lot and the residential fences.

6. A qualified biologist shall inspect the area inside of the fence for CRLF and SFGS every day before construction activities commence. If any special-status species are found, construction activities shall not be allowed to start and the USFWS and CDFW shall be consulted on an appropriate course of action. Such action could include leaving the animal alone to move away on its own or the relocation of the animal to an area outside of the BSA.

7. When construction and construction-related activities (including but not limited to mobilization and staging, clearing, grubbing, vegetation removal, fence installation, demolition, and grading noise) occurs during the avian nesting season (from February 1 to August 31 for passerines and January 1 to September 15 for raptors), all suitable habitats located within the Project's area of disturbance including staging and storage areas plus a 250-foot (passerines) and 1,000-foot (raptor nests) buffer around these areas shall be thoroughly surveyed, as feasible, for the presence of active nests by a qualified biologist no more than five days before commencement of any site disturbance activities and equipment mobilization. If project activities are delayed by more than five days, an additional nesting bird survey shall be performed. Active nesting is present if a bird is building a nest, sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys shall be documented and provided to the City's Planning Department.

8. If pre-construction nesting bird surveys identify potential impacts to active nests, no site disturbance and mobilization of heavy equipment shall take place within a buffer determined by the biologist in consultation with the CDFW biologist. During that consultation, it can also be determined what low-impact construction activities are allowed within the buffer. The buffer shall be in place until the chicks have fledged. Monitoring shall be required to ensure compliance with the MBTA and California Fish and Game Code. Monitoring dates and findings shall be documented and provided to the City's Planning

Department. A preconstruction survey of trees within the developed and disturbed areas of the BSA shall be conducted by a qualified biologist for colony bat roosts within 14 days prior to the onset of project activity, and the survey shall be documented and provided to the City's Planning Department. If an occupied maternity or colony roost is detected, CDFW shall be consulted to determine appropriate measures, such as bat exclusion methods, if the roost cannot be avoided.

9. Food items may attract wild animals onto the construction site, which would expose them to construction-related hazards. The construction site shall be maintained in a clean condition. All trash (e.g., food scraps, cans, bottles, containers, wrappers, cigarette butts, and other discarded items) shall be placed in closed containers and properly disposed of.

10. If an animal is found at the work site and is believed to be a protected species, work must be halted and the project biologist be contacted for guidance. Care must be taken not to harm or harass the species. No wildlife species shall be handled and/or removed from the Project area by anyone except qualified biologists.

11. The Project specifications and the contractor's work plan and SWPPP shall include provisions to ensure that the use of monofilament netting, including its use in temporary and permanent erosion control materials, is avoided altogether. All holes greater than 1 foot deep must be sealed overnight to prevent the entrapment of wildlife. Where holes or trenches cannot be sealed, escape ramps that are no greater than 30% slope shall be positioned such that entrapped wildlife would be able to escape. The escape ramps should be at least 1 foot wide and covered/fitted with a material that provides traction.

References

City of Pacifica. 2014a. Pacifica General Plan, Draft Environmental Impact Report. http://www.cityofpacifica.org/depts/planning/general_plan_update/default.asp

U.S. Fish and Wildlife Service (USFWS). 2016. Environmental Conservation Online System, accessed on November 12, 2016 at http://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77.

_____. 2016. Sacramento Fish and Wildlife Office website, accessed on November 12, 2016 https://www.fws.gov/sacramento/es/critical-habitat/CA-Red-Legged-Frog/Current/Documents/SNM-1-2_2010_CRLF_fCH.pdf

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

Existing Conditions

The proposed EQ basin is located in a developed area, with the Skatepark and the Pacifica Community Center to the northwest and northeast, respectively; commercial properties to the east; and residential properties to the south. The EQ basin site currently consists of an asphalt-covered parking area with limited landscaping and sidewalks surrounding it. The proposed pipeline alignments are located within existing rights-of-way and utility easements.

Impact Discussion

While the Project could disturb unknown historical, archaeological, and/or paleontological resources during construction, none of the historic sites listed in the City's 1980 General Plan are in the Project area. With the potential for presence of archaeological deposits, there is the potential for presence of human remains. Once construction is complete, O&M of the EQ basin would not include ground-disturbing activities. Potential disturbance to these resources during construction is considered a potentially significant impact; however, with implementation of **Mitigation Measure CUL-1** and **Mitigation Measure CUL-2,** potentially significant impacts on cultural resources would be less than significant.

a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Less than Significant Impact with Mitigation. Based on a review of historical aerial photographs, the area of the proposed EQ basin location was undeveloped from at least 1946 through at least 1968, and has been improved with an asphalt-covered parking lot since at least 1980. As of 1946, the area in the vicinity of the Project was largely undeveloped, with the exception of a few structures located on the northern adjoining property. The southern adjoining property has been developed with single-family residences since at least 1956. Commercial buildings were constructed on the western adjoining property since at least 1980.

According to the City's 1980 General Plan and General Plan Draft Environmental Impact Report (DEIR; City of Pacifica 2014a), the area of the Project site is not listed as a National Register Landmark, a California Historical Landmark, California Point of Historical Interest, or as a Local Landmark. One California Historical Landmark is located in the general vicinity of the Project, the Portola Expedition Camp – San Pedro Creek, located at southern corner of the intersection of Crespi Drive and SR-1, approximately 450 feet north of the EQ basin site. The Tobin Station Ocean Shore Railroad site, located approximately 0.45 mile southwest of the Project Site, is listed as a California Point of Historical Interest. No additional sites were identified within a 0.5-mile radius of the Project location in the DEIR or the General Plan. Construction of the EQ basin, the pipelines, nor the completed Project would impact the above historical resources.

Historical resources could potentially be discovered during ground disturbance activities, which is considered a potentially significant impact. With implementation of **Mitigation Measure CUL-1** and **Mitigation Measure CUL-2**, including consultation with a qualified archaeologist or paleontologist if prehistoric, historic, or paleontological materials are discovered (**CUL-1**) and training of workers on identification and responsibilities associated with cultural resources (**CUL-2**), potentially significant impacts to historical resources would be less than significant. Once construction is complete, O&M of the EQ basin would not include ground-disturbing activities and, therefore, would not impact cultural resources. There is thus no potential for significant impacts to historical resources after construction.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less than Significant Impact with Mitigation. According to the Pacifica General Plan DEIR (City of Pacifica 2014a), Native Americans historically existed in the City and surrounding area. Five Native American archaeological resources (classified as habitation sites) have been found and recorded in Pacifica. During the City's General Plan update process in 2009, the City coordinated with the Native American Heritage Commission (NAHC) to perform a record search of their sacred lands files. NAHC's search did not identify additional Native American cultural resources within Pacifica, although six tribes were identified as potentially having existed in the City area.

During the DEIR preparation, letters of inquiry were sent to the six tribal representatives; however, no responses were received (City of Pacifica 2014a).

Archaeological resources could potentially be discovered during ground disturbance activities, which is considered a potentially significant impact. With implementation of **Mitigation Measure CUL-1** and **Mitigation Measure CUL-2**, including consultation with a qualified archaeologist or paleontologist if prehistoric, historic, or paleontological materials are discovered (**CUL-1**) and training of workers on identification and responsibilities associated with cultural resources (**CUL-2**), potentially significant impacts to archaeological resources would be less than significant. Once construction is complete, O&M of the EQ basin would not include ground-disturbing activities and, therefore, would not impact cultural resources. There is thus no potential for significant impacts to historical resources after construction.

c) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant Impact with Mitigation. According to the Pacifica General Plan DEIR, no known significant paleontological resources exist in Pacifica. However, should paleontological resources be uncovered during ground disturbance activities at the Project site, potential impacts to paleontological resources would be less than significant with the implementation of **Mitigation Measure CUL-1** and **Mitigation Measure CUL-2**, including consultation with a qualified archaeologist or paleontologist if prehistoric, historic, or paleontological materials are discovered (**CUL-1**) and training of workers on identification and responsibilities associated with cultural resources (**CUL-2**). Once construction is complete, O&M of the EQ basin would not include ground-disturbing activities and, therefore, would not impact cultural resources. There is thus no potential for significant impacts to historical resources after construction.

d) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Less than Significant Impact with Mitigation. With the potential to discover unknown Native American resources during ground disturbance activities (as discussed above in **Subsection 5b**), human remains could potentially be present in the Project footprint and, if so, may be discovered during ground disturbance activities, which is considered a potentially significant impact. As discussed in the **Project Description**, in the event that any human remains were encountered during ground-disturbing activities, the City would be required to comply with California HSC Section 7050.5, Public Resources Code Section 5097.98 and CCR Section 15064.5(e) (CEQA), which states the mandated procedures of conduct following the discovery of human remains. According to the provisions in CEQA, if human remains are encountered at the Project site, all work in the immediate vicinity of the discovery shall cease and necessary steps shall be taken to ensure the integrity of the immediate area. The San Mateo County Coroner shall be notified immediately. The Coroner shall then determine whether the remains are Native

American. If the Coroner determines that the remains are Native American, the Coroner shall notify NAHC within 24 hours.

With implementation of **Mitigation Measure CUL-2,** including training of workers on identification and responsibilities associated with cultural resources, potentially significant impacts associated with the presence of human remains would be less than significant. Once construction is complete, O&M of the EQ basin would not include ground-disturbing activities and, therefore, would not impact cultural resources. There is thus no potential for significant impacts to historical resources after construction.

Mitigation Measures

CUL-1 In the event that any prehistoric, historic, or paleontological materials are discovered during ground disturbing activities, a qualified archaeologist or paleontologist shall be consulted as to the significance of the find, and avoidance measures or appropriate mitigation shall be completed according to CEQA Guidelines. Significant cultural materials recovered shall be subject to scientific analysis and/or professional museum curation, and a report shall be prepared by the qualified archaeologist according to current professional standards. Ground disturbance activities shall continue upon direction from the qualified archaeologist according to current professional standards.

CUL-2 Prior to performing ground disturbance activities, all onsite workers shall be trained by a City-approved archaeologist in what cultural resources are, identifying cultural resources, the procedure if a cultural resource is found, and their legal responsibility to protect cultural resources. Training logs shall be provided to the City regularly.

References

City of Pacifica. 1980a. City of Pacifica General Plan.

_____. 2014. Pacifica General Plan, Draft Environmental Impact Report. http://www.cityofpacifica.org/depts/planning/general_plan_update/default.asp

Nationwide Environmental Title Research, LLC, Historic aerial photographs, dated 1946, 1956, 1968, 1980, 1987, 1993, 2002, 2005, 2009, 2010, and 2012, accessed on August 10, 2016 at http://historicaerials.com/

U.S. National Park Service, National Register of Historic Places, accessed on August 10, 2016 at https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466

6. Geology and Soils	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit of soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐

6. Geology and Soils	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Existing Conditions

The Project is located in the City of Pacifica, west of the San Francisco Bay Area, which is considered one of the most seismically active regions in the United States. The occurrences of earthquakes in the San Francisco Bay Area are believed to be associated with crustal extensions along a system of sub-parallel fault zones that generally trend in a northwesterly direction. The San Francisco Bay Area is a shallow depression that developed in response to the crustal extensions and is predominantly filled with late Quaternary alluvial, fluvial, and estuarine deposits, overlying older basement rocks. The San Andreas Fault is approximately 6 miles to the northeast and the Pilarcitos Fault is approximately 1 mile to the southwest. No active known fault traces as recognized by the California Geological Survey or the United States Geological Survey are known to pass through the site.

Geotechnical Impacts

In 2016, the City retained Construction Testing Services (CTS) to prepare geotechnical investigations of the EQ basin site and the pipeline locations (Geotechnical Investigation Report, J10998 Pacifica Wet Weather Equalization Basin [CTS 2016a], and the Geotechnical Investigation Report, 11266 Pacifica Wet Weather Equalization Basin – Pipeline [CTS 2016b]). The primary geotechnical engineering concerns to be mitigated by the Project design and construction include shallow groundwater, liquefaction, unsuitable fine-grained soils, compressible Bay Mud, corrosive soils, and lateral earth pressures. The Project design team (Freyer & Laureta, Inc.) have incorporated the recommendations of these investigation reports, as summarized in the discussion below.

- A concrete slurry seepage cutoff wall and basin excavation dewatering pumps would be used for dewatering during construction of the EQ basin. The impact on temporary excavations associated with pipeline installation may require groundwater dewatering with sump pumps.

- Groundwater at the site would place changing hydrostatic pressures on the basin as the groundwater elevation fluctuates during the life of the Project. A concrete plug (unreinforced) would be constructed at the bottom of the basin excavation to serve as a working surface during construction and increase the subgrade support for the basin mat foundation.
- A 5-foot-thick concrete slab would be anchored by micro piles that would be placed at approximately 12 feet on center in each direction for hydrostatic uplift resistance.
- Incorporation of CTS's foundation design recommendations for surface structures for resistance to damage due to liquefaction settlements.
- Aeration (dry back) of native soils prior to placement as intermediate fill along the pipeline trenches would be implemented to address unsuitable moisture contents.
- Structures at grade constructed on soft/unstable materials would be supported on a mat foundation over 3 feet of low-density cellular concrete.
- Soft/unstable material would be removed and replaced with engineered fill and crushed rock encapsulated with a layer of geotextile filter fabric, stronger material that could limit pipeline deflection, or a controlled low-strength material; or stabilized with lime.
- If the basin pipeline is to be installed in soft material assumed to provide minimal support, the pipe wall thickness has been increased.
- Special considerations would be given to mix design proportions to address detected sulfates and chlorides in soils in order to mitigate corrosive properties.
- Lateral earth pressure calculations provided by CTS have been used by the Project structural engineers to design the EQ basin.

Through incorporation of these recommendations, the Project impact to geology and soils would be less than significant.

a) Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: i) fault rupture, ii) strong shaking, iii) seismic-related ground failure or iv) landslides.

i. **Fault Rupture – No Impact.** The site is not located within an Earthquake Special Studies Zone as designated through the Alquist-Priolo Earthquake Fault Zoning Act (California Department of Conservation 1982).

ii. **Strong Shaking – Less than Significant Impact.** Due to the proximity to the San Andreas Fault and the generally seismically active region, strong ground shaking is likely during the life of the structures, in particular, during a major seismic event on nearby faults. The

Project would comply with building standard including the Uniform Building Codes, California Building Codes, and the American Society of Civil Engineers 7-10, which minimize seismic safety risks associated with commercial construction in a seismically active area. Strong ground shaking would have less-than-significant impacts on Project site structures.

iii. **Seismic-Related Ground Failure – Less than Significant Impact.** Liquefaction is a soil behavior phenomenon in which soils lose internal strength and become fluid as a result of increased pore water pressure generated by seismic activity. The soils that are typically subject to liquefaction effects are saturated silts and sands of low to medium density that are free of clay.

CTS's Geotechnical Investigation Report for Site 2C stated that, based on the presence of shallow groundwater and strong ground shaking expected at the site, there is a moderate potential for liquefaction to occur as it is presented in the published data. Liquefaction induced settlements would impact structures at the surface with up to 3 inches of settlement. Liquefaction induced settlements are not expected to impact the basin improvements as they are founded and supported below the potentially liquefiable layers. CTS provided foundation design recommendations for surface structures that CTS indicates would be resistant to damage due to liquefaction settlements. These recommendations were incorporated into the EQ basin structural design, and as such, the liquefaction susceptibility of the Project would be less than significant.

iv. **Landslides – No Impact.** The Project would be located on level topography surrounded by residential and commercial properties. There, the Project area would have no impact associated with landslides.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. During Project construction activities, the construction areas would be subject to erosion; however, with preparation and implementation of the SWPPP, which is required for all construction projects disturbing 1 acre or more (further discussed in **Section 9, Hydrology and Water Quality**), the potential for substantial soil erosion or loss of topsoil would be less than significant.

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

Less than Significant Impact. Based on the boring logs provided in the Geotechnical Reports (CTS 2016a, b), the site is unlikely to be affected by lateral spreading, subsidence, or collapse. Offsite landslides reaching the EQ basin site, or as a result of the Project, are unlikely given the local terrain and geology. Liquefaction is addressed in **Subsection 6aiii**, above.

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

Less than Significant Impact. Due to the high groundwater table and the relatively low plasticity of the soils at the Project site, the potential risk associated with expansive soil to life or property, both onsite and offsite as a result of the project, would be less than significant.

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

No Impact. The Project would be connected to the City of Pacifica sanitary sewer system.

Mitigation Measures

None required.

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7. Greenhouse Gas Emissions	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

Existing Conditions and Project Setting

GHGs are atmospheric gases that capture and retain a portion of the heat radiated from the earth after it has been heated by the sun. The primary GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone, and water vapor. While GHGs are natural components of the atmosphere, CO_2, CH_4, and N_2O are also emitted from human activities, and their accumulation in the atmosphere over the past 200 years has substantially increased their concentrations. This accumulation of GHGs has been implicated as the driving force behind global climate change.

Human emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing associated with organic decay processes in agriculture, landfills, etc. Other GHGs, including hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, are generated by certain industrial processes. The global warming potential of GHGs are typically reported in comparison to that of CO_2, the most common and influential GHG, in units of "carbon dioxide-equivalents" (CO_2e).

There is international scientific consensus that human-caused increases in GHGs have and will continue to contribute to global warming. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity (California Climate Change Center 2012).

CARB estimated that in 2011, California produced 448 million gross metric tons of CO_2e, or about 535 million U.S. tons. CARB found that transportation is the source of 37.6 percent of the state's GHG emissions, followed by industrial sources at 20.8 percent and electricity generation (both in-state and out-of-state) at 19.3 percent. Commercial and residential fuel use (primarily for heating) accounted for 10.1 percent of GHG emissions (CARB 2014a).

In the San Francisco Bay Area, fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) and the industrial and commercial sectors are the two largest sources of GHG emissions, each accounting for approximately 36 percent of the San Francisco Bay Area's 95.8 million metric tons of CO_2e emitted in 2007. Electricity generation accounts for approximately 16 percent of the San Francisco Bay Area's GHG emissions followed by residential fuel usage at seven percent, off-road equipment at 3 percent and agriculture at 1 percent (BAAQMD 2010b).

Regulatory Setting

Greenhouse gas emissions are currently regulated at the State level. This section discusses the major State legislation or executive actions that regulate GHG emissions.

Executive Order S-01-07, enacted in 2007, mandated a Low Carbon Fuel Standard (LCFS) for transportation fuels sold in California.

Assembly Bill 32, the California Global Warming Solutions Act (CARB 2014b), requires the CARB to lower state GHG emissions to 1990 levels by 2020 – a 25 percent reduction statewide with mandatory caps for significant GHG emission sources. AB 32 directed CARB to develop discrete early actions to reduce GHG while preparing the Climate Change Scoping Plan in order to identify how best to reach the 2020 goal. In 2014, CARB approved the first update to the AB 32 Scoping Plan (CARB 2014) describing progress toward meeting the "near-term" 2020 GHG emission reduction goals, and identifying opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. Furthermore, the update defined CARB's climate change priorities for the next five years and set the groundwork to reach the long-term GHG reduction goals.

California Senate Bill 375, adopted in 2008: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

Executive Order B-30-15, which was signed by the Governor in 2015, established a California GHG reduction target of 40 percent below 1990 levels by 2030. On September 8, 2016, the California legislature passed SB 32, which requires CARB to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030. The bill noted that it would

become operative only if AB 197 is enacted and becomes effective on or before January 1, 2017. AB 197 was enacted the same day.

California Air Resources Board

Motivated by AB 32, the CARB estimated statewide GHG emissions in 2020 under business-as-usual (BAU) conditions (i.e., a scenario where no GHG reduction measures are taken) and identified a 28.5 percent reduction in GHG from year 2020 BAU levels as necessary to achieve the targets of AB 32. CARB has since updated the BAU forecast to reflect conditions in light of the 2008 economic downturn and measures not previously considered in the Scoping Plan baseline inventory. The revised forecast shows that a 21.6 percent GHG reduction from 2020 BAU would be necessary (CARB 2014c).

Statewide strategies to reduce GHG emissions include the LCFS, the California Appliance Energy Efficiency regulations, the California Renewable Energy Portfolio standard, changes in the motor vehicle corporate average fuel economy standards, and other early action measures that would ensure that the state is on target to achieve the GHG emissions reduction goals of AB 32.

California Green Building Standards Code

In January 2010, the State Building Standards Commission adopted updates to the California Green Building Standards Code (CALGreen), which went into effect in January 2011. CALGreen contains requirements for construction site selection, stormwater control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, and site irrigation conservation. CALGreen provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. CALGreen also requires building commissioning, which is a process for verifying that all building systems, like heating and cooling equipment and lighting systems, are functioning at their maximum efficiency. CALGreen provides the minimum standard that buildings need to meet in order to be certified for occupancy, but does not prevent a local jurisdiction from adopting more stringent requirements. CALGreen is intended to (1) reduce GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; and (3) reduce energy and water consumption (CBSC 2010).

City of Pacifica

The *City of Pacifica Climate Action Plan* (City of Pacifica 2014b) outlines the City's plan, along with statewide legislation and initiatives, to reduce GHG emissions by 35 percent below 2005 levels. There are no current policies in the 1980 General Plan; however, the Energy and Greenhouse Gas Section in Chapter 7, Conservation, of the Draft Pacifica General Plan (City of Pacifica 2016) that is currently being developed and undergoing review includes Guiding and Implementing Policies to reduce GHG emissions.

Study Methodology and Significance Criteria

GHG emissions are fundamentally a cumulative impact issue. No single development project would result in GHG emissions that would be great enough to affect global warming or climate change in isolation. However, cumulative global emissions could change the radiative balance of the atmosphere. Project-level effects in isolation would be less than significant. The analysis employed here is thus a cumulative impact analysis.

The BAAQMD is the primary agency responsible for air quality regulation in the nine-county San Francisco Bay Area Air Basin. As part of that role, the BAAQMD has prepared *CEQA Air Quality Guidelines* (BAAQMD 2011) that provide CEQA thresholds of significance for operational GHG emissions from land use projects (i.e., 1,100 metric tons of CO_2e per year, which is also considered the definition of a cumulatively considerable contribution to the global GHG burden and, therefore, of a significant cumulative impact), but has not defined thresholds for project construction GHG emissions. As described in **Section 3, Air Quality**, BAAQMD's adoption of significance thresholds contained in the 2011 CEQA Air Quality Guidelines was litigated and the outcome did not affect issues regarding use of significance thresholds to assess impacts from a project upon the environment. The *CEQA Air Quality Guidelines* methodology and thresholds of significance have been used in this Initial Study's analysis of potential GHG impacts associated with the Project.

Impact Discussion

Estimated GHG Project-related emissions during Project construction and operation would be less than significant.

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

Less than Significant Impact. The Project would have temporary construction emissions. The CalEEMod model (CAPCOA 2013) was used to quantify GHG emissions associated with Project construction activities. CalEEMod computes emissions for both onsite and offsite construction activities. Onsite activities are primarily made up of construction equipment emissions, while offsite activity includes worker, truck hauling, and vendor traffic. A construction build-out scenario, including equipment list and phasing schedule provided by the Project Team, was used in the modeling to predict on- and near-site construction emissions. Truck traffic inputs to the model included the approximately 2,794 truck trips used for soil off-hauling, equipment transportation, import of concrete and asphalt, and other various trips. GHG emissions were computed at 534 metric tons during the first construction year of 2017 and 93 metric tons the following year. The annual emissions would be well below the lowest project emission threshold considered by BAAQMD in their 2011 CEQA Air Quality Guidelines, which is 1,100 metric tons per year.

For operational impacts, the Project is anticipated to result in very few new traffic trips for maintenance and little or no other operational emissions (e.g., from stationary equipment). There would be some minor increase in electricity usage to power ventilation fans and pumps when the basin is actually used. These emissions would be well below the BAAQMD recommended thresholds of 1,100 metric tons per year. The BAAQMD CEQA Air Quality Guidelines screening project size for significant GHG emissions is identified at 121,000 square feet, which this project would be much smaller. Therefore, modeling of operational GHG emission was not conducted.

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

Less than Significant Impact. In May 2011, BAAQMD adopted its updated CEQA Guidelines that contain methodology and thresholds of significance for evaluating GHG emissions from proposed projects. The BAAQMD thresholds were developed specifically for the Bay Area after considering the latest Bay Area GHG inventory and the effects of AB 32 scoping plan measures that would reduce regional emissions. BAAQMD intends to achieve GHG reductions from new land use developments to close the gap between projected regional emissions with AB 32 scoping plan measures and the AB 32 targets. Because the Project would not create new regional vehicle or other substantial long-term GHG emissions, it would not conflict with any plan or policy intended to reduce long-term GHG emissions, including AB 32, SB 375 or local goals.

Mitigation Measures

None required.

References

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8. Hazards and Hazardous Materials	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☒	☐	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☒	☐	☐

8. Hazards and Hazardous Materials	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☒	☐
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Existing Conditions

The proposed EQ basin is located in a developed area, with the Skatepark and the Pacifica Community Center to the northwest and northeast, respectively, commercial properties to the east, and residential properties to the south. The EQ basin site currently consists of an asphalt-covered parking area with limited landscaping and sidewalks surrounding it. The 540 Crespi Drive property, which includes the EQ basin site, has been owned by the City since prior to 1980 (EDR 2016), and during that time it has been used solely for community recreation and open space. Prior to the City owning the building at 540 Crespi Drive, it was used for telecommunications operations by Pacific Telephone & Telegraph Company and AT&T Communications, Inc. No environmental liens or Activity and Use Limitations have been identified for the property (EDR 2016). Resource Conservation and Recovery Act hazardous waste generator identification numbers assigned to Pacific Telephone & Telegraph Company are associated with both the 540 Crespi Drive and 530 Crespi Drive addresses; however, DTSC records indicate that the identifications were inactivated in 1995, meaning that the site has not been a hazardous waste generator since that time. Based on a historical records search, a

4,000-gallon diesel underground storage tank (UST) was installed in 1971 at the 540 Crespi Drive address by AT&T Communications, Inc. (SWRCB 1988). The City does not have record of the UST's location within the 540 Crespi Drive property. The Project is located within the North County Fire Authority service area. The Cabrillo Elementary School is located approximately 500 feet east of the Project at 601 Crespi Street.

Hazardous materials, as discussed in this section, include both hazardous substances and wastes that appear on a federal, state, and/or local regulatory agency's list of hazardous materials, or those that have characteristics defined as hazardous by such an agency.

Impact Discussion

With management in accordance with federal, state, and local regulations, construction of the Project would create a less-than-significant impact to the public or environment.

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

Less than Significant with Impact Mitigation. Project construction would include excavation of subsurface materials for the installation of the EQ basin and the proposed pipelines. Subsurface soils excavated during construction could potentially be contaminated with hazardous substances from releases in the area, which could be a significant impact.

Terraphase reviewed available environmental databases maintained by the SWRCB (GeoTracker) for sites that have been impacted by leaking underground fuel tanks and non-fuel related cases, and DTSC (EnviroStor) for hazardous waste and hazardous substance sites. The research identified no active or closed contaminated sites within the Project footprint (DTSC 2016a and SWRCB 2016). The following sites were listed as closed sites in the GeoTracker database within the vicinity of the Project site (up to 2,000 feet) and would not be expected to present a direct impact on the Project site (SWRCB 2016): Gates Olympic (610 Crespi Drive), Former Shell Service Station (590 Crespi Drive), Dave and Lou's Service (505 Linda Mar Boulevard), Former Lion Oil Station (500 Linda Mar), Former Texaco (582 Linda Mar), and Chevron (576 Linda Mar).

Additionally, a 4,000-gallon diesel UST was installed at the 540 Crespi Drive address by AT&T Communications Inc. in 1971 (SWRCB 1988). It is unknown if the UST has been removed or if it remains onsite. The UST is not identified as a Leaking Underground Storage Tank Site on the GeoTracker database (SWRCB 2016a). In the event that the UST were still onsite and within the impact area of the Project, or that the soil had been contaminated due to leaks from the UST, this could result in a hazard to the public or the environment. Implementation of **Mitigation Measure HAZ-1**, including a utility survey and worker training on identification of contaminated soil and groundwater prior to the start of construction, would minimize the impact to a less-than-significant level.

While available data do not indicate that contaminated soil or groundwater would be expected, in the event that either contaminated soil or groundwater are encountered during excavation and dewatering activities, the impact to the environment (surface waters) or the public (workers) would be significant. Implementation of **Mitigation Measure HAZ-1**, including worker training on identification of contaminated soil and groundwater prior to the start of construction, would minimize the impact to a less-than-significant level.

Hazardous materials such as fuels, oils, paints, and solvents would be transported, used, and disposed of (offsite) during Project construction. For hazardous materials or mixtures containing a hazardous material that would be stored at the Project at any one time during the reporting year that is equal to or greater than the quantities defined under the California HSC (Section 25507; i.e., 55 gallons for liquid hazardous materials, 500 pounds for solid hazardous materials, and 200 cubic feet for compressed gas), a Hazardous Material Business Plan (HMBP) would be prepared and submitted to the Certified Unified Program Agency (CUPA; San Mateo County Environmental Health Department). In accordance with California Health and Safety Code §25510, a release or threatened release of hazardous materials to the environment must be reported immediately to the CUPA and the California Office of Emergency Services State Warning Center. Workers who handle hazardous materials are required to adhere to Occupational Safety and Health Administration (OSHA) and California OSHA (Cal/OSHA) health and safety requirements. Improper storage or use of these materials could create a significant impact to the environment. Implementation of **Mitigation Measure HAZ-2**, including identification and inclusion of appropriate and effective BMPs in the SWPPP, would reduce the risk of release to a less-than-significant level.

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

Less than Significant Impact with Mitigation. During construction, the contractor would use and/or store hazardous materials such as diesel, lubricants, paint, and solvents, at the EQ basin site and along the pipeline alignment. As discussed in **Subsection 8a**, the Project would be required to prepare an HMBP if the quantity of stored hazardous materials exceeded reportable thresholds. The accidental release of hazardous materials during project construction and operation activities could pose a significant threat to human health or the environment. However, project construction and operations would not create significant hazards to the public or environment with implementation of **Mitigation Measures HAZ-1 and HAZ-2**, including worker training on identification of contaminated soil and groundwater prior to the start of construction, and identification and inclusion of appropriate and effective BMPs in the SWPPP.

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

Less than Significant Impact with Mitigation. The only school within one-quarter mile of the Project site is Cabrillo Elementary School (601 Crespi Drive) which is located approximately 500 feet east of the Project site.

Potential sources of exposure to hazardous material emissions would include:

- Airborne nuisance dust during earthwork;
- Airborne contaminants during the excavation of soil if subsurface contamination were encountered;
- DPM emissions from idling or operating construction vehicles (duration is limited by **Applicant Proposed Measure APM-1**, which identifies requirements for reduced emissions equipment); and
- Use of hazardous materials which would be used and temporarily stored at the Project site (EQ basin and along the pipeline alignments) during construction. Hazardous materials that would be used and stored would include diesel fuel, oils, paints, and solvents. In the event of a spill, hazardous materials would have the potential to impact the environment.

The primary risk of hazardous material exposure to the school would be DPM emissions from construction equipment during the construction of the Project, as described in **Subsection 3d**. With implementation of **Applicant Proposed Measure APM-1**, including requirements for reduced emissions equipment, the impact would be less than significant.

O&M of the EQ basin or the underground conveyance pipeline would not result in the use, storage, transportation, or disposal of significant quantities of hazardous materials at the Project site. The Project design includes odor control using GAC.

With implementation of **Mitigation Measures HAZ-1** and **HAZ-2**, the potential impacts associated with hazardous materials used during construction would be less than significant.

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

Less than Significant. The Project site is not included on the DTSC's Cortese List, which includes sites listed in the Hazardous Waste and Substances EnviroStor database (DTSC 2016a), Leaking Underground Storage Tank Sites from the GeoTracker database (SWRCB 2016a), the RWQCB's list of solid waste disposal sites with waste constituents above hazardous waste levels outside of the management unit (SWRCB 2016b), "active" CDOs and Cleanup and Abatement Orders (CAOs) sites (SWRCB 2016c), and hazardous waste facilities subject to corrective action pursuant (as per Government Code Section 65962.5; DTSC 2016b). The Project, however, is proposed as a

mitigation to the SSOs identified in CDO R2-2011-0031, which is on the "active" CDOs and Cleanup and Abatement Orders (CAOs) sites list.

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

Less than Significant Impact with Mitigation. The Project is not located within an airport land use plan or within 2 miles of a public airport or public use airport. The Project is approximately 6 miles west of the San Francisco International Airport (SFO; Google Earth 2016), and is, therefore, outside of SFO's Safety Compatibility Zones, which establish land use compatibility standards to restrict the development of land uses that could pose particular hazards to the public or to vulnerable populations in case of an aircraft accident (Ricondo 2012). Additionally, the trigger for the Federal Aviation Administration (FAA) Notification Requirements for the Project vicinity is structures exceeding 200 feet above ground level. The few aboveground structures to be constructed at the Project would be a maximum of 14 feet in height with a 4-foot antenna; therefore, FAA Notification Requirements do not exist as they relate to the proximity of SFO (Ricondo 2012).

The Project is approximately 5 miles north of the Half Moon Bay Airport, and is therefore outside of the designated airport land use compatibility plan, which consists of land within 2 miles of the boundary the airport (Coffman 2014).

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

Less than Significant. The Project site is not located within the vicinity of a private airstrip (Google Earth 2016). The closest private airport is the Half Moon Bay Airport, which is approximately 5 miles away from the Project.

g) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant. The Project would predominantly consist of short-term construction activities with minimal long-term maintenance and cleaning activities. The City's multi-jurisdictional emergency plan (ABAG 2010) focuses on preparedness for natural disasters, including earthquakes, fires, floods, tsunamis, and landslides, as well as airline crashes. As discussed in **Section 16, Transportation and Circulation**, the traffic impacts following construction would be minor and intermittent. Short-term construction traffic would adhere to the Construction Management Plan and associated Traffic Control Plan, which would minimize traffic impacts to maintain accessibility of emergency routes. The Project would have a less-than-significant impact on the City emergency response or evacuation plans.

h) Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less than Significant. The Project is located in a developed area that abuts wildland vegetation, and is characterized by ABAG as a Wildland-Urban Interface (WUI) area (ABAG, Fire Threat Maps). This definition does not explicitly account for differences in fire risk. The proposed equalization basin and pipelines would be located underground, and would not include any habitable structures. The Project would include the use of welding equipment and other equipment that can generate sparks. Workers using these types of equipment are required to adhere to OSHA and Cal/OSHA health and safety requirements, including fire protection and prevention measures (29 CFR 126 Subpart F) and hot work standards (29 CFR 126 Subpart J). Through compliance with construction industry safety OSHA and Cal/OSHA requirements, the Project would not increase the risk of wildfire.

Mitigation Measures

HAZ-1 The City shall ensure that:

(a) The construction contractor (or designee) shall conduct a private utility survey for the presence of underground utilities, fill pipes, and USTs prior to excavation within the Skatepark parking lot area, areas of the proposed jacking and receiving pits, and along the proposed locations of the influent and effluent conveyance pipelines. In the event that a UST is identified within the excavation boundaries, the City shall contact an environmental consultant who shall perform and/or coordinate the investigation for the presence of contamination in accordance with applicable regulations. A report of the findings of the geophysical survey shall be submitted to the City's Construction Manager and City's Public Works Department liaison.

(b) The construction contractor shall require that site workers be trained in identifying contaminated soil and/or groundwater. In the event that contaminated soil or groundwater is encountered (either visually or through odor detection) during excavation activities, the construction contractor shall follow the procedures below:

- Stop work in areas with suspected contamination;
- Immediately report observations to the City's Construction Manager;
- Contact an environmental consultant, who shall perform and/or coordinate the investigation of suspected contamination in accordance with applicable regulations.

(c) If necessary, based on the findings of the environmental consultant, the City's Public Works Department shall notify San Mateo County Environmental Health Department, San Francisco Bay RWQCB, and/or the California DTSC.

(d) If investigation confirms presence of contamination, the environmental consultant shall perform and/or coordinate appropriate site investigation and cleanup procedures in accordance with regulatory requirements, including the appropriate segregation and disposal of contaminated soil and groundwater. Once the extents of the contamination have been delineated and the contaminated materials (i.e., soil and/or groundwater) have been excavated or otherwise remediated (e.g., in-situ treatment), ground-disturbing activities shall continue.

HAZ-2 The selected contractor shall be required to use BMPs to minimize the potential for releases of hazardous materials to groundwater, surface water, and soil. The BMPs shall be outlined in the Work Plan prepared by the contractor and provided to the City's Construction Manager, as well as the SWPPP, as required under the SWRCB CGP. The Work Plan shall include BMPs that accomplish the following:

- Discussion of methodology and available technology for waste management and materials pollution control, as well as other construction-related activities.
- Include provisions for training the site workers on the proper storage and handling of hazardous substances, such as fuels, lubricants, paints, and solvents. Training logs shall be provided to the City regularly.
- A process for responding to, and tracking, complaints pertaining to construction activity, including identification of a City's consultant Construction Manager. The Construction Manager shall determine the cause of the complaints and shall take prompt action to correct the problem. Planning and Zoning shall be informed who the Construction Manager is prior to the issuance of the first permit issued by the City's Building Department.
- Provision for accommodation of pedestrian flow and prevention of any unauthorized personnel entering the construction zone or material and equipment storage areas.
- Prior to construction, a portable toilet facility and a debris box shall be installed on the site and properly maintained through project completion.

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9. Hydrology and Water Quality	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?)	☐	☒	☐	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or offsite?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or offsite?	☐	☐	☒	☐

9. Hydrology and Water Quality	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☒	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j) Expose the site to inundation by seiche, tsunami, or mud flow?	☐	☐	☒	☐

Existing Conditions and Project Setting

The Project site includes the Skatepark and Community Center (located at 540 Crespi Drive), including their respective parking lots, on the east side of SR-1 and segments along Anza Drive (at the intersection with Balboa Way), Balboa Way (between Anza Drive and Arguello

Boulevard), Arguello Boulevard (between Balboa Way and De Solo Drive), and De Solo Drive (between Arguello Boulevard and Linda Mar Boulevard), where utility work is proposed. The proposed EQ basin would be constructed within the footprint of the Skatepark's existing parking lot, which is located southeast of the Skatepark. The proposed EQ basin property is owned by the City, zoned for Controlled Manufacturing, and is identified as Public Facilities in the City's General Plan (City of Pacifica 1980a).

The proposed EQ basin construction site is bounded by open space areas to the east and west, residential parcels approximately 80 feet to the southwest, and the Skatepark and Community Center complex to the northwest and northeast, respectively. There is an open, vegetated drainage swale between the southeastern end of the parking lot and the nearby residences.

The footprint of the Skatepark's existing parking lot is approximately 0.52 acre. The existing parking lot is asphaltic concrete-paved with concrete curb defined landscape zones in the parking lot, and the parking lot has a formal storm drainage system. The Skatepark's parking lot would be restored as part of the final phase of construction.

The proposed Project construction disturbance footprint includes a surface area of approximately 1 acre required to support parking lot demolition and re-construction, pipeline construction, and additional construction activities in the area northeast of the parking lot. The vast majority of the construction area currently consists of impervious surfaces (buildings, parking lot, walkways, and asphalt). The proposed Project area elevation ranges from approximately 10 to 17 feet above mean sea level (NAVD88).

The proposed EQ basin and associated pipelines would be constructed and utilized to mitigate storm-related SSOs in the City's wastewater collection system and reduce peak wet weather flows to the City's Calera Creek Water Recycling Plant.

Regulatory Setting

NPDES Construction General Stormwater Permit

Construction sites disturbing 1 acre or more are required to obtain coverage under the NPDES CGP for Discharges of Storm Water Associated with Construction Activity (CGP Order 2009-0009-DWQ). As the Project would include construction, access, and staging areas that would disturb 1 or more acres of land, the Project would be subject to the CGP. The CGP requires the development and implementation of a SWPPP, containing a site map which shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the Project. The SWPPP must evaluate and identify the BMPs the Project contractor would use to protect stormwater runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs, and a

sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Before construction activities start, the Legally Responsible Person (LRP) must electronically submit the permit registration documents to the SWRCB. The permit registration documents include a Notice of Intent, Risk Assessment, Post-Construction Calculations, a Site Map, the SWPPP, a signed certification statement by the LRP, and the first annual fee.

The SWPPP must be designed to address the following objectives:

1. All pollutants and their sources, including sources of sediment associated with construction, construction site erosion, and all other activities associated with construction activity, are controlled;

2. Where not otherwise required to be under an RWQCB permit, all non-stormwater discharges are identified and either eliminated, controlled, or treated;

3. Site BMPs are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity to the Best Available Technology Economically Achievable/Best Conventional Pollutant Control Technology (BAT/BCT) standard;

4. Calculations and design details as well as BMP controls for site run-on are complete and correct, and

5. Stabilization BMPs are installed to reduce or eliminate pollutants after construction is completed.

New Development and Redevelopment Requirements – C.3

Stormwater discharges in Pacifica are permitted under RWQCB Order No. R2-2009-0074, NPDES Permit No. CAS612008 (RWQCB 2009) – the Municipal Regional Permit (MRP) for the Bay Area. Section C.3 of the permit (New Development and Redevelopment) requires that local agencies use their planning authorities to include appropriate site design measures, source control measures, and low-impact development (LID) stormwater treatment measures in new development and redevelopment projects to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. The MRP requires that where a redevelopment project results in an alteration of more than 50 percent of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project). Discharges are also subject to *The Water Quality Control Plan for the San Francisco Bay Basin* ("the Basin Plan"), the RWQCB's master water quality control planning document. It designates beneficial uses and water quality objectives

(WQOs) for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve WQOs. The Basin Plan was duly adopted by the RWQCB and approved by the SWRCB, the Office of Administrative Law, and U.S. EPA.

City of Pacifica Municipal Stormwater Requirements

Per Section 6-12.205 titled "Reduction of pollutants in storm water" for the City in "Municipal Permitting and Code Information" (San Mateo Countywide Water Pollution Prevention Program 2016), any person engaged in activities which would or may result in pollutants entering the City storm sewer system shall undertake all practicable measures to reduce such pollutants. The following minimal requirements shall apply:

1. Littering. No person shall throw, deposit, leave, maintain, keep, or permit to be thrown, deposited, placed, left, or maintained, any refuse, rubbish, garbage, or other discarded or abandoned objects, articles, and accumulations, in or upon any street, alley sidewalk, storm drain, inlet, catch basin, conduit or other drainage structures, business place, or upon any public or private lot of land in the City, so that the same might be or become a pollutant, except in containers or in lawfully established dumping grounds. The occupant or tenant, or in the absence of occupant or tenant, the owner, lessee, or proprietor of any real property in the City in front of which there is a paved sidewalk shall maintain said sidewalk free of litter to the maximum extent practicable. No person shall throw or deposit litter in any pond, lake, ocean, stream, or any other body of water within the City.

2. Standard for parking lots and similar structures. Persons owning or operating a parking lot, gas station pavement, or similar structure shall clean those structures as frequently and thoroughly as practicable in a manner that does not result in discharge of pollutants to the City storm sewer system.

3. BMPs for new developments and redevelopments. Any construction contractor performing work in the City shall provide filter materials at the catch basin to retain any debris and dirt flowing into the City's storm sewer system. The City may establish controls on the volume and rate of stormwater runoff from new developments and redevelopments as may be appropriate to minimize the discharge and transport of pollutants.

4. Compliance with BMPs. Where BMP guidelines or requirements have been adopted by the City for any activity, operation, or facility which may cause or contribute to stormwater pollution or contamination, illicit discharges, and/or discharge of non-stormwater to the storm system, every person undertaking such activity or operation, or owning or operating such facility, shall comply with such guidelines or requirements as may be identified by the Environmental Services Manager.

Per the City's Stormwater Compliance Program (City of Pacifica 2016a), during Development Review, local agencies require projects to include stormwater controls, including site design

measures, source controls, treatment measures, low impact development, hydromodification management and construction BMPs as described below. Many of these requirements have existed for years and are unchanged.

Stormwater treatment measures are engineered systems that remove pollutants before stormwater reaches the storm drain system and ultimately the Pacific Ocean and local creeks and streams. Examples of stormwater treatment measures include:

- Bioretention Areas/Rain Gardens
- Flow-through Planters
- Vegetated Swales

Starting in 2006 and before December 2011, projects that create and/or replace 10,000 square feet or more of impervious surface have required hydraulically sized, post-construction stormwater treatment measures. Beginning December 1, 2011, new stormwater treatment requirements, as described below, went into effect.

Effective December 1, 2011, stormwater treatment requirements must be met, using the following LID methods:

- Evapotranspiration,
- Infiltration,
- Rainwater Harvesting and Reuse, or
- Where this is infeasible: Landscaped-based treatment measures with under-drains may be used.

Beginning on December 1, 2011, the threshold for requiring stormwater treatment dropped from 10,000 square feet to 5,000 square feet or more of impervious surface for the following project categories:

- Uncovered Parking Areas (stand-alone or part of another use)
- Restaurants
- Auto Service Facilities
- Retail Gasoline Outlets

Impact Discussion

The Project with recommended mitigation incorporated would result in less-than-significant water quality impacts during construction and operational activities.

a) Would the project violate any water quality standards or waste discharge requirements?

Less than Significant Impact with Mitigation.

General Construction

Project construction would involve demolition, earthwork, trenching, and dewatering associated with construction of new improvements on the Project site. These activities could expose site soils to erosion during precipitation events and have the potential to adversely influence stormwater runoff quality. Because the Project area is greater than 1 acre, the prime contractor building the Project would be responsible for developing and implementing the SWPPP, including maintaining BMPs throughout the construction period and compliance with the post-construction requirements presented in Section XIII of the CGP. Pollutant concentrations in site runoff are dependent on a number of factors, including land use conditions, site drainage conditions, intensity and duration of rainfall, the climatic conditions preceding the rainfall event, and implementation of water quality BMPs. Due to the variability of runoff characteristics, it is difficult to estimate pollutant loads for stormwater runoff. However, pollutants typical of construction sites include sediment, oil and grease, petroleum hydrocarbons, and metals. Without proper preparation and implementation of the SWPPP, Project construction could contribute to the levels of stormwater pollutants and litter entering the Pacific Ocean, potentially having adverse effects on aquatic life and human health.

Dewatering

Dewatering operations are practices that manage the discharge of pollutants when non-stormwater or accumulated precipitation must be removed from a work location so that construction work may be accomplished. Typical sources of non-stormwaters that are dewatered from construction sites include, but are not limited to, groundwater, water from cofferdams, water diversions, and waters used during construction activities that must be removed from a work area. Each of the nine RWQCBs, which regulate dewatering operations through the NPDES permit program, has the authority to define the types of dewatering effluent and dewatering system that would be acceptable as regulated under an NPDES permit within its Region.

As discussed in the **Project Description**, a temporary dewatering system would be used during the construction of the EQ basin due to near-surface groundwater levels at the site. It is anticipated that extracted groundwater would be discharged to the City's sanitary sewer system. The City is currently evaluating the groundwater quality to determine if it would meet acceptance criteria for the Calera Creek Water Recycling Plant. If the acceptance criteria are

met, the City would obtain a Temporary Groundwater Contamination Cleanup Discharge Permit[6] from the Public Works Department and the extracted groundwater would be discharged to the City's sanitary sewer. In the event that the groundwater cannot be accepted by the Calera Creek Water Recycling Plant, a NPDES permit would be required to discharge the extracted groundwater to the storm drain system.

Regardless of the discharge location (sanitary sewer or storm drain system), a dewatering plan would be required to ensure that applicable permit conditions (sewer district criteria or NPDES water quality parameters) are addressed and to ensure that local temporary groundwater withdrawal impacts are minimized.

The CGP governs water quality compliance for covered construction or demolition activities that occur on project sites having equal to or greater than 1 acre of land surface disturbance. While not anticipated, if extracted groundwater would be discharged to the storm drain system, this would be considered authorized non-stormwater if managed in accordance with an approved Dewatering Plan. Dewatering operations that result in discharges to storm drains, surface water or to the land are regulated under state requirements for stormwater pollution prevention and control. Unpermitted discharge of non-stormwater from an excavation that contains sediments or other pollutants to sanitary sewer, storm drain system, creek bed (even if dry), or other receiving water is prohibited. Discharge of uncontaminated groundwater from dewatering may be conditionally exempted by the RWQCB. However, the removed water could potentially be contaminated with chemicals released from construction equipment or sediments from excavation. Therefore, disposal of dewatering discharge would require permits either from the RWQCB for discharge to surface creeks, storm drains and groundwater or from local agencies for discharge to sanitary sewers. Discharge of water resulting from dewatering operations would require an NPDES Permit, or a waiver (exemption) from the San Francisco RWQCB, which would establish discharge limitations for any specific chemicals known to existing in the dewatering flows. If substantial construction dewatering is required and disposal would be to land or surface water, a Waste Discharge Requirement (WDR) permit must be obtained from the RWQCB. The WDR would specify the specific treatment (e.g., de-sedimentation, filtration, flocculation, etc.) and discharge (e.g., maximum rate and volume of discharge) requirements, if any, necessary to ensure discharges do not cause or contribute to water quality degradation. The WDR would require testing to make sure that discharged waters do not pose a substantial risk to water quality.

A WDR permit would be required from the San Francisco RWQCB for construction dewatering activities and the WDR permit would require testing to ensure that discharged water did not

[6] Note: This permit type is typically issued for contamination cleanup sites which are extracting and treating contaminated groundwater on a temporary basis. Although the Project groundwater is not anticipated to be contaminated, this discharge permit is the applicable permit issued by the City for construction-related groundwater dewatering discharges to the City's sanitary sewer system for treatment at the Calera Waste Water Treatment Plant.

pose a risk to water quality. Dewatering would not continue after construction; therefore, long-term effects on the groundwater depth or volume are not anticipated.

During dewatering, if dewatering discharges are directed to the sanitary sewer, a Dewatering Plan would be needed to ensure that applicable sewer district criteria are addressed and that local temporary groundwater withdrawal impacts are minimized. Alternatively, if dewatering discharges are discharged to the storm drain system, a Dewatering Plan would need to be followed, and extracted groundwater would likely require treatment to reduce the potential for water quality impacts to the receiving body of water. With implementation of **Mitigation Measure HYDRO-1,** requiring the development and implementation of a dewatering plan, the potential impacts from dewatering activities would be less than significant.

As discussed under **Regulatory Setting** above, the MRP for the Bay Area requires that local agencies include appropriate site design measures, source control measures, and LID stormwater treatment measures in new development and redevelopment projects to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. In accordance with the C.3 Stormwater Technical Guidance (San Mateo Countywide Water Pollution Prevention Program 2013), the City would prepare a Stormwater Management Plan submittal. The plan must confirm that the project would meet the hydraulic sizing criteria in Section 5.1 of the technical guidance.

The proposed Project would be constructed and utilized to mitigate SSOs in the City's wastewater collection system and reduce peak wet weather flows to the City's Calera Creek Water Recycling Plant, which would in turn improve water quality.

With implementation of **Mitigation Measure HYDRO-1**, which requires the development and implementation of a dewatering plan, the Project would have a less-than-significant impact with regard to water quality.

b) Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?)

Less than Significant Impact with Mitigation. The Skatepark's existing parking lot would be restored as part of the final phase of construction. The completed parking lot would be located within the existing parking lot footprint. The parking lot landscaping would be reconfigured and bioretention areas would be added, which would result in an increase in pervious area of the Project site.

Based on numerous measurements of depth to groundwater collected from a piezometer that was installed in the Skatepark parking lot, the groundwater elevation in the vicinity of proposed EQ basin site is at 3 feet below the site grade. The proposed depth of soil excavation to approximately 45 feet below ground surface would require temporary dewatering at the interior of the excavation, which may decrease groundwater levels temporarily in surrounding areas during the construction period. In accordance with **Mitigation Measure HYDRO-1**, the Project would be required to prepare a Dewatering Plan in coordination with the RWQCB.

Therefore, localized groundwater levels below the site in the vicinity surrounding the proposed excavation could be lowered during the construction period due to groundwater extraction. Groundwater dewatering has the potential to result in both localized groundwater lowering and potential geotechnical impacts (ground settlement) in addition to potential impacts associated with groundwater dewatering discharges and contamination. In accordance with **Mitigation Measure HYDRO-1**, the general contractor shall develop a dewatering plan and obtain any necessary permits for performing dewatering; the dewatering plan would need to include methods to manage the potential environmental impacts that dewatering activities might have. Monitoring of groundwater levels perpendicular to the proposed excavation zone would be required to verify the assumptions used to calculate potential settlements. The plan shall contain contingency measures to address situations where water resource impacts or excessive settlements would occur. Potential dewatering impacts would require further evaluation and the development of an appropriate dewatering plan that includes measures and a contingency plan to ensure that dewatering activities would be managed and controlled in a manner to avoid significant impacts. With implementation of **Mitigation Measure HYDRO-1**, the Project would have a less than significant impact with regard to proposed groundwater extraction activities.

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

Less than Significant Impact. The construction phase of the Project would entail re-grading and associated earthwork, including excavation for the EQ basin and pipelines. This could affect the quality of runoff and result in potential pollution of the Pacific Ocean. Soil erosion, siltation, and sedimentation would be mitigated by development of a project-specific SWPPP and the implementation of appropriate erosion and sediment control measures in accordance with the SWRCB CGP. Typical control measures include the installation of silt fences, fiber rolls, sediment traps/basins, and stabilization of disturbed soils.

There are no water courses within the boundaries of the Project and the construction activities would not result in the alteration of the course of a stream or river. Development of the Project would result in modifications to the existing site surface and result in minor changes to onsite drainage patterns. Significant adverse alterations to existing drainage patterns in the surrounding area are not expected.

Upon project completion of construction, stormwater runoff would be collected in the parking lot and diverted bioretention areas for treatment prior to discharge, in conformance with MRP Section C.3 stormwater control and treatment requirements. As discussed in the Project Description, in order to avoid potentially significant long-term stormwater quality impacts, the Project would implement design recommendations of the C.3 Stormwater Technical Guidance and would demonstrate compliance with the MRP Section C.3 requirements and associated BMP design and sizing criteria by providing approved hydraulic sizing calculations for all proposed post-construction BMPs (e.g., bioretention basins).

If heavy precipitation were to occur during Project construction, there is the potential for some siltation to occur within and/or directly adjacent to the Project site; however, through compliance with the SWRCB CGP (i.e., development and implementation of a project-specific SWPPP), potential siltation and erosion impacts would be less than significant.

The Project would have a less-than-significant impact with regards to substantial erosion or siltation on- or offsite.

d) Would the project substantially alter the existing drainage pattern of the site area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or offsite?

Less than Significant Impact. The construction phase of the Project would entail re-grading and associated earthwork, including excavation for the EQ basin and pipelines. The amount of impervious area would be the same or would slightly decrease during excavation and re-grading of the restored parking lot and roads, so the amount of runoff would be the same or slightly decreased. Three existing storm drain inlets would be removed, and the proposed parking lot grades would be established to generate sheet flow runoff along the perimeter of the EQ basin and parking lot surface and diverted to and treated via bioretention areas. The proposed bioretention areas would result in an increase in pervious area compared to existing conditions.

The proposed Project would be constructed and utilized to mitigate SSOs in the City's wastewater collection system and reduce peak wet weather flows to the City's Calera Creek Water Recycling Plant. Upon completion of the Project, it is expected that the runoff from the reconstructed Skatepark parking lot would be the same or slightly less than existing conditions, and no additional flooding is expected on- or offsite. Upon completion of the Project, the runoff from the areas in which influent and effluent pipelines were constructed (i.e., in public rights-of-way and easements) would be unchanged. No streams or rivers would be altered.

The project would have a less-than-significant impact with regards to flooding on- or offsite.

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

Less than Significant Impact. Project construction would result in surface soil disturbance associated with site grading activities. There are no water courses within the boundaries of the Project and the construction activities would not result in the alteration of existing drainage patterns. The quality of site runoff may be temporarily affected by site construction activities; however, these impacts would be offset by the development and implementation of a project-specific SWPPP. The long-term rate and volume of surface water runoff at the site would be decreased by the Project due to an increase in pervious area and improved ability to store more water and prevent overflows; see above discussion under **Subsections 9a-9d**.

Construction-Period Impacts

Project grading and excavation would temporarily disturb surface soils. During the construction period, grading and excavation activities would result in exposure of soil to runoff, potentially causing erosion and entrainment of sediment in the runoff. Soil stockpiles and excavated areas on the Project site would be exposed to runoff and, if not managed properly, the runoff could cause erosion and increased sedimentation in water courses near the Project site. The accumulation of sediment could result in blockage of flows, potentially resulting in increased localized ponding or flooding. There is the potential for chemical releases during construction activity. Once released, substances such as fuels, oils, paints, and solvents could be transported to nearby surface waterways and/or groundwater in stormwater runoff, wash water, and dust control water, potentially reducing the quality of the receiving waters, which is considered a potentially significant impact. Through compliance with the CGP (i.e., development and implementation of a project-specific SWPPP), water quality impacts caused by construction activities would be reduced.

Post-Construction Operation-Period Impacts

The restored parking lot grades would be established to generate sheet flow runoff along the parking lot surface and divert the flow to the perimeter of the EQ basin to two bioretention areas at the southern end of the parking lot. Upon Project completion, stormwater would be collected in the parking lot and would be treated in the bioretention areas prior to discharge, in conformance with stormwater control and treatment requirements.

The proposed Project would be constructed and utilized to mitigate SSOs in the City's wastewater collection system and reduce peak wet weather flows to the City's Calera Creek Water Recycling Plant. There would be no substantial additional polluted runoff. Potential impacts from operation of the Project on the capacity of storm drains would be less than significant.

As discussed in the **Project Description** and **Regulatory Setting,** above, the MRP for the Bay Area requires that local agencies include appropriate site design measures, source control measures, and LID stormwater treatment measures in new development and redevelopment projects to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. Through compliance with the MRP Section C.3 requirements, the Project would have less-than-significant impact with regards to the capacity of existing or planned stormwater drainage systems and with regards to substantial additional sources of polluted runoff.

f) Would the project otherwise substantially degrade water quality?

Less than Significant Impact with Mitigation. See **Subsections 9a-9e** above. With the implementation of Mitigation Measure HYDRO-1, the Project is not anticipated to result in any substantial degradation to water quality.

g) Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No impact. There is no housing proposed on the Project site; therefore, the Project would have no impact with regards to housing within a 100-year flood hazard area.

h) Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Less than Significant Impact. The southern part of the Community Center property, including the existing Skatepark parking lot, and the influent pipeline alignment are located within the Special Flood Hazard Zone AH,[7] which is a FEMA 100-year flood plain (FEMA 2012). Proposed site improvements, including site grading and construction of the MCC Building and Odor Control System, are not anticipated to result in additional displacement of flood flows associated with the 100-year event, as the overall grade following the installation of the EQ basin would be similar to the existing grade. The elevation at the northern portion of the parking lot would be slightly higher than the existing grade and would slope to the south, where the elevation would be slightly lower than existing grade. In addition, the two proposed bioretention areas would increase the pervious area of the site, thereby allowing for greater infiltration during storm events. The elevation along the pipelines would not be changed from existing conditions. The Project would have a less-than-significant impact with respect to the placement of proposed structures which would impede or redirect flood flows within a 100-year flood hazard area.

[7] Special Flood Hazard Zone AH is a special flood hazard area subject to inundation by the 1% annual chance flood (also known as the 100-year flood). Flood depths in Zone AH are estimated to be 1 to 3 feet (usually areas of ponding).

i) Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Less than Significant Impact. The Project site is not within the mapped inundation zone of any regulated dam and the likelihood of a significant flood associated with the failure of a levee or dam is low. The Project would not cause or contribute to a levee or dam failure and is not anticipated to expose people or structures to a significant risk associated with flooding as a result of the failure of a levee or dam.

j) Would the project expose the site to inundation by seiche, tsunami, or mud flow?

Less than Significant Impact. No mitigation required. While the Project is located in a tsunami inundation zone (California Emergency Management Agency, et al. 2009), the construction and operation of the Project would not increase exposure of the Project site or neighboring sites to impacts from a tsunami. Furthermore, the proposed Wet Weather Flow Equalization Basin would provide significant additional storage capacity for wet weather flows which would reduce flooding impacts associated with a tsunami relative to current existing conditions. There are no water bodies uphill of the site capable of generating a significant seiche, and any seiche generated in the Pacific Ocean will not reach the Project site at its elevation above sea level. USGS (1997) does not map the site as being in an area susceptible to debris flow slides (mud slides).

Mitigation Measures

HYDRO-1 The general contractor shall develop a dewatering plan and obtain any necessary permits for performing dewatering. The dewatering plan shall include methods to manage the potential environmental impacts that dewatering activities might have. The dewatering plan shall include the following at a minimum:

- a pre-dewatering topographic survey with a minimum vertical accuracy of 0.01 foot (if the existing site topographic survey already prepared for design purposes provides a minimum vertical accuracy of 0.01 foot, this survey can be utilized and an additional topographic survey would not be required);
- a photographic survey of structures and flatwork in the surrounding area documenting any pre-dewatering damage to the structures or flatwork, including measurements of the widths and lengths of any significant cracks in the structures or flatwork;
- pre-construction evaluation of required groundwater extraction rates and volumes, calculation of the radius of influence of the dewatering wells/sumps and anticipated settlements as a function of distance from the excavation;

- measures to address situations where water resource impacts or excessive settlements are occurring.

Monitoring of groundwater levels perpendicular to the proposed excavation zone shall be required to verify the assumptions used to calculate potential settlements.

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San Mateo Countywide Water Pollution Prevention Program. 2016. Municipal Permitting and Code Information. Website: http://flowstobay.org/files/greenstreets/localcodes.pdf. Information retrieved on August 12.

SWRCB. 2009. National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ, NPDES NO. CAS000002. September 2. (Amended February 14, 2011 and July 17, 2012).

USGS. 1997. San Francisco Bay Region Landslide Folio, Part E (Debris Flow Source Maps) Open−File Report 97−745 E Sheet 7 of 11.

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

Existing Conditions

The Project is located in the West Linda Mar Land Use Area. The proposed EQ basin site (zoned M-1) is surrounded by residential area to the south, commercial development to the north and east, and SR-1 and Pacific State Beach to the west. The pipeline alignment would traverse the residential area (zoned R-1) to the south of the EQ basin site.

Impact Discussion

The Project would neither increase or decrease the intensity of use at the Project site in comparison with existing conditions. The land use would be the same before and after the Project.

a) Would the project physically divide an established community?

Less than Significant. During construction, operations would be conducted to minimize interference with roads, walks, and other adjacent occupied or operations facilities. Road closures are not anticipated during construction; however, should road closures be required,

local emergency service providers would be informed of road closures and length of closure at least 48 hours prior to road closures (discussed in **Section 14, Public Services**).

Once complete, the Project would not affect physical access on nearby streets and sidewalks, nor would it extend beyond the EQ basin site's current property boundaries.

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

No Impact. The Project is consistent with the General Plan (City of Pacifica 1980a). The General Plan Community Facilities Element (updated in 1982) identifies concerns by the RWQCB regarding the capacity of the wastewater system to accommodate wet weather flows. The General Plan identifies the potential need to either reduce I/I or increase treatment plant capacity. As discussed in the **Project Description**, the Project was developed in accordance with the findings of the Master Plan (RMC 2011) to meet specific Sewer System Management Plan requirements, as well as to develop a long-term plan for rehabilitation, replacement, and capacity improvements to its system.

The Project would not significantly impact visual resources following construction period (as discussed in **Section 1, Aesthetics**).

The Project would be in accordance with the zoning designations for the EQ basin site (zoned as M-1), and the pipeline alignment areas (zoned as R-1; City of Pacifica 2001b).

c) Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. The Project would not conflict with any applicable habitat conservation plan or natural community conservation plan, as none of these plans apply to the Project areas.

Mitigation Measures

None required.

References

City of Pacifica. 1980a. City of Pacifica General Plan.

City of Pacifica. 1980b. City of Pacifica Local Coastal Land Use Plan.

_____. 2001b. City of Pacifica Zoning Map. http://www.cityofpacifica.org/civicax/filebank/blobdload.aspx?blobid=3407

RMC. 2011. City of Pacifica Collection System Master Plan Final Report. October.

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

Existing Conditions

The proposed EQ basin site is currently a paved parking lot for the Skatepark and is surrounded by residential properties to the south, commercial development to the north and east, and SR-1 and Pacific State Beach to the west. No known minerals exist within the EQ basin site (City of Pacifica 1980a). No classified or designated mineral deposits of statewide or regional significance are known to occur in the vicinity of the Project. Limestone can be found to the south in Rockaway Quarry (City of Pacifica 1980a).

Impact Discussion

The EQ basin site would not affect mineral resources.

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. The Project area is not identified as containing mineral resources. The General Plan Conservation Element identifies the Pacifica Quarry and Mori Point as areas with regional mineral significance and are both approximately 1 mile north of the Project location.

b) Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. See **Subsection 11a**.

Mitigation Measures

None required.

References

City of Pacifica. 1980a. City of Pacifica General Plan. Conservation Element.

12. Noise	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan, specific plan, noise ordinance or applicable standards of other agencies?	☐	☒	☐	☐
b) Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

12. Noise	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Existing Conditions and Regulatory Setting

The proposed EQ basin project site is located to the southwest of the Community Center and adjacent to the Skatepark. The existing site consists of a surface parking lot. The property line of the nearest single-family residence to the Project site is located approximately 80 feet southeast of the southern end of the proposed EQ basin structure operations site. Approximately 160 feet to the east is a commercial retail shopping center. Additional commercial land uses, which include retail shops, a hotel, and a restaurant, are located north of the Project site on the north side of Crespi Drive.

The noise environment at the site results primarily from vehicular traffic along SR-1. Local traffic along Crespi Drive and Community Center/Skatepark operations also contribute to the ambient noise environment at nearby noise-sensitive receptors.

A noise monitoring survey was performed by Illingworth & Rodkin, Inc. at the proposed EQ basin site beginning on Thursday, September 22, 2016 and concluding on Monday, September 26, 2016. The monitoring survey included one long-term noise measurement (LT-1) and one short-term noise measurement(ST-1). Both measurement locations are shown in **Figure 9**.

Long-term noise measurement LT-1 was made at the southern boundary of the property, along the fence line adjoining single-family residences to the proposed EQ basin site. LT-1 was located approximately 225 feet from the centerline of SR-1. Hourly average noise levels at LT-1 typically ranged from 55 to 64 dBA equivalent continuous noise level (Leq) during the day, and from 45 to 60 dBA Leq at night. The community noise equivalent level (CNEL) measured from Thursday, September 22, 2016, through Monday, September 26, 2016, was 62 dBA CNEL. The daily trend in noise levels at LT-1 is shown in **Figures 10.A** through **10.E**.

Short-term noise measurement ST-1 was made over a period of ten minutes on Thursday, September 22, 2016, beginning at 1:00 p.m. ST-1 was made along the sidewalk between the Community Center and the Skatepark. The distance from ST-1 to the centerline of SR-1 was approximately 320 feet. The 10-minute Leq(10) measured at ST-1 was 64 dBA Leq(10), and the estimated CNEL was 62 dBA CNEL. **Table 6** summarizes the results for the short-term measurement.

Source: NAIP 6/13/2014

Figure 9
Noise Measurement Locations

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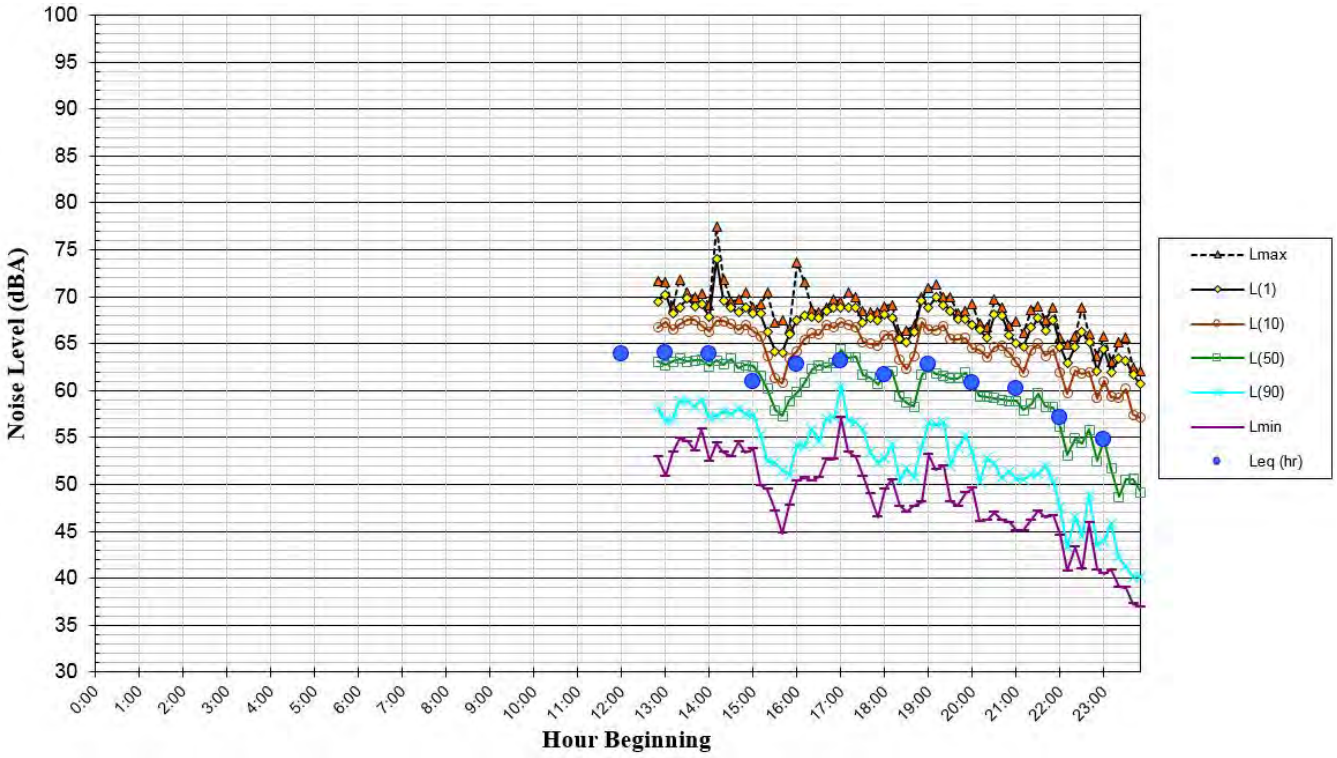

Figure 10.A
Daily Trends in Noise Levels at LT-1
Thursday, September 22, 2016

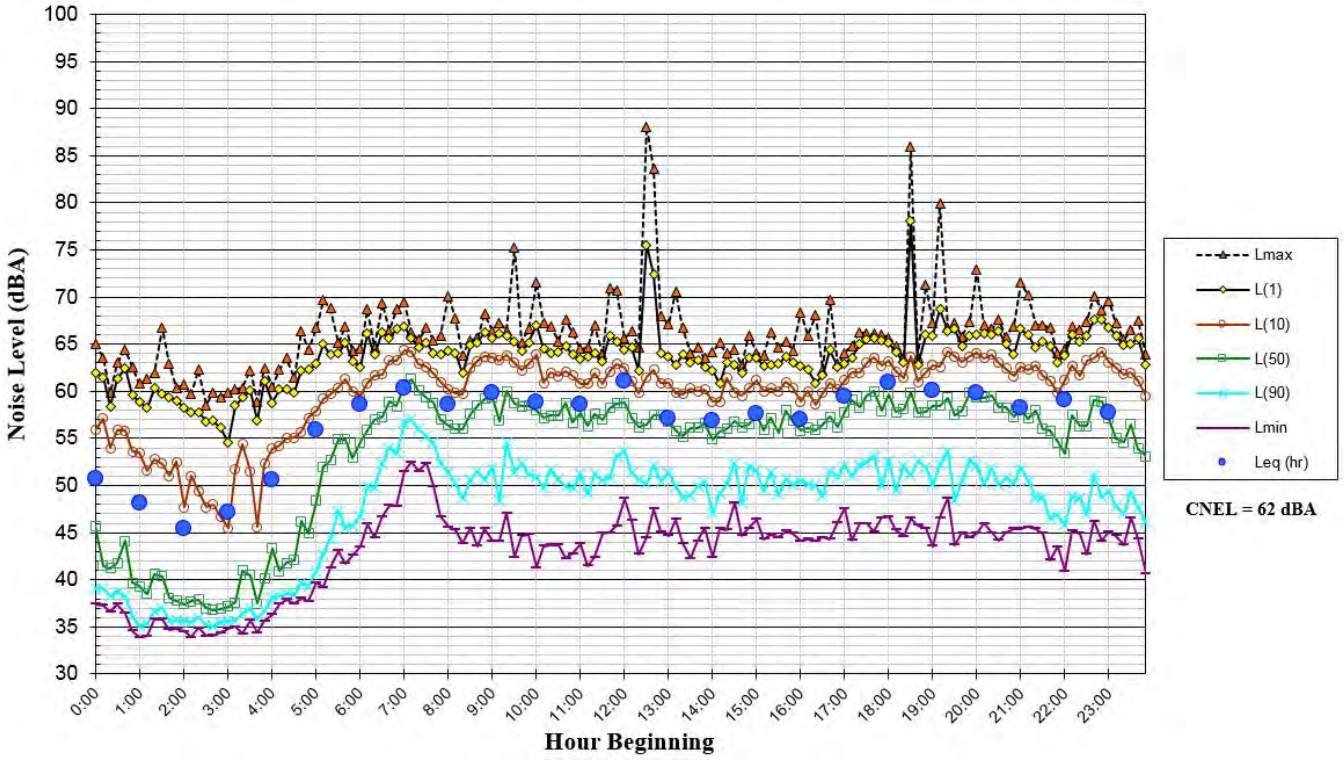

Figure 10.B
Daily Trends in Noise Levels at LT-1
Friday, September 23, 2016

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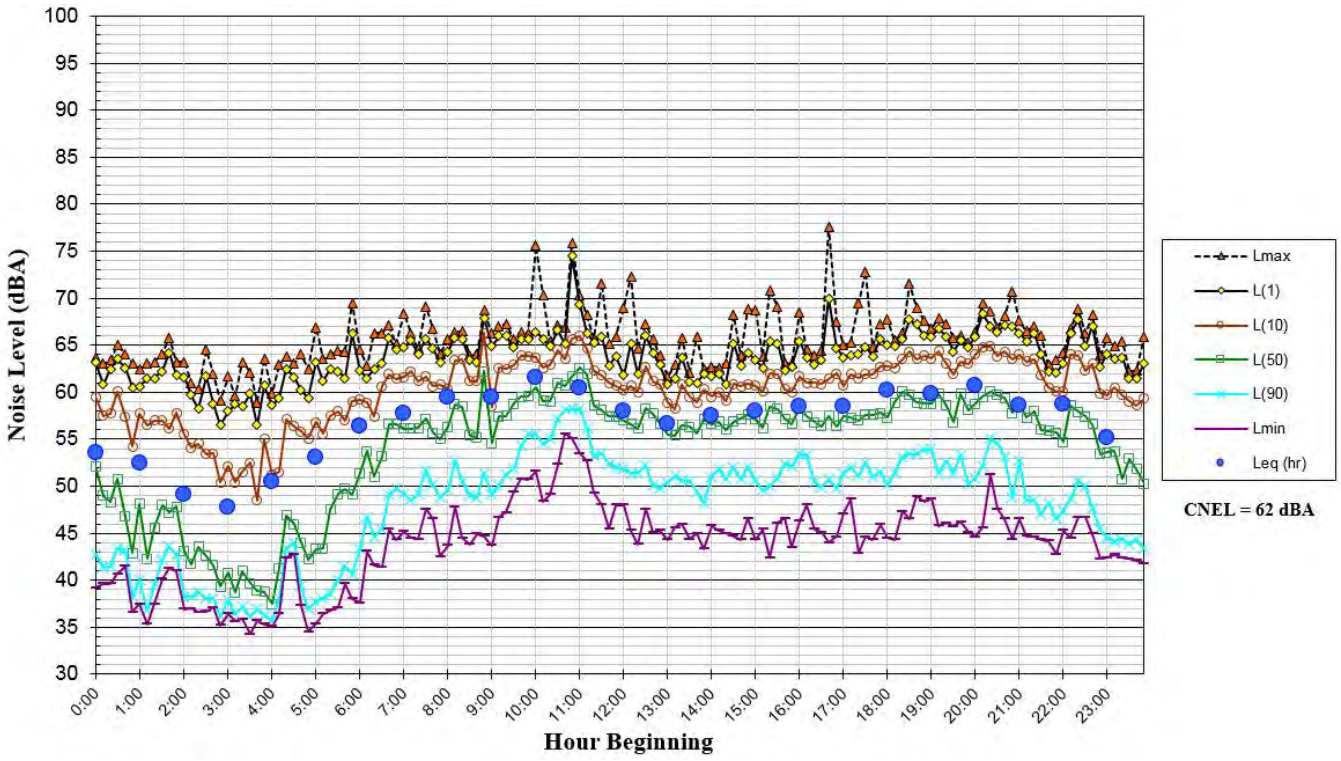

Figure 10.C
Daily Trends in Noise Levels at LT-1
Saturday, September 24, 2016

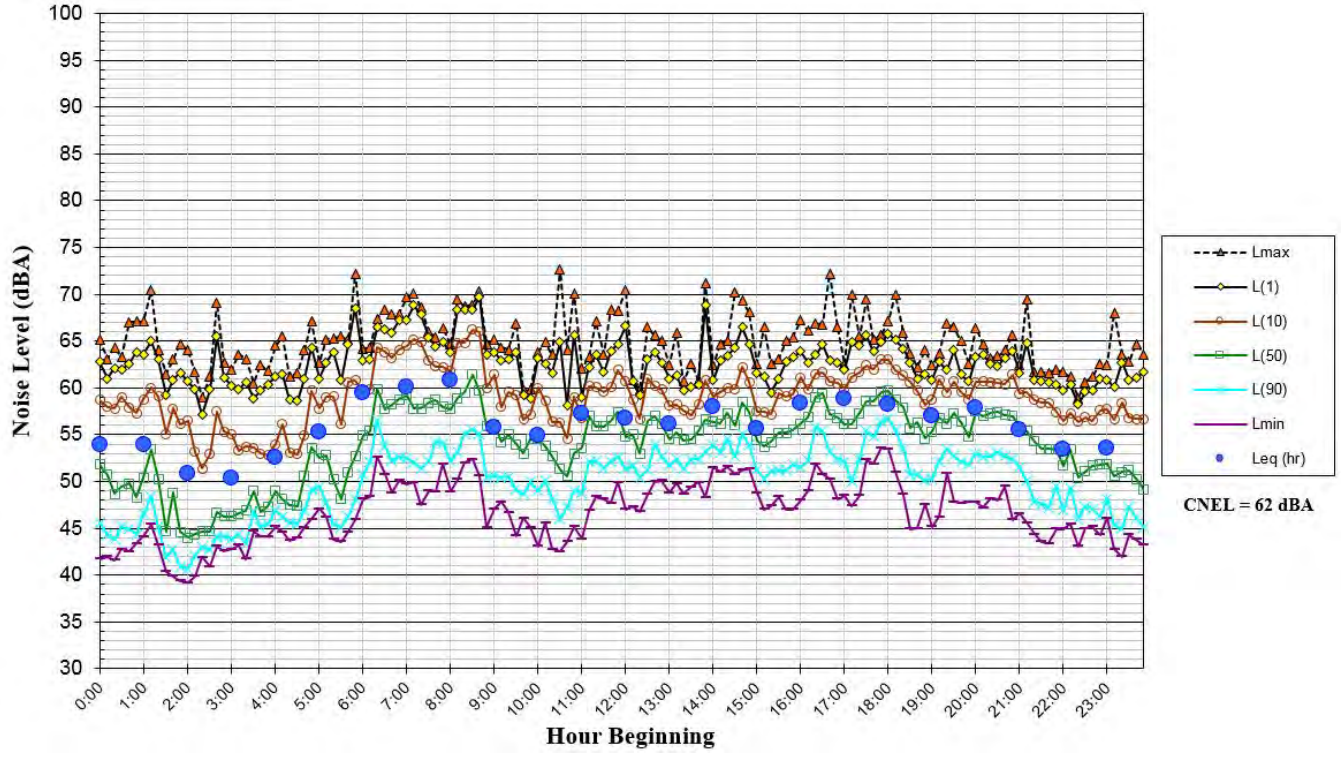

Figure 10.D
Daily Trends in Noise Levels at LT-1
Sunday, September 25, 2016

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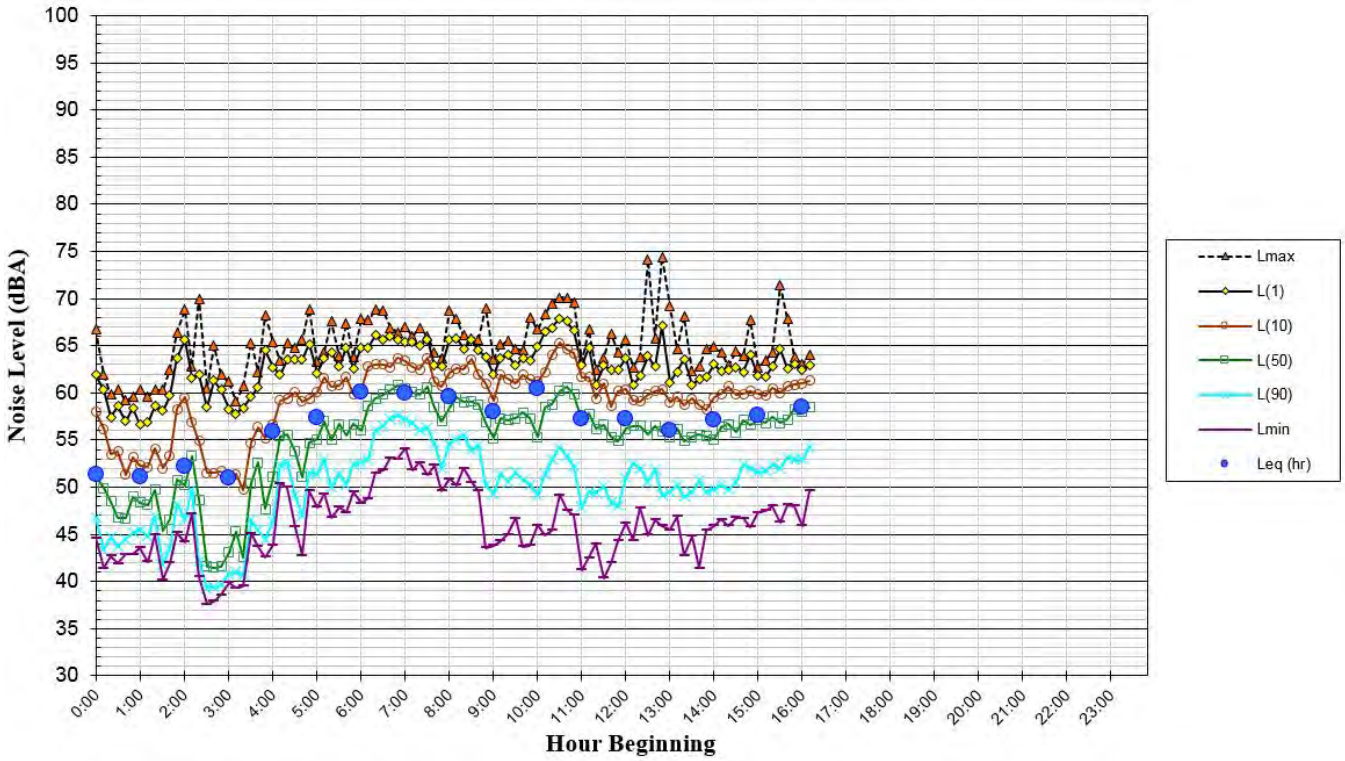

Figure 10.E
Daily Trends in Noise Levels at LT-1
Monday, September 26, 2016

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Table 6: Summary of Short-Term Noise Measurements

Noise Measurement Location (Date, Time)	Measured Noise Level, dBA						Calculated CNEL, dBA
	L_{max}	$L_{(1)}$	$L_{(10)}$	$L_{(50)}$	$L_{(90)}$	$L_{eq(10)}$	
ST-1: along sidewalk between community center and skatepark (9/22/2016, 13:00-13:10)	79	69	66	63	59	64	62

Note: CNEL was approximated by correlating to corresponding period at long-term site.

Regulatory Setting

The State of California and the City have established regulatory criteria that are applicable in this assessment. Appendix G of the state CEQA Guidelines is used to assess the potential significance of impacts pursuant to local General Plan policies or the applicable standards of other agencies. A summary of the applicable regulatory criteria is provided below.

State CEQA Guidelines

CEQA contains guidelines to evaluate the significance of effects of environmental noise attributable to a Project, as identified in the checklist above.

CEQA does not define a noise level increase that would be considered substantial. Typically, an increase in the day-night average sound level (Ldn)/CNEL noise level resulting from the Project at noise sensitive land uses of 3 dBA or greater would be considered a significant impact when projected noise levels would exceed those considered acceptable for the affected land use. An increase of 5 dBA Ldn/CNEL or greater would be considered a significant impact when projected noise levels would remain within those considered acceptable for the affected land use.

City of Pacifica General Plan

The City's 1980 General Plan Noise section qualitatively discusses the importance of considering noise during future land use and development activities but does not provide any quantitative restrictions or guidelines for Project developments. While the City's 2014 General Plan Draft has not been adopted, it does establish thresholds to protect the noise environments for existing land uses. Therefore, for the purpose of this study, the 2014 General Plan Draft was used to assess project impacts.

The City's 2014 General Plan Draft Noise section (City of Pacifica 2014a) establishes thresholds for community noise exposure by land use type in **Table 7**. For proposed land uses in areas where noise exposure may be expected to be greater than the "normally acceptable" threshold, maximum allowable noise exposure with noise mitigation measures is defined in **Table 8**.

Table 9 provides noise emission standards for new stationary (non-transportation) noise sources, such as industrial facilities, automotive servicing, or equipment yards.

Noise exposure levels are classified as being "normally acceptable," "conditionally acceptable," "normally unacceptable," or "clearly unacceptable" for different land use types.

Normally Acceptable

- *Indoor Uses: Either the activities associated with the land use are inherently noisy or standard construction methods will sufficiently attenuate exterior noise to an acceptable level; for land use types that are compatible because of inherent noise levels, sound attenuation must be provided for associated office, retail, and other noise-sensitive indoor spaces sufficient to reduce exterior noise to an interior maximum of 50 dBA CNEL.*

- *Outdoor Uses: Outdoor activities associated with the land use may be carried out with minimal interference.*

Conditionally Acceptable

- *Indoor Uses: Noise reduction measures must be incorporated into the design of the project to attenuate exterior noise to the indoor noise levels listed in* **Table 8***.*

- *Outdoor Uses: Noise reduction measures must be incorporated into the design of the project to attenuate exterior noise to the outdoor noise levels listed in* **Table 8***. Acceptability is dependent upon characteristics of the specific use.*

Normally Unacceptable

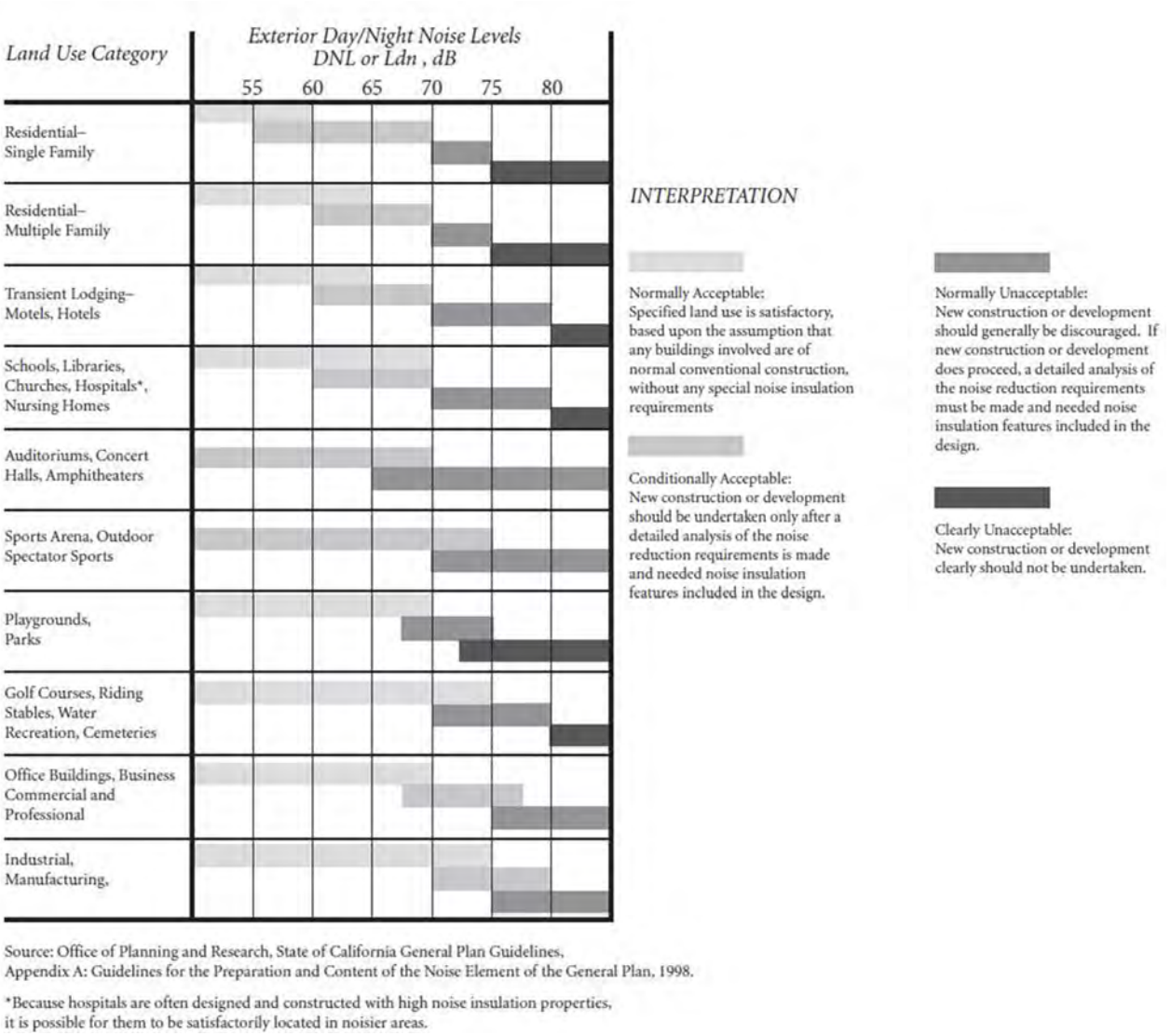
- *Indoor Uses: Extensive mitigation techniques are required to make the indoor environment acceptable for indoor activities. Noise level reductions necessary to attenuate exterior noise to the indoor noise levels listed in* **Table 8** *are difficult to achieve and may not be feasible.*

- *Outdoor Uses: Severe noise interference makes the outdoor environment unacceptable for outdoor activities. Noise level reductions necessary to attenuate exterior noise to the outdoor noise levels listed in* **Table 8** *are difficult to achieve and may not be feasible.*

Clearly Unacceptable

- *New construction or development should generally not be undertaken.*

Table 7. Land Use Compatibility for Community Noise Environments



Source: Office of Planning and Research, State of California General Plan Guidelines, Appendix A: Guidelines for the Preparation and Content of the Noise Element of the General Plan, 1998.

*Because hospitals are often designed and constructed with high noise insulation properties, it is possible for them to be satisfactorily located in noisier areas.

Source: City of Pacifica General Plan Draft, City of Pacifica, March 2014.

Table 8. Allowable Noise Exposure

	Outdoor Activity Areas[1]	Interior Spaces	
Noise-Sensitive Land Use	DNL/CNEL[2], dB	DNL/CNEL2, dB	Leq dB[3]
Residential	65	45	–
Transient Lodging (Hotels, Motels)	65	45	–
Hospitals, Nursing Homes	65	45	–
Theaters, Auditoriums, Music Halls	–	–	35
Churches, Meeting Halls	65	–	45
Office Buildings	–	–	45
Schools, Libraries, Museums	–	–	45

1 Outdoor activity areas generally include backyards of single-family residences and outdoor patios, decks or common recreation areas of multi-family developments.
2 The CNEL is used for quantification of aircraft noise exposure as required by CAC Title 21.
3 As determined for a typical worst-case hour during periods of use.

Source: City of Pacifica General Plan Draft, City of Pacifica, March 2014.

Table 9. Noise Level Performance Standards for Stationary Sources[8]

	Daytime (7:00 a.m. – 10:00 p.m.)	Nighttime (10:00 p.m. – 7:00 a.m.)
Hourly Equivalent Sound Level (Leq), dBA	50	45
Maximum Sound Level (Lmax), dBA	70	65

Source: City of Pacifica General Plan Draft, City of Pacifica, March 2014.

Additionally, the General Plan Draft Noise section provides implementing policies to for noise. The following are applicable to the Project:

NO-I-1: Community Noise Level Standards. Use the Community Noise Level Exposure Standards, shown in **Table 7**, as review criteria for new land uses. Require all new development that would be exposed to noise greater than the "normally acceptable" noise level range to reduce interior noise through design, sound insulation, or other measures.

NO-I-2: Design Features for Noise Reduction. Require noise-reducing mitigation to meet allowable outdoor and indoor noise exposure standards in **Table 8**. Noise mitigation measures that may be approved to achieve these noise level targets include but are not limited to the following:

- Construct façades with substantial weight and insulation;
- Use sound-rated windows for primary sleeping and activity areas;

[8] As deemed at the property line of the receiving noise-sensitive use.

- Use sound-rated doors for all exterior entries at primary sleeping and activity areas;
- Use minimum setbacks and activity areas;
- Use minimum setbacks and exterior barriers;
- Use acoustic baffling of vents for chimneys, attic, and gable ends;
- Install a mechanical ventilation system that provides fresh air under closed window conditions.

Alternative acoustical designs that achieve the prescribed noise level standards may be approved, provided that a qualified Acoustical Consultant submits information demonstrating that the alternative designs will achieve and maintain the specific targets for outdoor activity areas and interior spaces.

NO-I-3: Best Available Control Technology. Require new, fixed noise sources (e.g., mechanical equipment) to use BACT to minimize noise and vibration.

Noise from mechanical equipment can often be reduced by applying soundproofing materials, mufflers, or other controls provided by the manufacturer.

NO-I-5: Noise Criteria for City Equipment. Develop noise criteria for new equipment purchased by the City.

NO-I-6: Construction Noise. Continue to limit hours for certain construction and demolition work to reduce construction-related noises.

City of Pacifica Municipal Code

Title 5, Chapter 10 of the City of Pacifica Municipal Code makes in unlawful to cause any “loud, disturbing, unnecessary, or unnatural noise” that disturbs persons in Pacifica. Title 8, Chapter 1 provides the allowable construction hours for projects within the City. The applicable sections of these chapters are as follows:

Section 5-10.03: Enumerated. The following noises, among others, are hereby declared to be loud, disturbing, unnecessary, and unusual noises in violation of the provisions of this chapter; provided, however, such enumeration shall not be deemed or construed as in any degree exclusive, but merely illustrative, it being the intent and purpose of the provisions of this chapter to include and prohibit all noises of the kind and character described in Section 5-10.02 of this chapter.

(g) Exhausts. The discharge into the open air of the exhaust of any steam engine, stationary internal combustion engine, motorboat, or motor vehicle, except through a muffler or other device which will effectively prevent loud or explosive noises therefrom;

(h) Defective or loaded vehicles. The use of any automobile, motorcycle, or vehicle so out of repair, so loaded, or in such manner as to create loud and unnecessary grating, grinding, rattling, or other noise;

(i) Loading and unloading vehicles and opening boxes. The creation of loud and excessive noise in connection with loading or unloading any vehicle or the opening and destruction of bales, boxes, crates, and containers;

(j) Construction or repairing buildings and excavating.

(m) Pile drivers, hammers, and similar equipment. The operation, between the hours of 8:00 p.m. and 7:00 a.m., of any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist, or other appliance, the use of which is attended by loud or unusual noise;

(n) Blowers, fans, and combustion engines. The operation of any noise-creating blower, power fan, or internal combustion engine, the operation of which causes noise due to the explosion of operating gases or fluids, unless the noise from such blower or fan is muffled and such engine is equipped with a muffler device to deaden such noise;

Section 8-1.06: Amendments: Section 105.4.1 ("validity of permit: hours of construction"). Section 105.4.1 of the California Building Code is hereby added to read as follows:

105.4.1 Hours of Construction. The hours of construction for any project for which a building permit is required within the City shall be limited to the hours of 7:00 a.m. to 7:00 p.m. on Monday, Tuesday, Wednesday, Thursday, and Friday. The hours of construction shall be limited to 9:00 a.m. to 5:00 p.m. on Saturday and Sunday.

Impact Discussion

The discussion of project impacts follows the noise- and vibration-related CEQA checklist questions, as noted above. The primary noise issues associated with the Project would result from temporary demolition and construction activities and permanent operational noise sources associated with the occasional use of the proposed EQ basin.

While CEQA does not specifically define what noise level increase is considered substantial, generally in moderate noise environments, a project is considered to have a significant impact if the project would permanently increase existing noise levels by more than 3 dBA (which is the minimum increase generally perceptible by the human ear) or would cause noise levels to exceed established local guidelines. Where the existing noise level is lower, a somewhat higher noise level increase (5 dBA or greater) could be tolerated before the impact is considered significant. Temporary noise increases, such as those resulting from project construction activities, are treated somewhat differently because the increase in ambient noise levels is not

permanent. In such situations, applicable local noise limits for construction and activity interference thresholds are often used to define what constitutes a substantial increase in noise.

a) Would the project expose persons to or generate noise levels in excess of standards established in the local general plan, specific plan, noise ordinance or applicable standards of other agencies?

Less than Significant Impact with Mitigation.

Construction Noise

As discussed in the **Project Description**, Project construction would occur over a 17-month period, starting in May 2017 and ending in September 2018. Construction hours would be limited to the following:

- Within the EQ basin area (Skatepark parking lot area including the excavation for the jacking and receiving pits): 8:00 a.m. to 5:00 p.m. Monday through Friday.
- Along City streets (except at the intersection of Linda Mar Boulevard and De Solo Drive): 9:00 a.m. to 4:00 p.m.
- At the intersection of Linda Mar Boulevard and De Solo Drive: 9:00 a.m. to 3:00 p.m.

Weekend and night work is not anticipated. As identified in **Mitigation Measure TRANS-1**, off-haul of soils and delivery of materials would be limited from 8 a.m. to 3:00 p.m. on weekdays. The proposed construction hours are in accordance with the allowable construction hours contained in City's Municipal Code, as summarized in the **Regulatory Setting**, City of Pacifica Municipal Code section, above. Compliance with these provisions is mandatory and would ensure that construction impacts, while potentially a temporary nuisance, are less than significant.

Operational Noise

Table 9 provides noise standards for stationary equipment, as measured at the property line of the receiving noise-sensitive land uses.

Operational noise would be generated by the new mechanical equipment installed at the EQ basin when the system is in use. The pumps needed to drain the EQ basin would be placed at the low spot inside the EQ basin, which would be approximately 45 feet below grade. This would reduce the noise levels associated with the pumps. Ventilation fans, which are anticipated to be no more than 5 hp total, would be in operation when the EQ basin is in use (estimated to be used an average of five times per year), or prior to and when maintenance staff enter the EQ basin (estimated to be approximately 30 times per year, during daytime hours), and would be inactive when the EQ basin is empty. All pumps and ventilation systems would be electric.

A dedicated emergency generator would not be provided for this Project; however, the Project would be designed to allow for a portable generator to be plugged in, in the event of an emergency.

The interior surfaces of the EQ basin would need to be washed after every use. Regular O&M of the EQ basin and associated equipment would be performed, resulting in City personnel present at the site.

The only aboveground equipment would be the two penthouse motorized louvres and the proposed blower, the MCC building, and GAC vessel. The penthouse louvres are designed to allow clean air to be drawn into the tank and would be located along the eastern edge of the parking lot, approximately 95 and 215 feet from the nearest residence. The blower would draw air out of the EQ basin and discharge through the GAC vessel, which is vented to the atmosphere. This system would also be located along the northeastern boundary of the parking lot. The distance from the blower/GAC vessel to the nearest residence would be approximately 160 feet. The blower anticipated for the Project would produce a noise level of 79 dBA Leq, as measured from a distance of 5 feet. Assuming no housing or shielding of any kind would be provided, the nearest residences would be exposed to blower noise levels of 49 dBA Leq. While this would meet the daytime threshold of 50 dBA Leq (**Table 9**), any nighttime operation of the blower would exceed the threshold identified in the City's Draft General Plan of 45 dBA Leq threshold (**Table 9**). With implementation of **Mitigation Measure NOISE-1**, including installation of adequate muffling for stationary equipment, as necessary, the impact would be less than significant with respect to compliance with the Draft General Plan.

b) Would the project expose persons to or generate excessive ground-borne vibration or ground-borne noise levels?

Less than Significant Impact. For structural damage, the California Department of Transportation recommends a vibration limit of 0.5 inch/second, peak particle velocity (in/sec, PPV) for buildings structurally sound and designed to modern engineering standards, 0.3 in/sec, PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and a conservative limit of 0.08 in/sec, PPV for ancient buildings or buildings that are documented to be structurally weakened.

All existing buildings in the Project vicinity are assumed to be structurally sound, but these buildings may or may not have been designed to modern engineering standards. Vibration impacts would be considered significant if levels from proposed construction activities would exceed 0.3 in/sec PPV at nearby buildings. Vibration levels exceeding 0.3 in/sec PPV could result in cosmetic damage.

Construction activities with the potential to generate perceptible vibration levels would include the removal of pavement and soil and the use of heavy equipment or impact tools (e.g., jackhammers or hoe rams). **Table 10**, in the **Regulatory Setting**, above, summarizes typical

vibration levels associated with various pieces of construction equipment at a distance of 25 feet. As shown in the table, pile driving results in elevated vibration levels; however, pile driving is not anticipated for the Project. The micro pile drill rig would generate vibration levels up to 0.089 in/sec PPV, similar to Caisson drilling equipment.

The property line of the nearest single-family residential land use would be 80 to 105 feet from the location of the southern end of the proposed EQ basin; however, some construction activities, which would include parking lot pavement operations and general construction vehicle maneuvers, would be anticipated as close as 10 to 30 feet from nearest residences. The residential building structures would be set back an additional 15 to 25 feet from the property line. Construction vibration levels for activities occurring 80 to 105 feet from the property lines of the nearest residences would be at or below 0.06 in/sec PPV, which would meet the 0.3 in/sec PPV threshold. For activities occurring within 10 to 30 feet of the property line, vibration levels due to the dropping of heavy equipment (e.g., clam shovel drops) and vibratory rollers would be up to 0.58 in/sec PPV; however, the residential structures, which have additional setbacks, would be exposed to vibration levels from these pieces of equipment up to 0.21 in/sec PPV. While no structural damage would be expected, this equipment would produce perceptible vibration levels at times at the nearest residences. All other construction equipment operated within 10 to 30 feet of the nearest residential property lines would generate vibration levels at or below 0.24 in/sec PPV, which meets the 0.3 in/sec PPV threshold.

Pipeline installation within a 10-foot wide utility easement would occur between two houses on Anza Drive, utilizing the jack and bore method. The jacking pit would be located approximately 45 feet north of the residential property line. This construction activity would occur 6 to 12 feet below the existing ground surface. At this distance, vibration levels would be up to 0.11 in/sec PPV at the residences, which is less than the 0.3 in/sec PPV threshold. This would be a less-than-significant impact.

The existing nearby adjacent commercial retail buildings would be approximately 165 feet from the Project site. At this distance, vibration levels would be at or below 0.03 in/sec PPV. The commercial uses located approximately 425 feet northeast, opposite Crespi Drive, would be exposed to vibration levels below 0.01 in/sec PPV. The recreational center, which is located approximately 40 feet north of the Project site, and the Skatepark, which is approximately 15 feet northwest of the Project site, would be exposed to vibration levels up to 0.13 and 0.37 in/sec PPV, respectively.

Expected vibration levels at the Skatepark would exceed the 0.3 in/sec PPV threshold; however, structural damage would not be expected at the Skatepark. As stated in the Caltrans Transportation and Construction Vibration Guidance Manual (Caltrans 2013), concrete blocks start to crack at 8 in/sec PPV, and “no fracturing of intact rock” would occur in rocks exposed to levels below 10 in/sec PPV. Based on the results of this table and the discussion in this section of the document, a large, solid concrete structure like a skatepark would withstand vibration levels

up to 10 in/sec PPV without causing any damage. Due to the assumed structural integrity of the concrete Skatepark, vibration levels exceeding 10 in/sec PPV would be necessary before damage would occur to the Skatepark (Caltrans 2013).

In areas where vibration would not be expected to cause structural damage, vibration levels may still be perceptible. However, as with any type of construction, this would be anticipated and it would not be considered significant, given the intermittent and short duration of the phases that have the highest potential of producing vibration (use of jackhammers and other high power tools such as the micro pile drill rig). By use of administrative controls, such as notifying neighbors of scheduled construction activities and scheduling construction activities with the highest potential to produce perceptible vibration to hours with least potential to affect nearby noise-sensitive receptors, perceptible vibration can be kept to a minimum and as such would not result in a significant impact with respect to perception. Therefore, the impact would be less than significant.

Table 10. Vibration Source Levels for Construction Equipment

Equipment		**PPV at 25 feet (in/sec)**
Pile driver (impact)	upper range	1.158
	typical	0.644
Pile driver (sonic)	upper range	0.734
	typical	0.170
Clam shovel drop		0.202
Hydromill (slurry wall)	in soil	0.008
	in rock	0.017
Vibratory roller		0.210
Hoe ram		0.089
Large bulldozer		0.089
Caisson drilling (representative of micro pile drilling and horizontal drilling)		0.089
Loaded trucks		0.076
Jackhammer		0.035
Small bulldozer		0.003

Source: Transit Noise and Vibration Impact Assessment, United States Department of Transportation, Federal Transit Agency, Office of Planning and Environment, May 2006.

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

Less than Significant Impact. Typically, a significant permanent noise increase would occur if the project would increase noise levels at noise-sensitive receptors by 3 dBA CNEL or more where ambient noise levels exceed the "normally acceptable" noise level standard. Where ambient noise levels are at or below the "normally acceptable" noise level standard, noise level increases of 5 dBA CNEL or more would be considered significant. According to the City's General Plan Draft, the "normally acceptable" outdoor noise level standard for the single-family residences in the Project vicinity would be 60 dBA CNEL, and based on the ambient noise levels measured at LT-1, existing levels are 62 dBA CNEL. Therefore, a significant impact would occur if project-generated noise would permanently increase ambient levels by 3 dBA CNEL.

The EQ basin is expected to be used five times or less per year, primarily in the winter season, but usage is based on weather and would therefore vary from year to year. The ventilation fans would be in operation when the EQ basin is in use and would be inactive when the EQ basin is empty, with the exception of routine O&M activities in which maintenance staff enter the EQ basin. As mentioned above, a dedicated generator is not planned for the Project, but a port would be provided for a portable generator to be plugged in, in the event of an emergency. The interior surfaces of the EQ basin would need to be washed after every use, and regular O&M of the EQ basin and associated equipment would be performed at the site.

Noise levels for the EQ basin's operations and mechanical equipment, which were discussed in Impact a), were estimated to be up to 45 dBA Leq at the nearest residential property line. Existing ambient levels, as measured at LT-1, range from 55 to 64 dBA Leq during daytime hours and from 45 to 60 dBA Leq during nighttime hours. The mechanical equipment for the Project would fall within the range for both daytime and nighttime hourly average noise levels. Therefore, the Project-generated noise would not be expected to increase ambient CNEL levels in excess of 3 dBA CNEL from the ambient noise levels, considering close proximity of SR-1 and Crespi Drive traffic to the nearby single-family residences. Therefore, permanent noise increases attributable to the Project are considered to be less than significant.

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

Less than Significant Impact with Mitigation. As discussed in **Subsection 12a**, construction noise would meet the threshold identified in the City's Draft General Plan. The discussion below evaluates the temporary noise impacts resulting from project construction activities when compared to ambient noise conditions. Ambient noise levels measured at the site ranged from 55 to 64 dBA Leq during daytime hours.

Noise impacts from project construction activities are a function of the level of noise generated by individual pieces of construction equipment, the amount of equipment operating at any

given time, the distance and sensitivities of nearby land uses, the presence of noise barriers or other structures that provide acoustical shielding, and the timing and duration of the noise-generating activities. CEQA or local agencies (i.e., City of Pacifica) do not define what constitutes a substantial temporary or periodic increase in ambient noise levels. The threshold used to define what constitutes a substantial increase in noise at residential and non-residential receptors potentially affected by noise is a noise level in excess of 60 and 70 dBA Leq, respectively, and that exceeds the ambient noise environment by at least 5 dBA Leq, for a period of at least one year. These thresholds assume that interior noise levels within residences and commercial buildings could be maintained at or below 45 dBA Leq with the windows closed to control noise.

The typical range of maximum instantaneous noise levels for the Project, based on the equipment list provided, would be 70 to 90 dBA Lmax at a distance of 50 feet as shown in **Table 11**. **Table 12** presents the typical range of hourly average noise levels generated by different phases of construction measured at a distance of 50 feet. Hourly average noise levels generated by public works-type projects typically range from 79 to 88 dBA Leq, measured at a distance of 50 feet, when all pertinent equipment is present at the site and from 78 to 88 dBA Leq when the minimum required equipment is present at the site. Construction-generated noise levels drop off at a rate of about 6 dBA per doubling of the distance between the source and receptor. Shielding by buildings or terrain often result in lower construction noise levels at distant receptors.

The Project is expected to start in May 2017 and conclude in September 2018. Construction activities would include four phases as discussed in the **Project Description**. As discussed in the **Project Description**, the contractor would be required to install a 16-foot-high temporary sound barrier between the southern perimeter of the EQ basin construction area and the residences to the south of the EQ basin site.

During each stage of construction, there would be a different mix of equipment operating, and noise levels would vary by stage and vary within stages, based on the amount of equipment in operation and the location at which the equipment is operating. Based on the equipment list provided at the time of this study, the average hourly noise levels, as measured at the property lines of the surrounding land uses, were estimated for each phase and are summarized in **Table 13**. The noise levels in the table represent the worst-case scenario conditions, which would be all equipment in the phase operating simultaneously, and are unmitigated levels. The range in noise levels shown for several phases represents noise levels during that phase alone and when that phase overlaps with other phases. The specific overlapping phases are referenced in the notes located at the bottom of the table.

As discussed in the **Project Description**, the majority of the influent conveyance pipeline would be constructed by open trenching construction methods, at depths ranging from approximately 6 to 12 feet below the existing ground surface. The portions of the influent gravity pipelines that

are to be constructed within the utility easement in the nearby residential area would be installed utilizing trenchless methods ("jacking" or "jack method"). It is anticipated that auger bore and jack methods would be used to install a 36-inch-diameter steel casing pipe within the easement. The jacking pit, which would house the boring machinery and hydraulic jack equipment, would be constructed within the southwestern corner of the Skatepark parking lot, and the receiving pit would be constructed within the intersection of Anza Drive and Balboa Way (i.e., the end point of the installation using the jack method). The jacking pit is anticipated to be 20 feet wide by 40 feet long, and the receiving pit would be limited to 10 feet by 10 feet.

Construction noise sources during open trench construction activities would primarily consist of the operation of vehicles and equipment during pavement removal, excavation, pipeline installation, backfill operations, and the repaving of the portion of the street disturbed by the Project. Noise measurements of typical open trench construction activities were made by Illingworth & Rodkin, Inc., in July 2010. Various types of equipment were operating on the construction site, including loaders, excavators, and dump trucks. Noise measurements were conducted at both the heading, where excavation of the trench was occurring, and at the dumpsite where the trench was being filled. The average noise level at a distance of 50 feet was 77 dBA Leq. While construction levels during the conveyance project would at times exceed ambient noise levels at nearby residences, the construction noise nuisance resulting from proposed pipeline trenching activities at any one location along the alignment would be short-term. This limited time frame for trenching activities would reduce the impact to less than significant.

Table 11. Construction Equipment 50-Foot Noise Emission Limits

Equipment Category	L_{max} Level (dBA)[1,2]	Impact/Continuous
Arc Welder	73	Continuous
Auger Drill Rig	85	Continuous
Backhoe	80	Continuous
Bar Bender	80	Continuous
Boring Jack Power Unit	80	Continuous
Chain Saw	85	Continuous
Compressore[3]	70	Continuous
Compressor (other)	80	Continuous
Concrete Mixer	85	Continuous
Concrete Pump	82	Continuous
Concrete Saw	90	Continuous
Concrete Vibrator	80	Continuous
Crane	85	Continuous
Dozer	85	Continuous

Equipment Category	L_{max} Level (dBA)[1,2]	Impact/Continuous
Excavator	85	Continuous
Front End Loader	80	Continuous
Generator	82	Continuous
Generator (25 KVA or less)	70	Continuous
Gradall	85	Continuous
Grader	85	Continuous
Grinder Saw	85	Continuous
Horizontal Boring Hydro Jack	80	Continuous
Hydra Break Ram	90	Impact
Impact Pile Driver	105	Impact
In-situ Soil Sampling Rig	84	Continuous
Jackhammer	85	Impact
Mounted Impact Hammer (hoe ram)	90	Impact
Paver	85	Continuous
Pneumatic Tools	85	Continuous
Pumps	77	Continuous
Rock Drill	85	Continuous
Scraper	85	Continuous
Slurry Trenching Machine	82	Continuous
Soil Mix Drill Rig	80	Continuous
Street Sweeper	80	Continuous
Tractor	84	Continuous
Truck (dump, delivery)	84	Continuous
Vacuum Excavator Truck (vac-truck)	85	Continuous
Vibratory Compactor	80	Continuous
Vibratory Pile Driver	95	Continuous
All other equipment with engines larger than 5 HP	85	Continuous

Notes:
[1] Measured at 50 feet from the construction equipment, with a “slow” (1 second) time constant.
[2] Noise limits apply to total noise emitted from equipment and associated components operating at full power while engaged in its intended operation.
[3] Portable air compressor rated at 75 cubic feet per minute or greater and that operates at greater than 50 psi.

Table 12. Typical Ranges of Exterior Noise Levels at 50 Feet from Construction Sites (dBA, Leq)

	Type of Typical Construction Project							
	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I	II	I	II	I	II	I	II
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

I – All pertinent equipment present at site.
II – Minimum required equipment present at site.
Note: These are exterior noise levels at a distance of 50 feet from a construction site assuming different types of construction (e.g., domestic housing, etc.)
Source: United States Environmental Protection Agency, 1973, Legal Compilation on Noise, Vol. 1, p. 2-104.

Table 13. Estimated Construction Noise Levels at the Nearby Land Uses

Phase	Time Duration	Construction Equipment (Quantity)	Calculated Hourly Average Leq, dBA		
			Residences	Skatepark	Community Center
1A – Abatement/ Demolition	5/22/2017-6/2/2017 (10 days)	Cat 345 Excavator (1) Rubber Tired Loader (1) Skid Steer Loader (1) Semi-Trailer End Dump Truck (2) Tractor/Backhoe (1) Concrete/Industrial Saw (1)	82	97	88

Phase	Time Duration	Construction Equipment (Quantity)	Calculated Hourly Average Leq, dBA		
			Residences	Skatepark	Community Center
1A – Slurry Wall Construction	6/5/2017-9/22/2017 (78 days)	Cat 345 Excavator (1) Crane w/ Clam-Shell Bucket (1) Semi-Trailer End Dump Truck (5) Bentonite Slurry Pump (1) Tractor/Backhoe (1) Bentonite Slurry Batch Plant (1) Concrete Pump Truck (1) Concrete Delivery Truck (2) Portable Generator (2) Delivery Truck (2)	84	99	90
1A – Excavate and Off-Hauling Soil/Spoils	9/25/2017-12/01/2017 (48 days)	Cat 345 Excavator (2) Crane w/ Clam-Shell Bucket (1) Tractor/Backhoe (1) Semi-Trailer End Dump Truck (10) Dewatering Pump (2)	84-87[a]	98-101[a]	90-93[a]
1A – Concrete Plug and Micro Piles	12/04/2017 - 01/03/2018 (20 days)	Grout Pump Truck (1) Grout Delivery Truck (4) Micro Pile Drill Rig (1) Misc. Materials Delivery Truck (2) Portable Generator (1) Dewatering Pump (2)	82	96	88
1A – Internal Base and Wall Construction	01/04/2017-4/20/2018 (76 days)	Crane (1) Concrete Pump Truck (1) Concrete Delivery Truck (4) Rubber Tired Loader (1) Skid Steer Loader (1) Misc. Materials Delivery Truck (2) Portable Generator (2)	82	96	88
1A – Pre-cast EQ Basin Roof Placement	4/23/2018-5/18/2018 (20 days)	Crane (2) Rubber Tired Loader (1) Misc. Materials Delivery Truck (4) Portable Generator (2)	80	84	86
1B – Vault Construction and Pump, Piping, and Valve Placement	5/21/2018-6/11/2018 (15 days)	Tractor/Backhoe (1) Semi-Trailer End Dump Truck (1) Misc. Materials Delivery Truck (2) Portable Generator (2)	80-87[b]	95-101[b]	86-93[b]

Phase	Time Duration	Construction Equipment (Quantity)	Calculated Hourly Average Leq, dBA		
			Residences	Skatepark	Community Center
1B – EQ Basin Effluent Piping	6/12/2018-7/02/2018 (15 days)	Rubber Tired Loader (1) Tractor/Backhoe (1) Backhoe w/ Sheep Foot Attach. (1) Semi-Trailer End Dump Truck (3) Delivery Truck (2) Concrete Delivery Truck (1) Portable Generator (1) Dewatering Pump (1)	82	96	88
1B – Influent Conveyance Pipe, Diversion Structures, & MHs	6/05/2017-9/08/2017 (68 days)	Excavator (1) Excavator w/ Sheep Foot Attach. (1) Semi-Trailer End Dump Truck (3) Tractor/Backhoe (1) Rubber Tired Loader (1) Concrete Delivery Truck (1) Delivery Truck (7) Paver (1) Drum Roller (1) Portable Generator (1) Dewatering Pump (2)	84-86[c]	99-101[c]	90-92[c]
1B – Jack and Bore Casing	9/11/2017-9/29/2017 (15 days)	Excavator (2) Excavator w/ Sheep Foot Attach. (2) Semi-Trailer End Dump Truck (5) Bore and Jack Equipment (1) Tractor/Backhoe (2) Rubber Tired Loader (2) Delivery Truck (1) Portable Generator (1) Dewatering Pump (2)	85-87[d]	100-101[d]	91-93[d]
1B – Water Service Line	5/29/2018-6/11/2018 (10 days)	Rubber Tired Loader (1) Tractor/Backhoe (1) Backhoe w/ Sheep Foot Attach. (1) Semi-Trailer End Dump Truck (3) Delivery Truck (2) Concrete Delivery Truck (1) Portable Generator (1) Dewatering Pump (1)	81	96	87

Phase	Time Duration	Construction Equipment (Quantity)	Calculated Hourly Average Leq, dBA		
			Residences	Skatepark	Community Center
2 – Electrical Conduit Placement	5/21/2018-6/18/2018 (20 days)	Tractor/Backhoe (1) Backhoe w/ Sheep Foot Attach. (1) Semi-Trailer End Dump Truck (1) Delivery Truck (2) Concrete Delivery Truck (1) Portable Generator (1)	80-85[e]	95-100[e]	86-91[e]
2 – Pre-Fabricated Bldg. and Electrical Panel / Motor Control Center	5/29/2018-7/09/2018 (30 days)	Crane (1) Tractor/Backhoe (1) Drum Roller / Compactor (1) Delivery Truck (1) Concrete Delivery Truck (2) Portable Generator (1)	80-83[f]	94-98[f]	86-89[f]
3 – Odor Control System Construction	5/29/2018-7/02/2018 (25 days)	Rubber Tired Loader (1) Tractor/Backhoe (1) Drum Roller / Compactor (1) Semi-Trailer End Dump Truck (3) Delivery Truck (1) Concrete Delivery Truck (1) Portable Generator (1)	81	95	87
4 – Finished Grading	7/03/2018-7/24/2018 (15 days)	Grader (1) Drum Roller / Compactor (1) Rubber Tired Loader (1) Tractor/Backhoe (1) Delivery Truck (4)	81-84[g]	96-98[g]	87-90[g]
4 – Parking Lot Lighting	7/25/2018-8/06/2018 (9 days)	Crane (1) Delivery Truck (1) Portable Generator (1)	75-84[h]	90-98[h]	81-90[h]
4 – Concrete Curbs/ AC Pavement	7/25/2018-8/23/2018 (19 days)	Paver (1) Striping Equipment (1) Tractor/Backhoe (1) Drum Roller (1) AC Delivery Truck (2) Concrete Delivery Truck (3) Portable Generator (1)	83	98	89

Phase	Time Duration	Construction Equipment (Quantity)	Calculated Hourly Average Leq, dBA		
			Residences	Skatepark	Community Center
4 – Landscaping	8/24/2018-9/14/2018 (14 days)	Tractor/Backhoe (1) Skid Steer Loader (1) Delivery Truck (3)	78	93	84

Notes:

[a] The range of construction noise levels represents the levels of 1A – Excavate and Off-Hauling Soil/Spoils phase only and combined with 1B – Jack and Bore Casing phase.

[b] The range of construction noise levels represents the levels of Pump, Piping, and Valve Placement phase only and combined with 1B – EQ Basin Effluent Piping, 2 – Electrical Conduit Placement, 3 – Odor Control System Construction, 1B – Water Service Line, and 2 – Pre-Fabricated Building and Electrical Panel/Motor Control Center phases.

[c] The range of construction noise levels represents the levels of 1B – Influent Conveyance Pipe, Diversion Structures, and MHs phase only and combined with 1A – Slurry Wall Construction phase.

[d] The range of construction noise levels represents the levels of 1B – Jack and Bore Casing phase only and combined with 1A – Slurry Wall Construction phase.

[e] The range of construction noise levels represents the levels of 2 – Electrical Conduit Placement phase only and combined with 3 – Odor Control System Construction and 2 – Pre-Fabricated Building and Electrical Panel/Motor Control Center phases.

[f] The range of construction noise levels represents the levels of 2 – Pre-Fabricated Building and Electrical Panel/Motor Control Center phase only and combined with 3 – Odor Control System Construction phase.

[g] The range of construction noise levels represents the levels of 2 – Pre-Fabricated Building and Electrical Panel/Motor Control Center phase only and combined with 4 – Finished Grading phase.

[f] The range of construction noise levels represents the levels of 4 – Parking Lot Lighting phase only and combined with 4 – Concrete Curbs/AC Pavement phase.

As shown in **Table 13**, noise levels would exceed 60 dBA Leq at the adjacent residences and would exceed 70 dBA Leq at the adjacent commercial uses during all project construction phases. With ambient levels in the Project vicinity ranging from 55 to 64 dBA Leq, construction noise levels would exceed the ambient noise environment by 5 dBA Leq or more throughout project construction.

Construction activities for the proposed project would occur on weekdays during the hours specified in the **Project Description** for a total construction period of 17 months. Construction activities would be expected to result in a substantial temporary noise increase at nearby noise-sensitive receptors, resulting in a potentially significant impact. With implementation of **Applicant Proposed Measure APM-2**, which requires the installation of a 16-foot-high temporary noise barrier during construction activities, and, **Mitigation Measure NOISE-1**, which requires the development and implementation of a Noise Control Plan, the construction noise impacts to ambient noise levels in the Project vicinity would be reduced to a less-than-significant level.

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

No Impact. The Project site is not located within an airport influence area plan nor within 2 miles of a public airport or public use airport (SFO is located approximately 5.8 miles to the northeast).

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The Project is not located within the vicinity of a private airstrip; therefore, the criterion is not applicable.

Mitigation Measures

NOISE-1 No construction activities are permitted on the weekends or at night. To reduce construction noise levels emanating from the site and minimize disruption and annoyance at existing noise-sensitive receptors in the Project vicinity, the City shall require the selected contractor to develop a Noise Control Plan. This noise control plan shall include, but not be limited to, the following construction BMPs:

- All equipment driven by internal combustion engines shall be equipped with mufflers, which are in good condition and appropriate for the equipment.
- The construction contractor shall utilize “quiet” models of air compressors and other stationary noise sources where technology exists.
- Unnecessary idling of internal combustion engines shall be prohibited.
- Construction staging areas shall be established at locations that would create the greatest distance between the construction-related noise sources and receptors nearest the Project site during all project construction, as feasible.
- Locate stationary noise sources as far from receptors as feasible. If they must be located near receptors, adequate muffling (with enclosures, where feasible and appropriate) would be used as necessary to comply with local noise ordinance and general plan limits. Any enclosure openings or venting would face away from receptors.
- Locate material stockpiles, as well as maintenance/equipment staging and parking areas, as far as feasible from residential receptors.
- Neighbors located adjacent to the construction site shall be notified of the construction schedule in writing.

- Designate a project liaison who shall be responsible for responding to noise complaints during construction. The name and phone number of the liaison shall be conspicuously posted at construction areas and on all advanced notifications. This person shall take steps to resolve complaints, including periodic noise monitoring, if necessary. Results of noise monitoring shall be presented at regular project meetings with the Project contractor, and the liaison shall coordinate with the contractor to modify any construction activities that generated excessive noise levels to the extent feasible.

- Require a reporting program that documents complaints received, actions taken to resolve problems, and effectiveness of these actions.

- Hold a preconstruction meeting with the job inspectors and the general contractor/onsite project manager to confirm that noise mitigation and practices (including construction hours, construction schedule, and noise coordinator) are completed.

APM-2 The contractor shall be required to construct temporary noise barriers to shield stationary noise sources (e.g., tunneling equipment) from nearby receptors. The barrier shall be a minimum of 16 feet in height and would provide approximately 8 to 10 A-weighted decibels (dBA) of attenuation at the first floor, and approximately 5 dBA of attenuation at second and third floors, where the line-of-sight to construction activities is interrupted by the barrier.

References

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United States Environmental Protection Agency (U.S. EPA). 1973. Legal Compilation on Noise, Vol. 1, p. 2-104.

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

Existing Conditions

Following the construction of the EQ basin site, the roof of the EQ basin would be designed and constructed as a paved parking lot for the Skatepark, and would provide at minimum, the same number of parking spaces as are in the existing lot. The site is surrounded by single-family residences to the south, commercial development to the north and east, and SR-1 and Pacifica State Beach to the west.

Impact Discussion

The Project would neither increase or decrease the intensity of use at the EQ basin site or pipeline alignment areas in comparison with existing conditions. The use would be the same before and after the Project and would not induce population growth or require the need for housing.

a) Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and business) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The Project would not induce population growth. The Project would be designed to reduce or eliminate SSOs associated with the existing sanitary sewer system.

b) Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The Project would not displace any housing.

c) Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. The Project would not displace any housing and would not require the construction of replacement housing elsewhere.

Mitigation Measures

None required.

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

Existing Conditions

The Project is located within the North County Fire Authority service area, which includes the Cities of Brisbane, Daly City, and Pacifica. The Cabrillo Elementary School is located approximately 500 feet east of the Project at 601 Crespi Street. The Skatepark is situated on the northwestern adjacent property, and the Pacifica Community Center is located on the northern adjacent property.

Impact Discussion

Once completed, the Project would neither increase or decrease the intensity of use at the Project site in comparison with existing conditions. The use would be the same before and after the Project. The parking lot would be closed to the public during project construction; however, the operating adjacent properties (the Skatepark and Community Center) would remain open.

a) Fire protection.

Less than Significant Impact with Mitigation.

As discussed in **Subsection 18d**, Utilities, there would be sufficient water supplies available to serve the Project from existing resources, which takes into account the demand required for fire service. Therefore, the added demand for the as-needed cleaning of the EQ basin would not have a significant impact on the fire protection service. Construction and/or operation of the Project would not impact the service ratio of the fire protection water supply.

As discussed in **Subsection 16e**, encroachment permits would be obtained from the City by the contractor prior to construction-related lane or street parking closures. The encroachment permit review would take emergency access into consideration prior to issuance. Closures of a single lane of traffic (thereby reducing two-lane roads to one-way traffic) would occur during installation of the pipelines in the public right-of-way. Road closures would have the potential to impact fire protection resources. During road closures, the implementation of **Mitigation Measure PUB-1**, including notification to emergency responders a minimum of 48 hours prior to closure, would reduce impacts to fire protection to less than significant.

There would be no change in emergency access after construction. During construction, proper emergency access would be maintained as discussed in **Section 16, Transportation and Circulation**.

b) Police protection.

Less than Significant Impact with Mitigation. During demolition and construction, barriers and protection systems would be constructed to ensure the safe passage of persons around the Project area. Construction activities would be conducted to prevent injury to adjacent buildings, structures, other facilities, and persons.

As discussed in **Subsection 14a**, road closures would have the potential to impact emergency responder resources. During road closures, the implementation of **Mitigation Measure PUB-1**, including notification to emergency responders a minimum of 48 hours prior to closure, would reduce impacts to police protection to less than significant.

Operation of the Project would not impact the service ratio of the police protection. No road closures would occur during operation of the Project.

c) Schools.

No Impact. The Project would not would not impact service ratios of schools.

d) Parks.

Less than Significant Impact. The Project would not directly affect parks. The EQ basin site would be developed in the footprint of the existing Skatepark parking lot. During construction of the EQ basin, the parking lot would be closed to the public; however, the Skatepark would remain open. Signage would be posted to direct Skatepark users to park in the Crespi Parking Lot north of the Community Center. Following completion of EQ basin construction, the Skatepark parking lot would be reconstructed over the EQ basin structure to provide, at minimum, the same number of parking spots as in the existing parking lot.

e) Other public facilities.

Less than Significant Impact. During construction of the EQ basin and ancillary equipment, the Pacifica Community Center would remain open but the Skatepark parking lot would be closed to the public. Signage would be posted to direct Community Center visitors to park in the Crespi Parking Lot north of the Community Center. Following completion of EQ basin construction, the Skatepark parking lot would be reconstructed over the EQ basin structure to provide, at minimum, the same number of parking spots as in the existing parking lot.

Mitigation Measures

PUB-1 At least 48 hours prior to road closures, the City's Public Works Department (or designee, such as Site supervisor) shall notify local emergency service providers (Pacifica Police Department at 650-738-7314 and North County Fire Authority at 650-991-8138) of road closures and length of closure. The construction contractor shall obtain encroachment permits from the City prior to construction-related lane or street parking closures.

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

Existing Conditions

The Project includes the construction of the EQ basin within the footprint of the existing Skatepark parking lot. The existing parking lot includes 46 standard parking spots and three accessible spots in a 22,500-square-foot footprint. The Skatepark is open Monday through Saturday from 9:00 a.m. to sunset and Sunday from 10:30 a.m. to sunset.

During construction of the EQ basin, signage would be posted to direct Skatepark and Community Center visitors to park in the Crespi parking lot north of the Community Center. The City's General Plan DEIR (City of Pacifica 2014a) identified that during weekdays, this lot is approximately 30 to 60 percent full and during the weekends is about 50 to 80 percent full.

Impact Discussion

The Project would result in the demolition of the existing Skatepark parking lot to construct the EQ basin. The Skatepark's parking lot would be restored as part of the final phase of construction. The completed parking lot would include a total of 51 parking stalls, including 33 standard parking stalls (19 feet long by 9 feet wide), 15 compact parking stalls (16 feet long by 7.5 feet wide), and three handicap-accessible parking stalls meeting ADA standards. The completed parking lot would be located within the existing 22,500-square-foot parking lot footprint. Adequate drive lanes would be provided to allow one-way traffic flow in a counter-clockwise direction through the parking lot.

During construction of the EQ basin, the Skatepark parking lot would be closed to the public; however, the Skatepark would remain open in accordance with current operating hours. Signage on Crespi Drive would direct Skatepark visitors to park in the Crespi parking lot north of the Community Center.

The temporary closure of the Skatepark parking lot would be considered a less-than-significant impact.

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

Less than Significant Impact. The Project would not increase use of the existing Skatepark or Community Center. During construction of the EQ basin, the parking lot would be closed to the public; however, the Skatepark and Community Center would remain open. Signage would be posted to direct Skatepark and Community Center visitors to park in the Crespi Parking Lot north of the Community Center.

b) Would the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

No Impact. The Project would not generate a demand for new recreational facilities or impact existing recreational facilities. The completed parking lot following installation of the EQ basin would provide at a minimum the same number of parking stalls as the current Skatepark parking lot.

Mitigation Measures

None required.

References

City of Pacifica. 2014a. Pacifica General Plan, Draft Environmental Impact Report. http://www.cityofpacifica.org/depts/planning/general_plan_update/default.asp

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

16. Transportation and Circulation	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☒	☐	☐

Existing Conditions

SR-1 is a north-south roadway that extends along the California coastline. Generally, SR-1 is a two-lane roadway, winding along the state's coastal bluffs. In Pacifica, SR-1 widens to four lanes. In the vicinity of the Project, SR-1 experiences peak period congestion in the northbound direction during the morning peak periods and in the southbound direction in the evening. An asphalt-covered driveway connects the Skatepark's parking lot to Crespi Drive, a collector street which intersects SR-1 approximately 500 feet north of the Project.

Fehr & Peers Transportation Consultants conducted a traffic analysis of the EQ basin construction's impact to the Crespi Drive and SR-1 intersection (Fehr & Peers 2016), which is included as **Appendix D**. The analysis identified the existing peak traffic during the morning and evening commute hours to operate at a Level of Service (LOS) B, with a delay of 12.6 seconds (morning) and 12.5 seconds (evening).[9] LOS D is defined as, "Free-flow conditions, but presence of other vehicles is noticeable. Minor disruptions easily absorbed" (City of Pacifica 2014).

The Project area is served by several San Mateo County Transit District (known as SamTrans) transit lines; the 110, 112, and 118 buses stop along northbound SR-1 just south of Crespi Drive and continue up SR-1 to destinations to the north. The 14, 19, 49, 110, 112, and 118 buses stop along eastbound Crespi Drive east of SR-1 and directly north of the Pacifica Community Center and continue south into Pacifica or to other destinations to the south and east. No significant delays or interference were observed at either of these bus stops during the morning and evening peak hours.

There is currently a pedestrian crossing with a marked standard crosswalk on the south and east legs of the intersection of SR-1/Crespi Drive. Each of these crossings has a pedestrian push button on the traffic signal with a flashing red hand but no countdown function. During Fehr & Peers' observations, there is

[9] The morning peak hour is 7-8 a.m.; however, the morning hour of analysis was chosen to be 8-9 a.m., as the project would add more trips during this time period (25 vs. 10 or 15 vehicles) and the total volume through the intersection is very similar (7-8 a.m. total volume is 10% higher than 8-9 a.m.).

minimal pedestrian traffic during the morning peak hour, and the majority of pedestrians observed in the evening peak hour were passing through the intersection to access the beach west of SR-1. There were no observed conflicts between pedestrians and vehicles at the intersection.

There are no bicycle facilities in the Project area. There was very light bicycle traffic in both peak hours, as observed by Fehr & Peers. Bicyclists observed in the evening peak hour were using the sidewalks and pedestrian crossings to access the beach.

Project Traffic Generation

Trip generation associated with the Project would primarily occur during the construction period. **Table 3** in the **Project Description** provides a summary of the estimated construction vehicle trips. The majority of the truck trips would occur during the Phase 1A Basin Construction during the time when the spoils would be off-hauled (40 trucks per day). During construction, the maximum number of vehicles per day would be approximately 60 vehicles, which includes worker vehicles for approximately 20 workers. Assuming round trips for each vehicle, a maximum of approximately 120 trips per day would be generated during construction.

Trips associated with operation of the EQ basin would be limited to regularly scheduled operations (that are described in more detail in the **Project Description**) and maintenance, including wash-down following EQ basin usage events.

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

Less than Significant Impact with Mitigation. During construction, there would be additional traffic in the form of import and export associated with construction activities. The daily annual average increase in traffic would include up to 40 trucks per day (roundtrip for each truck) on both SR-1 and Crespi Drive. The majority of the construction traffic would not occur during the morning and evening commute hours, and would be expected to be distributed throughout an eight-hour day, therefore adding approximately five trucks per hour.

Fehr & Peers prepared an analysis of the impacts of the project construction on the intersection of Crespi Drive and SR-1. As stated in the **Existing Conditions** discussion above, the intersection of Crespi Drive and SR-1 currently operates at LOS B during the morning and evening peak traffic. The evaluation identified up to 10 additional truck trips incoming to the site in the morning (2.5 passenger car equivalents per truck for rolling terrain) and up to 15 outbound vehicles. The analysis identified that the LOS of the intersection would remain LOS B during morning and evening peak periods.

Applicable plans, ordinances, and policies include the *City of Pacifica General Plan* (City of Pacifica 1980a), *City of Pacifica Local Coastal Land Use Plan* (City of Pacifica 1980b), the *City of Pacifica Draft General Plan* (City of Pacifica 2014), and the *San Mateo County Congestion Management Program* (San Mateo County 2015).

City of Pacifica General Plan (1980)

The General Plan for the City includes traffic guidelines by neighborhood. The Project is located within the West Linda Mar neighborhood, which is bounded on the west by SR-1 and the North by Crespi Drive. The neighborhood is dominated by low-density residential use, and circulation within the neighborhood is noted as adequate for existing and proposed development. The plan states that the limiting factor for access to this neighborhood is the capacity of SR-1 during peak-hour traffic conditions. No specific guidance or prohibitions are given for land use with regard to traffic flows.

City of Pacifica Local Coastal Land Use Plan (LCLUP; 1980)

Although the Project is within the West Linda Mar neighborhood as designated by the General Plan and outside of the Coastal Zone, it is directly adjacent to the Headlands/San Pedro Beach. San Pedro Beach is noted in the LCLUP as a popular beach destination for coastal visitors. The Project construction would not affect access points to the beach. The Project construction, which would occur on weekdays, would not occur concurrently with peak traffic for coastal visitors, which is concentrated on weekends in the spring and fall.

City of Pacifica Draft General Plan (2014)

Although the 2014 Draft General Plan has not been adopted by the City, the traffic data are more current than those discussed in the currently adopted 1980 General Plan, and therefore warrant discussion. Per the Draft General Plan, “the City’s policy is to limit further deterioration of traffic conditions by evaluating the significance of impacts of new development on highway congestion, and requiring mitigation to maintain, if possible, LOS D for City streets.” LOS D is defined as, “Borders on unstable traffic flow with ability to maneuver severely restricted due to congestion.”

As discussed above, the Fehr & Peers evaluation identified that the LOS of the Crespi Drive and SR-1 intersection during construction would not change from the existing condition (LOS B).

The Draft General Plan Circulation element identifies the following existing conditions within Project area beyond the Crespi Drive and SR-1 intersection, based on a 2013 traffic study performed by DKS Associates:

- Trucks approaching the Project site from the north (morning only):
  - Crespi from SR-1 to Roberts Road: LOS A
  - SR-1 from Fassler Avenue to Crespi Drive: LOS B
  - SR-1 from Reina del Mar Avenue to Fassler Avenue: LOS C
  - SR-1 from Mori Point Road to Reina del Mar Avenue: LOS C
  - SR-1 from Westport Drive to Mori Point Road: LOS C
- Trucks approaching the Project site from the south (throughout the day):
  - Crespi from SR-1 to Roberts Road: LOS A
  - SR-1 from Linda Mar Boulevard to Crespi Drive: LOS C
  - SR-1 between San Pedro Avenue and Linda Mar Boulevard: LOS D
- Trucks leaving the Project site to the south (throughout the day):
  - Crespi from Roberts Road to SR-1: LOS A
  - SR-1 from Crespi Drive to Linda Mar Boulevard: LOS A (peak am) and LOS D (peak pm).
  - SR-1 between San Pedro Avenue and Linda Mar Boulevard: LOS D

Traffic from the Project construction and operation would not decrease the existing LOS of roadways below LOS D. The peak traffic flow northbound on SR-1 in the morning is 3,800 cars per hour in the Project vicinity (Caltrans 2015). The peak traffic flow southbound on SR-1 in the afternoon is 1,750 cars per hour in the Project vicinity (Caltrans 2015). As construction work starts prior to the peak commute hour, worker traffic would not add to congestion on SR-1. Truck traffic throughout the day is likely to be on the order of 25 passenger car equivalents per hour, resulting in a 0.6% increase in the morning peak traffic counts, and 15 passenger cars per hour in the evening, resulting in a 3.8% increase in the evening peak traffic counts. Because the Project would increase traffic counts on roadways with an existing LOS D, the project could result in a conflict with the Draft General Plan. Through implementation of **Mitigation Measure TRANS-1**, which requires the contractor to prepare a Traffic Control Plan and limits the arrival and departure times of trucks so as to avoid impact to peak traffic periods, the impact would be less than significant.

San Mateo County Congestion Management Program (CMP; 2015)

The portion of SR-1 from the San Francisco border to the Linda Mar Boulevard intersection that runs adjacent to the proposed EQ basin site is listed as a CMP roadway segment. The CMP states that “a project will be considered to have a CMP impact if the Project will cause the freeway segment to operate at a level of service that violates the standard adopted in the current CMP.”

The CMP indicates that the baseline LOS for the freeway segment from the San Francisco border to Linda Mar Boulevard is LOS D (1991 baseline). The 2015 CMP indicates that the current LOS for this same stretch of SR-1 (San Francisco County line to Linda Mar Boulevard) currently

operates at LOS A both in the a.m. and p.m. without exemptions. The LOS standard adopted in the CMP for this segment of roadway is LOS E. The increase in traffic from the Project would not be expected to reduce the LOS below the LOS standard.

The 2015 CMP indicates that the current traffic between Linda Mar Boulevard to Frenchmens Creek Road is LOS D. As stated above, the increase in vehicles at any given time would be approximately 0.6% to 3.8%. The LOS standard adopted in the CMP for this segment of roadway is LOS E. The increase in traffic from the Project would not be expected to reduce the LOS below the LOS standard.

The 2015 CMP indicates that the current traffic between Frenchmens Creek Road and Miramontes Road is LOS E. As stated above, the increase in vehicles at any given time would be approximately 0.6% to 3.8%. The LOS standard adopted in the CMP for this segment of roadway is LOS E. The increase in traffic from the Project would not be expected to reduce the LOS below the LOS standard.

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

Less than Significant Impact with Mitigation. Project traffic would not conflict with the San Mateo County CMP. See discussion of the San Mateo County Congestion Management Program in **Subsection 16a**.

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

No Impact. The Project would have no impact to air traffic patterns as there is no air traffic related to the Project.

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

Less than Significant Impact with Mitigation. As discussed in the Project Description, the Project would require temporary lane closures during construction. Lane closures would be required during the pipeline installation in the rights-of-way along Anza Drive, Balboa Way, Arguello Boulevard, and De Solo Drive. As identified in **Table 2** in the **Project Description**, pipeline construction (Phase 1B of construction) would occur over a 7-month period from June through December 2017. As discussed in the Project Description, single lane closures would be required during pipeline construction. Traffic control would be provided to account for the reduction from two-way traffic to one-lane traffic. This could result in disruption to commutes, or confusion by drivers required to take a detour. Additionally, parking on Crespi Drive may be closed temporarily during import or export of materials by truck to the EQ basin location.

Construction activities would occur in stages in order to minimize disturbance and to maintain circulation and access through the Project area. Except for temporary lane closures on local streets during the construction period, there would be no ongoing impact to traffic in the vicinity. No roadway or driveway access to businesses or residents is expected to be severed during the construction of the Project.

Increased truck traffic during construction would be controlled by trained flaggers and appropriate signage during all phases of construction as identified in the Traffic Control Plan to be prepared by the selected contractor (**Mitigation Measure TRANS-1**).

e) Result in inadequate emergency access?

Less than Significant Impact with Mitigation. The construction contractor shall obtain encroachment permits from the City prior to any work within City rights-of-way (street/sidewalk), public easements, or utility easements. Following receipt of the encroachment permit, the contractor must notify the City's Construction Manager at least 48 hours before work starts. Follow-up inspections would be scheduled with the City's Construction Manager. Encroachment permit bonds would not be refunded by the City until the Construction Manager has reviewed the work and it has been signed off by the City's Engineer as conforming to the City's engineering standards.

Road closures could result in inadequate emergency access in the area. With implementation of **Mitigation Measure PUB-1**, which requires notification of local emergency service providers (Pacifica Police Department and North County Fire Authority) of road closures and length of closure, the impact to emergency access would be less than significant.

There would be no change in emergency access after construction.

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

Less than Significant Impact with Mitigation. Construction would result in temporary impacts associated with lane closures during construction, which would result in detours to sidewalks (pedestrian travel), bike travel, and public transit routes. With implementation of Mitigation Measure **TRANS-1**, disruptions in the City rights-of-way would be controlled by trained flaggers and appropriate signage, and the impact to public transit, bicycle, and pedestrian facilities would be less than significant.

As stated is **Subsection 16e**, encroachment permits would be required for any work within the City rights-of-way (street/sidewalk), public easements, or utility easements, and a completion inspection would be required to confirm that the work was done in accordance with City standards. As a result, there would be no change that would impact public transit, bicycle, or pedestrian facilities following construction.

Mitigation Measures

TRANS-1 The selected contractor shall be required to prepare a Traffic Control Plan, which shall include, at minimum:

- A set of comprehensive traffic control measures to maintain safety and LOS, including:
  - scheduling of major truck trips and deliveries to avoid peak traffic hours – deliveries and soil off-haul trucks shall not arrive onsite prior to 8 a.m. and shall not leave the site outside of the hours of 9 a.m. to 3 p.m.,
  - requirements for posting of detour signs,
  - requirements for traffic control personnel such as flaggers during disruptions in the City rights-of-way,
  - lane closure procedures and signage requirements,
  - placement requirements for signs and cones for drivers, and
  - designated construction access routes;
- Methods for maintaining the condition and LOS of city and state roadways;
- Notification procedures for adjacent properties and public safety personnel regarding when major deliveries, detours, and lane closures would occur;
- Location of construction staging areas for materials, equipment, and vehicles at an approved location;
- Any heavy equipment brought to the construction site shall be transported by truck, where feasible.

References

California Department of Transportation (Caltrans). 2015. 2014 Traffic Volumes on California State Highways. May 26.

City of Pacifica. 1980a. City of Pacifica General Plan: Land Use Element – Description by Neighborhood.

_____. 1980b. City of Pacifica Local Coastal Land Use Plan: Local Coastal Land Use.

_____. 2014b. Pacifica Draft General Plan – Circulation Element. http://www.cityofpacifica.org/civicax/filebank/blobdload.aspx?blobid=6554

City/County Association of Governments of San Mateo County (San Mateo County). 2015. San Mateo County Congestion Management Program: Chapter 3 – Traffic Level of Service Standards. http://ccag.ca.gov/wp-content/uploads/2016/02/2015-CMP_Final_rev.pdf

Fehr & Peers. 2016. Traffic Analysis for the Construction of the Equalization Basin at 540 Crespi Drive in Pacifica, California. November 17.

17. Tribal Cultural Resources	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in the 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 resources to a California Native American tribe.	☐	☒	☐	☐

Discussion

AB 52, which went into effect on July 1, 2015, established a consultation process with all California Native American Tribes on the NAHC List and required consideration of Tribal Cultural Values in the determination of project impacts and mitigation. AB 52 established a new class of resources, tribal cultural resources, defined as a site feature, place, cultural landscape, sacred place or object, which is of cultural value to a Tribe that is either: (1) on or eligible for the

California Historic Register or a local historic register; or (2) treated by the lead agency, at its discretion, as a traditional cultural resource per Public Resources Code 21074 (a)(1)(A)-(B).

Public Resources Code Section 21083.09, added by AB 52, required the California Natural Resources Agency to update Appendix G of the CEQA Guidelines to address tribal cultural resources. Pursuant to Government Code Section 11346.6, on August 8, 2016, the California Natural Resources Agency adopted and amended the CEQA Guidelines to include consideration of impacts to tribal cultural resources. These amendments separated the consideration of paleontological resources from tribal cultural resources and updated the relevant sample questions to add specific consideration of tribal cultural resources.

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in the 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 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)?

Less than Significant Impact with Mitigation. As discussed in **Subsections 5b** and **5d**, no known Tribal Cultural Resources (TCRs) have been identified or reported on the Project site. The majority of earth-disturbing activities associated with the Project occur within previously disturbed areas, such as the existing Skatepark parking lot and within existing roadways. Implementation of **Mitigation Measures CUL-1** and **CUL-2** would reduce impacts to unknown archaeological deposits, including TCRs, to a less-than-significant level. As discussed under **Subsection 5d**, compliance with state and federal regulations would reduce the likelihood of disturbing or discovering human remains, including those of Native Americans.

b) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in the 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 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?

Less than Significant Impact with Mitigation. A TCR is defined under AB 52 as a site, feature, place, cultural landscape that is geographically defined in terms of size and scope, sacred place, and object with cultural value to a California Native American tribe that are either included or eligible for inclusion in the California Register of Historic Resources or included in a local register of historical resources, or included in a local register of historical resources, or if the City, acting as the lead agency, supported by substantial evidence, chooses at its discretion to treat the resource as a TCR.

In accordance with AB 52, Native American Tribes may request that Lead Agencies provide notification of projects. In the event that a Tribe has submitted a request for notification, the Lead Agency shall provide the Tribe with the opportunity to consult on projects early in the CEQA process. The City has not received requests for notification from any Tribes, so tribal consultation was not conducted. Therefore, implementation of **Mitigation Measures CUL-1** and **CUL-2**, together with compliance with state and federal regulations related to the protection of human remains, would minimize impacts to TCRs to a less-than-significant level.

Mitigation Measures

See **Section 5**, Cultural Resources.

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

Existing Conditions

The proposed EQ basin site is currently the location of the Skatepark parking lot. Following construction of the EQ basin, the site would again be used as a parking lot. The proposed EQ basin site is surrounded by a residential area to the south, a commercial development to the north and east, and SR-1 and Pacifica State Beach to the west. There are currently five storm drains and existing storm sewer lines located within the existing Skatepark parking lot as shown in **Figure 3**. The Skatepark parking lot also currently includes an irrigation control box, used to irrigate the narrow landscaped median running the length of the parking lot.

Impact Discussion

The Project would increase the utilities and services systems of use at the Project site in comparison with existing conditions based on the additional potable water service to the EQ basin site. Four of the five existing storm drain inlets on the EQ basin site would be demolished prior to construction, while the fifth (i.e., the northernmost) storm drain inlet would be protected during construction, including during removal of the existing lateral. During construction, two bioretention areas would be constructed in the southern portion of the Project. The current irrigation system would be removed, and existing irrigation lines within the excavation boundaries would be capped. The irrigation system would not be replaced. The Project would have a less-than-significant impact on utilities.

a) Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No Impact. The purpose of the Project, as described in the **Project Description**, is to mitigate SSOs in the City's wastewater collection system and reduce peak wet weather flows to the City's Calera Creek Water Recycling Plant. The Project has been designed to meet the conditions of the CDO issued by the RWQCB, which require the City to implement a number of measures targeted at reducing SSOs. The Project is intended to increase the City's compliance with RWQCB wastewater discharge requirements.

b) Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less Than Significant Impact. As discussed in **Subsection 18a**, above, the Project is the result of storm-related SSOs within the City. Implementation of the Project is intended to provide the City with greater wastewater storage capacity during heavy storm events without requiring costlier alternatives, such as improvements to the collection system or expansion of the wastewater treatment facilities. The implementation of the Project would result in the construction of expanded wastewater storage and handling facilities, which would be a less-than-significant impact.

c) Would the project require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less than Significant Impact. As discussed in **Section 9, Hydrology and Water Quality**, the Project would be required by the MRP for the Bay Area to implement LID measures to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. In accordance with the C.3 Stormwater Technical Guidance (San Mateo Countywide Water Pollution Prevention Program 2013), the City would prepare a Stormwater Management Plan submittal. The plan must confirm that the Project would meet the hydraulic sizing criteria in Section 5.1 of the technical guidance. Through compliance with the conditions of the MRP, the Project would have a less-than-significant impact on stormwater drainage facilities.

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

Less than Significant Impact with Applicant Proposed Measure. As discussed in the **Project Description**, a new water service line would be extended from the existing water main along Crespi Drive to the EQ basin for flushing and cleaning of the interior surfaces of the EQ basin (anticipated to be approximately five times per year, weather dependent). Per the NCCWD, the available water pressure in the existing water main is 205 psi. NCCWD has confirmed that the available water pressure would be adequate for the demands of the Project (NCCWD 2016).

During construction, water needs could include filling water tanks for dust control spraying. Per the NCCWD letter, the existing system would be able to accommodate this limited demand.

A meter and reduced pressure backflow assembly would be added to the new water service line near the current Skatepark parking lot access driveway near Crespi Drive in order to reduce pressure to the new water service line to less than 130 psi. Although the NCCWD has stated that the existing system is capable of handling the Project demand, the City has committed to notifying NCCWD and the North County Fire Authority prior to initiating cleaning operations (**Applicant Proposed Measure APM-3**). There would be a less-than-significant impact from the Project to existing demand for water supply.

e) Would the project result in a determination by the wastewater treatment provider, which serves or may serve the project's projected demand in addition to the provider's existing commitments?

No Impact. See discussion in **Subsection 18a**, above. The Project would reduce the peak demand for wastewater treatment.

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

Less than Significant Impact. The Project would generate both soil for off-haul as well as construction debris (i.e., removed asphalt and concrete, etc.). As discussed in the **Project Description,** approximately 20,000 cubic yards of soil would be generated during excavation. Soil would be sampled and profiled for offsite disposal prior to the start of excavation, and is anticipated to be disposed of as Class III material to the Ox Mountain Sanitary Landfill in Half Moon Bay, approximately 14 miles south of the EQ basin site. Republic Services indicated in an email exchange with Terraphase Engineering on August 8, 2016, that the Ox Mountain Sanitary Landfill would have sufficient landfill capacity to accept the material (M. Eremian 2016). As discussed in the **Project Description**, the contractor would be required to obtain a letter from the landfill confirming that the landfill can meet the needs of the Project prior to construction, as well as obtain an approved profile from the accepting landfill.

g) Would the project comply with federal, state, and local statutes and regulations related to solid waste?

No Impact. The Project would comply with federal and state statutes and regulations related to solid waste.

Applicant Proposed Measure

APM-3 As noted in the **Project Description**, prior to flushing and cleaning of the EQ basin, the City's Wastewater Treatment Plant Superintendent, or deputy thereof, shall contact both the North County Fire Department and the North Coast County Water District, to alert them of anticipated water usage. If the water usage would impede water service for either of the agencies, the flushing and cleaning of the tank would be delayed until the demand could be met.

References

Eremian, Marc. 2016. "RE: Ox Mountain Acceptance Criteria." Message to Alice Hale. August 8. E-mail.

North Coast County Water District (NCCWD). 2016. Letter from Mr. Scott Dalton, Superintendent at NCCWD, to Ms. Maria Aguilar, Assistant Superintendent at City of Pacifica Calera Creek Water Recycling Plant, Subject: "City of Pacifica Future Equalization Basin – Water Usage During Washdown Water Pressure Available at 540 Crespi Drive, Pacifica". September 9.

San Mateo Countywide Water Pollution Prevention Program. 2013. *C.3 Stormwater Technical Guidance (Version 3.2)*. January 4.

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

Impact Discussion

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

Less than Significant Impact with Mitigation. During construction, the Project could adversely affect the habitat of wildlife species, but with implementation of **Mitigations Measures BIO-1** and **BIO-2**, potentially significant impacts would be less than significant.

During construction, the Project could adversely affect unknown historic, archaeological, tribal cultural, or paleontological resources, but with implementation of **Mitigation Measure CUL-1** and **CUL-2** potentially significant impacts would be less than significant. With the potential for presence of archaeological deposits, there is the potential for presence of human remains, which is considered a potentially significant impact. With implementation of **Mitigation Measure CUL-2** potentially significant impacts would be less than significant.

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

Less than Significant Impact. Cumulative impacts are discussed within the analysis of each checklist item and each potentially significant impact to each resources area within the CEQA Guidelines Appendix G checklist has been analyzed in such a manner as to consider the individual and cumulative impacts.

The City is aware of three other projects within the vicinity of the Project. None of the projects is anticipated to overlap with the construction schedule of the Project, and would therefore not contribute to Project impacts in any way so as to render such impacts cumulatively considerable.

The California Department of Transportation issued a final Environmental Impact Report for the Calera Parkway Widening project on August 2, 2013. The document indicates that construction on the project would begin in April 2016 and be completed by August 2016. The project is undergoing litigation, and construction is not anticipated to overlap with the construction of the proposed EQ basin project.

Proponents have indicated to the City Planning Department that a multi-use development project is planned in the parcel northeast of the EQ basin site. A complete permit application has not been submitted to the City Planning Department, and therefore the scope and schedule of the project cannot be included in the evaluation.

Terra Holdings issued a Notice of Preparation of a Supplemental Environmental Impact Report (SEIR) and Notice of Scoping Meeting for the Fassler Avenue Residential Project in October 2015. The proposed project consists of a 24-unit condominium development on a 11.2-acre site located at 801 Fassler Avenue (approximately 0.6 mile north of the Project). The draft SEIR has not been adopted to date, and is expected to be reissued in late 2016. The construction of this residential project may overlap with construction of the Project. As noted above, the checklist discussions have been prepared to address individual and cumulative impacts.

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

Less than Significant Impact with Mitigation. During Project construction, the Project would exceed the BAAQMD CEQA thresholds for Project-level and Cumulative excess cancer risk to sensitive receptors based on $PM_{2.5}$ emissions, but with implementation of **Mitigation Measures AQ-1** and **Applicant Proposed Measure APM-1**, the maximum annual $PM_{2.5}$ concentration increment would be brought below the BAAQMD health impact thresholds. During Project construction, contaminated soil or groundwater may be encountered, but with implementation of **Mitigation Measure HAZ-1**, the impact would be less than significant. During Project construction, hazardous materials would be stored within the Project area, but with implementation of **Mitigation Measure HAZ-2**, the impact would be less than significant. During Project construction activities, outdoor noise levels would increase, but with implementation of **Mitigation Measure NOISE-1** and **Applicant Proposed Measure APM-2**, the impact would be less than significant. During Project construction, road closures could impact emergency vehicle routes and traffic patterns, but with implementation of **Mitigation Measure PUB-1** and **TRANS-1**, the impact would be less than significant.

REPORT PREPARATION

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APPENDIX A
PHOTO LOGS

APPENDIX A1
Photo Log of Existing Site Conditions

	**Photograph 1:** Facing northeast, the asphalt-covered driveway and Pacifica Community Center (left).
	**Photograph 2:** Commercial shopping center, Crespi Center, located on the eastern/southeastern adjoining property.

Photograph 3: Pacifica Skate Park, located to the northwest of the Project location.

Photograph 4: Single-family residences along Anza Drive, located on the southern adjoining property.

Photograph 5: Facing west, undeveloped land with State Route 1 in background.

Photograph 6: Undeveloped property to the northwest (beyond the Pacifica Skate Park).

Photograph 7:

Facing east from the west side of Highway 1 towards the Skate Park.

Photograph 8:

Facing east from the Driveway towards the Crespi Center. Formerly a residential home was located within the fenced area, which was recently demolished. Tree stump is present of previously removed tree.

Photograph 9:

Facing south on Crespi Drive toward the parking lot driveway.

APPENDIX A2
Photo Log of Tree Removal Areas

	**Photograph 1:** Facing northeast, the asphalt-covered driveway and Pacifica Community Center (left). Yellow arrows indicate trees to be removed during construction process.
	**Photograph 2:** Facing east. Yellow arrow indicates tree to be removed during construction process.

SAFETY FIRST	CLIENT: City of Pacifica	**PHOTOGRAPH LOG**
terraphase engineering	PROJECT: Wet Weather Equalization Basin Project	
	PROJECT NUMBER: 0148.001	**page 1**

Photograph 3:
Facing south from Crespi Drive. Up to four trees may be removed from this area in order to create a staging area for the project. Yellow arrows indicate the trees to be removed during construction process.

Photograph 4:
Facing east from Driveway. Up to four trees may be removed from this area in order to create a staging area for the project (Same trees identified in Photograph 3). Yellow arrows indicate the trees to be removed during construction process.

Photograph 5: Facing northeast from Driveway. This tree may be trimmed by a qualified arborist in order to mitigate damage to branches by trucks and heavy equipment in the area. The tree would not be removed.

Photograph 6: Facing north from the south end of the parking lot. Yellow arrows indicate trees to be removed during construction process (also shown on Photograph 1).

APPENDIX B
AIR QUALITY AND GREENHOUSE GAS EMISSIONS DATA

APPENDIX B1
Health Risk Calculations Methodology

Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[1] These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.[2] This HRA used the recent 2015 OEHHA risk assessment guidelines and CARB guidance. While the OEHHA guidelines use substantially more conservative assumptions than the current Bay Area Air Quality Management District (BAAQMD) guidelines, BAAQMD has not formally adopted recommended procedures for applying the newest OEHHA guidelines. BAAQMD is in the process of developing new guidance and has developed proposed HRA Guidelines as part of the proposed amendments to Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.[3] Exposure parameters from the OEHHA guidelines and newly proposed BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

Potential increased cancer risk from inhalation of TACs are calculated based on the TAC concentration over the period of exposure, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency of exposure, and the exposure duration. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less

[1] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.

[2] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.

[3] BAAQMD, 2016. *Workshop Report. Proposed Amendments to Air District Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants. Appendix C. Proposed Air District HRA Guidelines*. January 2016.

than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day). As recommended by the BAAQMD, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of 30 years for sources with long-term emissions (e.g., roadways).

Under previous OEHHA and BAAQMD HRA guidance, residential receptors are assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. BAAQMD recommends using these FAH factors for residential exposures.

Functionally, cancer risk is calculated using the following parameters and formulas:

Cancer Risk (per million) = $CPF \times Inhalation\ Dose \times ASF \times ED/AT \times FAH \times 10^{6}$

Where:

CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$

ASF = Age sensitivity factor for specified age group

ED = Exposure duration (years)

AT = Averaging time for lifetime cancer risk (years)

FAH = Fraction of time spent at home (unitless)

Inhalation Dose = $C_{air} \times DBR \times A \times (EF/365) \times 10^{-6}$

Where:

C_{air} = concentration in air ($\mu g/m^3$)

DBR = daily breathing rate (L/kg body weight-day)

A = Inhalation absorption factor

EF = Exposure frequency (days/year)

10^{-6} = Conversion factor

The health risk parameters used in this evaluation are summarized as follows:

Parameter	*Exposure Type* →	Infant		Child	Adult
	Age Range →	3rd Trimester	0<2	2 < 16	16 - 30
DPM Cancer Potency Factor (mg/kg-day)$^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day)*		361	1,090	572	261
Inhalation Absorption Factor		1	1	1	1
Averaging Time (years)		70	70	70	70
Exposure Duration (years)		0.25	2	14	14
Exposure Frequency (days/year)		350	350	350	350
Age Sensitivity Factor		10	10	3	1
Fraction of Time at Home		0.85-1.0	0.72-1.0	0.72-1.0	0.73

* 95th percentile breathing rates for 3rd trimester and infants and 80th percentile for children and adults

Non-Cancer Hazards

Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the BAAQMD significance thresholds to determine whether a significant non-cancer health impact from a project would occur.

Typically, for residential projects located near roadways with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is diesel particulate matter (DPM). For DPM, the chronic inhalation REL is 5 micrograms per cubic meter ($\mu g/m^3$).

Annual $PM_{2.5}$ Concentrations

While not a TAC, fine particulate matter ($PM_{2.5}$) has been identified by the BAAQMD as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under the California Environmental Quality Act (CEQA). The thresholds of significance for $PM_{2.5}$ (project level and cumulative) are in terms of an increase in the annual average concentration. When considering $PM_{2.5}$ impacts, the contribution from all sources of $PM_{2.5}$ emissions should be included. For projects with potential impacts from nearby local roadways, the $PM_{2.5}$ impacts should include those from vehicle exhaust emissions, $PM_{2.5}$ generated from vehicle tire and brake wear, and fugitive emissions from re-suspended dust on the roads.

APPENDIX B2
Estimated Construction Schedule

Name:	Pacifica Wet Weather EQ Basin												
See Equipment Type TAB for type, horsepower and load factor													
Project Size	NA	s.f. Industrial	1.06	total project acres disturbed									
	22,565	s.f. other, specify:	This is the square footage of the area along existing City streets where the conveyance piping will be installed underground.										
	23,513	s.f. parking lot	52	spaces									
Construction Hours	8	am to	4:30	pm									

Description	HP	Load Factor	Hours/day	Total Work Days	g. Hours	Annual Hours	Average Daily Work trips	Average Daily Truck trips	Comments
1A - Abatement/Demolition	**Start Date:**	**3/27/2017**	**Total phase:**	**10**					**Overall Import/Export Volumes**
	End Date:	**4/7/2017**							
Cat 345 Excavator	162	0.38	7	3	2.1		--	--	
Rubber Tired Loader	199	0.36	7	6	4.2		--	--	
Skid Steer Loader	64	0.37	7	8	5.6		--	--	
Semi Trailer End Dump Truck(s)	450		8	3	2.4		--	6 / truck	Approx. 100 cyds of concrete and 300 cyds of AC + debris.
Tractor(s) / Backhoe(s)	97	0.37	7	8	5.6		--	--	
Concrete/Industrial Saw	81	0.73	4	4	1.6		--	--	
1A - Slurry Wall Construction (incl. excavation and off-hauling soil/spoils)	**Start Date:**	**4/10/2017**	**Total phase:**	**78**					
	End Date:	**7/28/2017**							
Cat 345 Excavator(s)	162	0.38	5	78	5.0		--	--	
Crane w/ Clam-Shell Bucket	226	0.29	5	78	5.0		--	--	
Semi Trailer End Dump Truck(s)	450		8	10	1.0		--	3 / truck	Approx. 4,400 cyds of spoils for off-site disposal
Bentonite Slurry Pump	84	0.74	8	78	8.0		--	--	
Tractor(s) / Backhoe(s)	97	0.37	2	40	1.0		--	--	
Bentonite Slurry Batch Plant	171	0.42	6	78	6.0		--	--	
Concrete Pump Truck			4	78	4.0		--	--	
Concrete Delivery Truck(s)	400	0.38	6	78	6.0		--	2 / truck	Approx. 3,150 cyds of concrete delivered to site.
Portable Generator(s)	84	0.74	8	40	4.1		--	--	
Delivery Truck(s)	400	0.38	4	10	0.5		--	1 / truck	Delivery of bentonite matl's and 824,400 lbs of rebar.
1A - Excavate and Off-Hauling Soil/Spoils for EQ Basin Area	**Start Date:**	**7/31/2017**	**Total phase:**	**49**					
	End Date:	**10/6/2017**							
Cat 345 Excavator(s)	162	0.38	8	49	8.0		--	--	
Crane w/ Clam-Shell Bucket	226	0.29	6	49	6.0		--	--	
Tractor(s) / Backhoe(s)	97	0.37	2	30	1.2		--	--	
Semi Trailer End Dump Truck(s)	450		8	49	8.0		--	3 / truck	Approx. 20,000 cyds of soil for off haul using double trailers.
Dewatering Pump(s)	84	0.74	8	49	8.0		--	--	
1A - Concrete Plug and Micro Piles	**Start Date:**	**10/9/2017**	**Total phase:**	**20**					
	End Date:	**11/3/2017**							
Grout Pump Truck			4	20	4.0			--	
Grout Delivery Truck(s)	400	0.38	4	20	4.0			2 / truck	Approx. 325 cyds of grout.
Micro Pile Drill Rig	205	0.5	6	20	6.0			--	
Misc. Materials Delivery Truck(s)	400	0.38	4	3	0.6			< 1 / truck	
Portable Generator(s)	84	0.74	8	10	4.0			--	
Dewatering Pump(s)	84	0.74	8	20	8.0			--	
1A - Internal Base and Wall Construction	**Start Date:**	**11/6/2017**	**Total phase:**	**76**					
	End Date:	**2/16/2018**							
Crane(s)	226	0.29	8	10	1.1			--	
Concrete Pump Truck			8	30	3.2			--	
Concrete Delivery Truck(s)	400	0.38	8	30	3.2			3 / truck	Approx. 3,400 cyds of concrete
Rubber Tired Loader(s)	199	0.36	4	35	1.8			--	
Skid Steer Loader(s)	64	0.37	4	50	2.6			--	
Misc. Materials Delivery Truck(s)	400	0.38	4	10	0.5			<1 / truck	Rebar, bracing, misc. forms materials.
Portable Generator(s)	84	0.74	8	76	8.0			--	
1A - Precast EQ Basin Roof Placement	**Start Date:**	**2/19/2018**	**Total phase:**	**20**					
	End Date:	**3/16/2018**							
Crane(s)	226	0.29	8	5	2.0			--	
Rubber Tired Loader(s)	199	0.36	4	5	1.0			--	
Misc. Materials Delivery Truck(s)	400	0.38	4	5	1.0			<1 / truck	48, pre-cast roof panels, misc. materials.
Portable Generator(s)	84	0.74	8	20	8.0			--	
1B - Vault Construction and Pump, Piping, and Valve Placement	**Start Date:**	**3/19/2018**	**Total phase:**	**15**					
	End Date:	**4/6/2018**							
Tractor(s) / Backhoe(s)	97	0.37	8	7	3.7			--	
Semi Trailer End Dump Truck(s)	450		4	1	0.3			<1 / truck	5 cyds of excavated soil.
Misc. Materials Delivery Truck(s)	400	0.38	2	2	0.3			--	Pre-cast vault, misc. materials.
Portable Generator(s)	84	0.74	8	15	8.0			--	
1B - EQ Basin Effluent Piping	**Start Date:**	**3/19/2018**	**Total phase:**	**15**					
	End Date:	**4/6/2018**							
Rubber Tired Loader(s)	199	0.36	**4**	8	2.1			--	
Tractor(s) / Backhoe(s)	97	0.37	**8**	10	5.3			--	
Backhoe w/ Sheep's Foot Attachment	97	0.37	**8**	5	2.7			--	
Semi Trailer End Dump Truck(s)	450		8	3	1.6			3 / truck	Approx. 150 cyds of spoils for off-site disposal
Delivery Trucks	400	0.38	4	1	0.3			<1 / truck	Piping and misc. fittings
Concrete Delivery Truck(s)	400	0.38	4	2	0.5			<1 / truck	Thrust blocks.
Portable Generator(s)	84	0.74	8	10	5.3			--	
Dewatering Pump(s)	84	0.74	8	15	8.0			--	
1B - Influent Conveyance Pipe, Diversion Structures, & MHs	**Start Date:**	**4/10/2017**	**Total phase:**	**68**					
	End Date:	**7/14/2017**							
Excavator(s)	162	0.38	8	60	7.1				
Excavator(s) w/ Sheep's Foot Attachment	162	0.38	8	60	7.1				
Semi Trailer End Dump Truck(s)	450		8	15	1.8				Approx. 3,200 cyds of spoils (direct load into trucks)
Tractor(s) / Backhoe(s)	97	0.37	8	60	7.1				
Rubber Tired Loader(s)	199	0.36	4	60	3.5				
Concrete Delivery Truck(s)	400	0.38	4	20	1.2			1 / day	
Delivery Trucks	400	0.38	4	25	1.5				Trench backfill (bedding sand / AB), piping and fittings delivery, pre-cast manholes, etc.
Paver(s)	130	0.36	8	2	0.8				
Drum Roller	80	0.38	8	2	0.8				
Portable Generator(s)	84	0.74	8	60	7.1				
Dewatering Pump(s)	84	0.74	8	60	7.1				
1B - Jack and Bore Casing	**Start Date:**	**7/17/2017**	**Total phase:**	**15**					
	End Date:	**8/4/2017**							
Excavator(s)	162	0.38	8	5	2.7				
Excavator(s) w/ Sheep's Foot Attachment	162	0.38	8	3	1.6				
Semi Trailer End Dump Truck(s)	450		8	2	1.1			3 / truck	Approx. 800 cyds. of spoils
Bore and Jack Equipment	205	0.5	8	5	2.7				
Tractor(s) / Backhoe(s)	97	0.37	4	5	1.3				
Rubber Tired Loaders	199	0.36	**4**	5	1.3				
Delivery Trucks	400	0.38	4	5	1.3				Sand for annular space, piping, casing, and fittings.
Portable Generator(s)	84	0.74	8	10	5.3				
Dewatering Pump(s)	84	0.74	8	13	6.9				
1B - Water Service Line	**Start Date:**	**3/26/2018**	**Total phase:**	**10**					
	End Date:	**4/6/2018**							
Rubber Tired Loader(s)	199	0.36	**4**	8	3.2				
Tractor(s) / Backhoe(s)	97	0.37	**8**	10	8.0				
Backhoe w/ Sheep's Foot Attachment	97	0.37	**8**	5	4.0				
Semi Trailer End Dump Truck(s)	450		8	3	2.4			3 / truck	Approx. 150 cyds of spoils for off-site disposal
Delivery Trucks	400	0.38	4	1	0.4			<1 / truck	Piping and misc. fittings
Concrete Delivery Truck(s)	400	0.38	4	2	0.8			<1 / truck	Thrust blocks.
Portable Generator(s)	84	0.74	8	10	8.0				
Dewatering Pump(s)	84	0.74	8	15	##########				

2 - Electrical Conduit Placement	**Start Date:**	**3/19/2018**	**Total phase:**	**20**										
	End Date:	**4/13/2018**												
Tractor(s) / Backhoe(s)	97	0.37	4	10	2.0									
Backhoe w/ Sheep's Foot Attachment	97	0.37	4	5	1.0									
Semi Trailer End Dump Truck(s)	450		4	1	0.2			<1 / truck	Approx. 20 cyds of soil for off haul					
Delivery Trucks	400	0.38	4	2	0.4				Conduit, wiring, and misc. materials					
Concrete Delivery Truck(s)	400	0.38	4	3	0.6									
Portable Generator(s)	84	0.74	8	15	6.0									
2 - Pre-Fabricated Bldg and Electrical Panel / Motor Control Center	**Start Date:**	**4/2/2018**	**Total phase:**	**30**										
	End Date:	**5/11/2018**												
Crane(s)	226	0.29	6	4	0.8									
Tractor(s) / Backhoe(s)	97	0.37	2	5	0.3									
Drum Roller / Compactor	80	0.38	6	2	0.4									
Delivery Trucks	400	0.38	4	4	0.5				Bldg., electrical panels and equipment, re-bar, & misc. materials.					
Concrete Delivery Truck(s)	400	0.38	4	1	0.1									
Portable Generator(s)	84	0.74	8	25	6.7									
3 - Odor Control System Construction	**Start Date:**	**3/19/2018**	**Total phase:**	**25**										
	End Date:	**4/20/2018**												
Rubber Tired Loader(s)	199	0.36	2	10	0.8									
Tractor(s) / Backhoe(s)	97	0.37	2	10	0.8									
Drum Roller / Compactor	80	0.38	8	1	0.3									
Semi Trailer End Dump Truck(s)	450		8	1	0.3			3 / truck	Approx. 270 cyds of spoils from vent piping trenching.					
Delivery Trucks	400	0.38	4	5	0.8			< 1 / truck	Piping and fittings, GAC components, vent units, rebar, and misc. materials.					
Concrete Delivery Truck(s)	400	0.38	4	1	0.2			< 1 / truck	Concrete for pad.					
Portable Generator(s)	84	0.74	8	15	4.8									
4 - Finished Grading	**Start Date:**	**5/7/2018**	**Total phase:**	**15**										
	End Date:	**5/25/2018**												
Grader(s)	174	0.41	8	3	1.6									
Drum Roller / Compactor	80	0.38	8	3	1.0									
Rubber Tired Loader(s)	199	0.36	4	5	1.3									
Tractor(s) / Backhoe(s)	97	0.37	4	5	1.3									
Delivery Trucks	400	0.38	8	1	0.5			3 / truck	Approx. 185 cyds of Class II AB.					
4 - Parking Lot Lighting	**Start Date:**	**5/28/2018**	**Total phase:**	**9**										
	End Date:	**6/8/2018**												
Crane(s)	226	0.29	4	3	1.3									
Delivery Trucks	400	0.38	4	2	0.9			< 1 /truck	Poles, lights, wiring, misc. materials.					
Portable Generator(s)	84	0.74	8	7	6.2									
4 - Concrete Curbs/AC Pavement	**Start Date:**	**5/28/2018**	**Total phase:**	**19**										
	End Date:	**6/22/2018**												
Paver(s)	130	0.36	8	2	0.8									
Striping Equipment	171	0.42	8	2	0.8									
Tractor(s) / Backhoe(s)	97	0.37	4	5	1.1									
Drum Roller	80	0.38	8	2	0.8									
AC Delivery Trucks	400	0.38	6	2	0.6			2 / truck	Approx. 115 cyds of AC.					
Concrete Delivery Truck(s)	400	0.38	8	10	4.2			2 / truck	Aprox. 250 cyds of concrete.					
Portable Generator(s)	84	0.74	8	15	6.3									
4 - Landscaping	**Start Date:**	**6/25/2018**	**Total phase:**	**14**										
	End Date:	**7/13/2018**												
Tractor(s) / Backhoe(s)	97	0.37	6	10	4.3									
Skid Steer Loader	64	0.37	6	10	4.3									
Delivery Trucks	400	0.38	4	5	1.4			3 / truck	Approx. 50 cyds of Bio soil, 40 cyds of gravel, and misc. materials.					
types listed in "Equipment Types" worksheet tab.														
listed in this sheet is to provide an example of inputs														
ed that water trucks would be used during grading														
otract phases and equipment, as appropriate														
epower or load factor, as appropriate														

APPENDIX B3
CalEEMod Output

Pacifica Equalization Basin

San Mateo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	10.15	1000sqft	1.06	10,150.00	0
Parking Lot	52.00	Space	0.00	23,513.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	429.6	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Revised CO2 Emission Intensity

Land Use - From the project description and construction information

Construction Phase - Construction Schedule

Off-road Equipment - Applicant provided construction schedule

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Portable Generator sets
Other construction equipment refers to the bentonite slurry plant

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Trips and VMT - Demolition= 100+300/16*2
Slurry Wall Construction= (4400+3150/16+4420/20)*2
Concrete plug and microfliters=325*2/16=4 trips
Internal Wall Construction= 3400/1682=44 trips
0.5 miles for construction risk assessment

Demolition - Demolition volume included in trips

Grading - 20000 cy of soil hauled

Construction Off-road Equipment Mitigation - Best Management Practices
Tier 2 Mitigation for all equipment >25HP

Table Name	Column Name	Default Value	New Value
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstructionPhase	PhaseEndDate	3/19/2018	3/16/2018

tblConstructionPhase	PhaseEndDate	5/18/2018	4/20/2018
tblConstructionPhase	PhaseEndDate	6/1/2018	5/11/2018
tblConstructionPhase	PhaseEndDate	6/1/2018	5/25/2018
tblConstructionPhase	PhaseEndDate	10/3/2017	10/5/2017
tblConstructionPhase	PhaseEndDate	7/4/2018	6/21/2018
tblConstructionPhase	PhaseEndDate	7/11/2018	7/12/2018
tblConstructionPhase	PhaseStartDate	5/26/2018	5/28/2018
tblConstructionPhase	PhaseStartDate	4/8/2017	4/10/2017
tblConstructionPhase	PhaseStartDate	10/6/2017	10/9/2017
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tblConstructionPhase	PhaseStartDate	2/20/2018	2/19/2018
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tblConstructionPhase	PhaseStartDate	4/21/2018	4/2/2018
tblConstructionPhase	PhaseStartDate	5/12/2018	5/7/2018
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tblGrading	MaterialExported	0.00	20,000.00
tblGrading	MaterialExported	0.00	90.00
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tblLandUse	LotAcreage	0.47	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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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					
2017	0.2357	1.9903	1.8184	2.4300e-003	2.7100e-003	0.1108	0.1135	6.1000e-004	0.1067	0.1073	0.0000	215.9766	215.9766	0.0395	0.0000	216.8059
2018	0.0701	0.5790	0.5292	8.3000e-004	1.5000e-003	0.0335	0.0350	2.8000e-004	0.0328	0.0331	0.0000	72.4621	72.4621	9.2200e-003	0.0000	72.6558

Total	**0.3058**	**2.5693**	**2.3476**	**3.2600e-003**	**4.2100e-003**	**0.1443**	**0.1485**	**8.9000e-004**	**0.1395**	**0.1404**	**0.0000**	**288.4387**	**288.4387**	**0.0487**	**0.0000**	**289.4617**

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					
2017	0.0795	1.0358	1.9725	2.4300e-003	2.7100e-003	0.0276	0.0303	5.2000e-004	0.0276	0.0281	0.0000	215.9763	215.9763	0.0395	0.0000	216.8056
2018	0.0192	0.2064	0.5789	8.3000e-004	1.5000e-003	5.8000e-003	7.2900e-003	2.3000e-004	5.7900e-003	6.0200e-003	0.0000	72.4621	72.4621	9.2200e-003	0.0000	72.6557
Total	**0.0987**	**1.2421**	**2.5514**	**3.2600e-003**	**4.2100e-003**	**0.0334**	**0.0376**	**7.5000e-004**	**0.0334**	**0.0341**	**0.0000**	**288.4384**	**288.4384**	**0.0487**	**0.0000**	**289.4614**

	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	**67.72**	**51.65**	**-8.68**	**0.00**	**0.00**	**76.84**	**74.66**	**15.73**	**76.07**	**75.69**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	1A_Abatement/Demolition	Demolition	3/27/2017	4/7/2017	5	10	
2	1A_Slurry Wall Construction	Building Construction	4/10/2017	7/26/2017	5	78	
3	1A_Excavation for EQ Area	Grading	7/31/2017	10/5/2017	5	49	
4	1A_Concrete plug and micro piles	Building Construction	10/9/2017	11/3/2017	5	20	
5	1A_Internal Base and Wall Construction	Building Construction	11/6/2017	2/19/2018	5	76	
6	1A_Precast EQBasin Roof	Building Construction	2/19/2018	3/16/2018	5	20	

7	2_Electrical Conduit Placement	Building Construction	3/19/2018	4/13/2018	5	20	
8	3_Odor Control System Construction	Building Construction	3/19/2018	4/20/2018	5	25	
9	2_Pre Fabricated Bldg and Electrical Control Center	Building Construction	4/2/2018	5/11/2018	5	30	
10	4_Finished Grading	Grading	5/7/2018	5/25/2018	5	15	
11	4_Parking Lot Lighting	Building Construction	5/28/2018	6/7/2018	5	9	
12	4_Concrete Curb/AC Pavement	Paving	5/28/2018	6/21/2018	5	19	
13	4_Landscaoing	Site Preparation	6/25/2018	7/12/2018	5	14	

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 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
1A_Abatement/Demolition	Concrete/Industrial Saws	1	1.60	81	0.73
1A_Abatement/Demolition	Excavators	1	2.10	162	0.38
1A_Abatement/Demolition	Rubber Tired Dozers	0	8.00	255	0.40
1A_Abatement/Demolition	Rubber Tired Loaders	1	4.20	199	0.36
1A_Abatement/Demolition	Skid Steer Loaders	1	5.60	64	0.37
1A_Abatement/Demolition	Tractors/Loaders/Backhoes	1	5.60	97	0.37
1A_Slurry Wall Construction	Cranes	1	5.00	226	0.29
1A_Slurry Wall Construction	Excavators	1	5.00	162	0.38
1A_Slurry Wall Construction	Forklifts	0	6.00	89	0.20
1A_Slurry Wall Construction	Generator Sets	2	4.10	84	0.74
1A_Slurry Wall Construction	Graders	0	8.00	174	0.41
1A_Slurry Wall Construction	Other Construction Equipment	1	8.00	171	0.42
1A_Slurry Wall Construction	Pumps	1	8.00	84	0.74

1A_Slurry Wall Construction	Rubber Tired Dozers	0	7.00	255	0.40
1A_Slurry Wall Construction	Tractors/Loaders/Backhoes	1	1.00	97	0.37
1A_Slurry Wall Construction	Welders	0	8.00	46	0.45
1A_Excavation for EQ Area	Cranes	1	6.00	226	0.29
1A_Excavation for EQ Area	Excavators	2	8.00	162	0.38
1A_Excavation for EQ Area	Graders	0	6.00	174	0.41
1A_Excavation for EQ Area	Pumps	2	8.00	84	0.74
1A_Excavation for EQ Area	Rubber Tired Dozers	0	6.00	255	0.40
1A_Excavation for EQ Area	Tractors/Loaders/Backhoes	1	1.20	97	0.37
1A_Concrete plug and micro piles	Bore/Drill Rigs	1	6.00	205	0.50
1A_Concrete plug and micro piles	Cranes	0	6.00	226	0.29
1A_Concrete plug and micro piles	Forklifts	0	6.00	89	0.20
1A_Concrete plug and micro piles	Generator Sets	1	4.00	84	0.74
1A_Concrete plug and micro piles	Pumps	2	8.00	84	0.74
1A_Concrete plug and micro piles	Tractors/Loaders/Backhoes	0	6.00	97	0.37
1A_Concrete plug and micro piles	Welders	0	8.00	46	0.45
1A_Internal Base and Wall Construction	Cement and Mortar Mixers	0	6.00	9	0.56
1A_Internal Base and Wall Construction	Cranes	1	1.10	226	0.29
1A_Internal Base and Wall Construction	Forklifts	0	6.00	89	0.20
1A_Internal Base and Wall Construction	Generator Sets	2	8.00	84	0.74
1A_Internal Base and Wall Construction	Pavers	0	6.00	125	0.42
1A_Internal Base and Wall Construction	Paving Equipment	0	8.00	130	0.36
1A_Internal Base and Wall Construction	Rollers	0	7.00	80	0.38
1A_Internal Base and Wall Construction	Rubber Tired Loaders	1	1.80	199	0.36
1A_Internal Base and Wall Construction	Skid Steer Loaders	1	2.60	64	0.37
1A_Internal Base and Wall Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
1A_Internal Base and Wall Construction	Welders	0	8.00	46	0.45
1A_Precast EQBasin Roof	Air Compressors	0	6.00	78	0.48
1A_Precast EQBasin Roof	Cranes	2	2.00	226	0.29
1A_Precast EQBasin Roof	Forklifts	0	6.00	89	0.20

1A_Precast EQBasin Roof	Generator Sets	2	8.00	84	0.74
1A_Precast EQBasin Roof	Rubber Tired Loaders	1	1.00	199	0.36
1A_Precast EQBasin Roof	Tractors/Loaders/Backhoes	0	6.00	97	0.37
1A_Precast EQBasin Roof	Welders	0	8.00	46	0.45
2_Electrical Conduit Placement	Cranes	0	0.80	226	0.29
2_Electrical Conduit Placement	Forklifts	0	6.00	89	0.20
2_Electrical Conduit Placement	Generator Sets	1	6.00	84	0.74
2_Electrical Conduit Placement	Tractors/Loaders/Backhoes	1	2.00	97	0.37
2_Electrical Conduit Placement	Tractors/Loaders/Backhoes	1	1.00	97	0.37
2_Electrical Conduit Placement	Welders	0	8.00	46	0.45
3_Odor Control System Construction	Cranes	0	6.00	226	0.29
3_Odor Control System Construction	Forklifts	0	6.00	89	0.20
3_Odor Control System Construction	Generator Sets	1	4.80	84	0.74
3_Odor Control System Construction	Rollers	1	0.30	80	0.38
3_Odor Control System Construction	Rubber Tired Loaders	1	0.80	199	0.36
3_Odor Control System Construction	Tractors/Loaders/Backhoes	1	0.80	97	0.37
3_Odor Control System Construction	Welders	0	8.00	46	0.45
2_Pre Fabricated Bldg and Electrical Control Center	Cranes	1	0.80	226	0.29
2_Pre Fabricated Bldg and Electrical Control Center	Forklifts	0	6.00	89	0.20
2_Pre Fabricated Bldg and Electrical Control Center	Generator Sets	1	6.70	84	0.74
2_Pre Fabricated Bldg and Electrical Control Center	Rollers	1	0.40	80	0.38
2_Pre Fabricated Bldg and Electrical Control Center	Tractors/Loaders/Backhoes	1	0.30	97	0.37
2_Pre Fabricated Bldg and Electrical Control Center	Welders	0	8.00	46	0.45
4_Finished Grading	Graders	1	1.60	174	0.41
4_Finished Grading	Rollers	1	1.00	80	0.38
4_Finished Grading	Rubber Tired Dozers	0	6.00	255	0.40

4_Finished Grading	Rubber Tired Loaders	1	1.30	199	0.36
4_Finished Grading	Tractors/Loaders/Backhoes	1	1.30	97	0.37
4_Parking Lot Lighting	Cranes	1	1.30	226	0.29
4_Parking Lot Lighting	Forklifts	0	6.00	89	0.20
4_Parking Lot Lighting	Generator Sets	1	6.20	84	0.74
4_Parking Lot Lighting	Tractors/Loaders/Backhoes	0	6.00	97	0.37
4_Parking Lot Lighting	Welders	0	8.00	46	0.45
4_Concrete Curb/AC Pavement	Cement and Mortar Mixers	0	6.00	9	0.56
4_Concrete Curb/AC Pavement	Generator Sets	1	6.30	84	0.74
4_Concrete Curb/AC Pavement	Other Construction Equipment	1	0.80	171	0.42
4_Concrete Curb/AC Pavement	Pavers	1	0.80	125	0.42
4_Concrete Curb/AC Pavement	Paving Equipment	0	8.00	130	0.36
4_Concrete Curb/AC Pavement	Rollers	1	0.80	80	0.38
4_Concrete Curb/AC Pavement	Tractors/Loaders/Backhoes	1	1.10	97	0.37
4_Landscaoing	Graders	0	4.30	174	0.41
4_Landscaoing	Rubber Tired Dozers	0	4.30	255	0.40
4_Landscaoing	Skid Steer Loaders	1	4.30	64	0.37
4_Landscaoing	Tractors/Loaders/Backhoes	1	4.30	97	0.37

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
1A_Abatement/Demolition	5	13.00	0.00	50.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
1A_Slurry Wall Construction	7	14.00	6.00	1,386.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
1A_Excavation for EQ Area	6	15.00	0.00	2,500.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
1A_Concrete plug and micro piles	4	14.00	6.00	4.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
1A_Internal Base and Wall Construction	5	14.00	6.00	44.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT

1A_Precast EQBasin Roof	5	14.00	7.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
2_Electrical Conduit Placement	3	14.00	6.00	4.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
3_Odor Control System Construction	4	14.00	6.00	34.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
2_Pre Fabricated Bldg and Electrical Control Center	4	14.00	6.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
4_Finished Grading	4	10.00	0.00	23.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
4_Parking Lot Lighting	2	14.00	6.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
4_Concrete Curb/AC Pavement	5	13.00	0.00	46.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
4_Landscaoing	2	5.00	0.00	11.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 1A_Abatement/Demolition - 2017

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					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7700e-003	0.0408	0.0262	5.0000e-005		2.1600e-003	2.1600e-003		2.0100e-003	2.0100e-003	0.0000	4.3457	4.3457	1.2100e-003	0.0000	4.3712
Total	**3.7700e-003**	**0.0408**	**0.0262**	**5.0000e-005**	**0.0000**	**2.1600e-003**	**2.1600e-003**	**0.0000**	**2.0100e-003**	**2.0100e-003**	**0.0000**	**4.3457**	**4.3457**	**1.2100e-003**	**0.0000**	**4.3712**

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	3.0000e-004	7.2000e-004	5.0100e-003	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0789	0.0789	0.0000	0.0000	0.0789
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	1.4000e-004	4.0000e-005	5.8000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0331	0.0331	0.0000	0.0000	0.0331
Total	**4.4000e-004**	**7.6000e-004**	**5.5900e-003**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.1119**	**0.1119**	**0.0000**	**0.0000**	**0.1120**

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					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5800e-003	0.0374	0.0314	5.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	4.3457	4.3457	1.2100e-003	0.0000	4.3712
Total	**1.5800e-003**	**0.0374**	**0.0314**	**5.0000e-005**	**0.0000**	**1.1900e-003**	**1.1900e-003**	**0.0000**	**1.1900e-003**	**1.1900e-003**	**0.0000**	**4.3457**	**4.3457**	**1.2100e-003**	**0.0000**	**4.3712**

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	3.0000e-004	7.2000e-004	5.0100e-003	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0789	0.0789	0.0000	0.0000	0.0789
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	1.4000e-004	4.0000e-005	5.8000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0331	0.0331	0.0000	0.0000	0.0331
Total	**4.4000e-004**	**7.6000e-004**	**5.5900e-003**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.1119**	**0.1119**	**0.0000**	**0.0000**	**0.1120**

3.3 1A_Slurry Wall Construction - 2017

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	0.0970	0.9269	0.6274	1.0400e-003		0.0529	0.0529		0.0506	0.0506	0.0000	93.0033	93.0033	0.0186	0.0000	93.3928
Total	**0.0970**	**0.9269**	**0.6274**	**1.0400e-003**		**0.0529**	**0.0529**		**0.0506**	**0.0506**	**0.0000**	**93.0033**	**93.0033**	**0.0186**	**0.0000**	**93.3928**

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	8.2200e-003	0.0199	0.1388	3.0000e-005	3.0000e-004	9.0000e-005	3.9000e-004	8.0000e-005	8.0000e-005	1.7000e-004	0.0000	2.1865	2.1865	4.0000e-005	0.0000	2.1873

Vendor	2.0300e-003	6.0000e-003	0.0308	1.0000e-005	1.1000e-004	3.0000e-005	1.4000e-004	3.0000e-005	3.0000e-005	6.0000e-005	0.0000	0.6692	0.6692	1.0000e-005	0.0000	0.6694
Worker	1.2100e-003	3.6000e-004	4.9000e-003	0.0000	2.0000e-004	1.0000e-005	2.1000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.2776	0.2776	2.0000e-005	0.0000	0.2781
Total	**0.0115**	**0.0262**	**0.1745**	**4.0000e-005**	**6.1000e-004**	**1.3000e-004**	**7.4000e-004**	**1.6000e-004**	**1.2000e-004**	**2.9000e-004**	**0.0000**	**3.1333**	**3.1333**	**7.0000e-005**	**0.0000**	**3.1349**

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	0.0237	0.4705	0.6857	1.0400e-003		0.0135	0.0135		0.0135	0.0135	0.0000	93.0031	93.0031	0.0186	0.0000	93.3927
Total	**0.0237**	**0.4705**	**0.6857**	**1.0400e-003**		**0.0135**	**0.0135**		**0.0135**	**0.0135**	**0.0000**	**93.0031**	**93.0031**	**0.0186**	**0.0000**	**93.3927**

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	8.2200e-003	0.0199	0.1388	3.0000e-005	3.0000e-004	9.0000e-005	3.9000e-004	8.0000e-005	8.0000e-005	1.7000e-004	0.0000	2.1865	2.1865	4.0000e-005	0.0000	2.1873
Vendor	2.0300e-003	6.0000e-003	0.0308	1.0000e-005	1.1000e-004	3.0000e-005	1.4000e-004	3.0000e-005	3.0000e-005	6.0000e-005	0.0000	0.6692	0.6692	1.0000e-005	0.0000	0.6694
Worker	1.2100e-003	3.6000e-004	4.9000e-003	0.0000	2.0000e-004	1.0000e-005	2.1000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.2776	0.2776	2.0000e-005	0.0000	0.2781
Total	**0.0115**	**0.0262**	**0.1745**	**4.0000e-005**	**6.1000e-004**	**1.3000e-004**	**7.4000e-004**	**1.6000e-004**	**1.2000e-004**	**2.9000e-004**	**0.0000**	**3.1333**	**3.1333**	**7.0000e-005**	**0.0000**	**3.1349**

3.4 1A_Excavation for EQ Area - 2017

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					
Fugitive Dust					1.1300e-003	0.0000	1.1300e-003	1.7000e-004	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0602	0.5715	0.4148	7.0000e-004		0.0322	0.0322		0.0309	0.0309	0.0000	62.4387	62.4387	0.0130	0.0000	62.7124
Total	**0.0602**	**0.5715**	**0.4148**	**7.0000e-004**	**1.1300e-003**	**0.0322**	**0.0334**	**1.7000e-004**	**0.0309**	**0.0311**	**0.0000**	**62.4387**	**62.4387**	**0.0130**	**0.0000**	**62.7124**

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	0.0148	0.0359	0.2504	5.0000e-005	5.5000e-004	1.6000e-004	7.1000e-004	1.5000e-004	1.5000e-004	3.0000e-004	0.0000	3.9438	3.9438	7.0000e-005	0.0000	3.9454
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	8.1000e-004	2.4000e-004	3.3000e-003	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1869	0.1869	2.0000e-005	0.0000	0.1872
Total	**0.0156**	**0.0361**	**0.2537**	**5.0000e-005**	**6.9000e-004**	**1.6000e-004**	**8.5000e-004**	**1.9000e-004**	**1.5000e-004**	**3.4000e-004**	**0.0000**	**4.1307**	**4.1307**	**9.0000e-005**	**0.0000**	**4.1326**

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					
Fugitive Dust					1.1300e-003	0.0000	1.1300e-003	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0164	0.3350	0.4594	7.0000e-004		9.5600e-003	9.5600e-003		9.5600e-003	9.5600e-003	0.0000	62.4386	62.4386	0.0130	0.0000	62.7123
Total	**0.0164**	**0.3350**	**0.4594**	**7.0000e-004**	**1.1300e-003**	**9.5600e-003**	**0.0107**	**9.0000e-005**	**9.5600e-003**	**9.6500e-003**	**0.0000**	**62.4386**	**62.4386**	**0.0130**	**0.0000**	**62.7123**

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	0.0148	0.0359	0.2504	5.0000e-005	5.5000e-004	1.6000e-004	7.1000e-004	1.5000e-004	1.5000e-004	3.0000e-004	0.0000	3.9438	3.9438	7.0000e-005	0.0000	3.9454
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	8.1000e-004	2.4000e-004	3.3000e-003	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1869	0.1869	2.0000e-005	0.0000	0.1872
Total	**0.0156**	**0.0361**	**0.2537**	**5.0000e-005**	**6.9000e-004**	**1.6000e-004**	**8.5000e-004**	**1.9000e-004**	**1.5000e-004**	**3.4000e-004**	**0.0000**	**4.1307**	**4.1307**	**9.0000e-005**	**0.0000**	**4.1326**

3.5 1A_Concrete plug and micro piles - 2017

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	0.0172	0.1472	0.1104	2.3000e-004		8.7800e-003	8.7800e-003		8.7000e-003	8.7000e-003	0.0000	20.2081	20.2081	3.0700e-003	0.0000	20.2725
Total	**0.0172**	**0.1472**	**0.1104**	**2.3000e-004**		**8.7800e-003**	**8.7800e-003**		**8.7000e-003**	**8.7000e-003**	**0.0000**	**20.2081**	**20.2081**	**3.0700e-003**	**0.0000**	**20.2725**

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	2.0000e-005	6.0000e-005	4.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	6.3100e-003	6.3100e-003	0.0000	0.0000	6.3100e-003
Vendor	5.2000e-004	1.5400e-003	7.9000e-003	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1716	0.1716	0.0000	0.0000	0.1716
Worker	3.1000e-004	9.0000e-005	1.2600e-003	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0712	0.0712	1.0000e-005	0.0000	0.0713
Total	**8.5000e-004**	**1.6900e-003**	**9.5600e-003**	**0.0000**	**8.0000e-005**	**1.0000e-005**	**9.0000e-005**	**2.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**0.2491**	**0.2491**	**1.0000e-005**	**0.0000**	**0.2493**

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	3.2700e-003	0.0634	0.1367	2.3000e-004		1.4100e-003	1.4100e-003		1.4100e-003	1.4100e-003	0.0000	20.2081	20.2081	3.0700e-003	0.0000	20.2724
Total	**3.2700e-003**	**0.0634**	**0.1367**	**2.3000e-004**		**1.4100e-003**	**1.4100e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**20.2081**	**20.2081**	**3.0700e-003**	**0.0000**	**20.2724**

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	2.0000e-005	6.0000e-005	4.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	6.3100e-003	6.3100e-003	0.0000	0.0000	6.3100e-003
Vendor	5.2000e-004	1.5400e-003	7.9000e-003	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1716	0.1716	0.0000	0.0000	0.1716
Worker	3.1000e-004	9.0000e-005	1.2600e-003	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0712	0.0712	1.0000e-005	0.0000	0.0713
Total	**8.5000e-004**	**1.6900e-003**	**9.5600e-003**	**0.0000**	**8.0000e-005**	**1.0000e-005**	**9.0000e-005**	**2.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**0.2491**	**0.2491**	**1.0000e-005**	**0.0000**	**0.2493**

3.6 1A_Internal Base and Wall Construction - 2017

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	0.0274	0.2357	0.1756	3.2000e-004		0.0144	0.0144		0.0142	0.0142	0.0000	27.8338	27.8338	3.4300e-003	0.0000	27.9058
Total	**0.0274**	**0.2357**	**0.1756**	**3.2000e-004**		**0.0144**	**0.0144**		**0.0142**	**0.0142**	**0.0000**	**27.8338**	**27.8338**	**3.4300e-003**	**0.0000**	**27.9058**

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	1.4000e-004	3.3000e-004	2.3200e-003	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0365	0.0365	0.0000	0.0000	0.0366
Vendor	1.0400e-003	3.0800e-003	0.0158	0.0000	6.0000e-005	2.0000e-005	7.0000e-005	2.0000e-005	2.0000e-005	3.0000e-005	0.0000	0.3432	0.3432	1.0000e-005	0.0000	0.3433
Worker	6.2000e-004	1.9000e-004	2.5100e-003	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1424	0.1424	1.0000e-005	0.0000	0.1426
Total	**1.8000e-003**	**3.6000e-003**	**0.0206**	**0.0000**	**1.7000e-004**	**2.0000e-005**	**1.9000e-004**	**5.0000e-005**	**2.0000e-005**	**6.0000e-005**	**0.0000**	**0.5221**	**0.5221**	**2.0000e-005**	**0.0000**	**0.5225**

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	4.3200e-003	0.0611	0.1954	3.2000e-004		1.6500e-003	1.6500e-003		1.6500e-003	1.6500e-003	0.0000	27.8337	27.8337	3.4300e-003	0.0000	27.9058
Total	**4.3200e-003**	**0.0611**	**0.1954**	**3.2000e-004**		**1.6500e-003**	**1.6500e-003**		**1.6500e-003**	**1.6500e-003**	**0.0000**	**27.8337**	**27.8337**	**3.4300e-003**	**0.0000**	**27.9058**

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	1.4000e-004	3.3000e-004	2.3200e-003	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0365	0.0365	0.0000	0.0000	0.0366
Vendor	1.0400e-003	3.0800e-003	0.0158	0.0000	6.0000e-005	2.0000e-005	7.0000e-005	2.0000e-005	2.0000e-005	3.0000e-005	0.0000	0.3432	0.3432	1.0000e-005	0.0000	0.3433
Worker	6.2000e-004	1.9000e-004	2.5100e-003	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1424	0.1424	1.0000e-005	0.0000	0.1426
Total	**1.8000e-003**	**3.6000e-003**	**0.0206**	**0.0000**	**1.7000e-004**	**2.0000e-005**	**1.9000e-004**	**5.0000e-005**	**2.0000e-005**	**6.0000e-005**	**0.0000**	**0.5221**	**0.5221**	**2.0000e-005**	**0.0000**	**0.5225**

3.6 1A_Internal Base and Wall Construction - 2018

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	0.0218	0.1927	0.1559	2.9000e-004		0.0112	0.0112		0.0111	0.0111	0.0000	24.9741	24.9741	2.9100e-003	0.0000	25.0352
Total	**0.0218**	**0.1927**	**0.1559**	**2.9000e-004**		**0.0112**	**0.0112**		**0.0111**	**0.0111**	**0.0000**	**24.9741**	**24.9741**	**2.9100e-003**	**0.0000**	**25.0352**

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	1.1000e-004	2.8000e-004	2.0100e-003	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0323	0.0323	0.0000	0.0000	0.0323
Vendor	8.6000e-004	2.6000e-003	0.0136	0.0000	5.0000e-005	1.0000e-005	6.0000e-005	1.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3036	0.3036	0.0000	0.0000	0.3037
Worker	5.2000e-004	1.5000e-004	2.0500e-003	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1235	0.1235	1.0000e-005	0.0000	0.1237
Total	**1.4900e-003**	**3.0300e-003**	**0.0176**	**0.0000**	**1.5000e-004**	**1.0000e-005**	**1.7000e-004**	**4.0000e-005**	**1.0000e-005**	**6.0000e-005**	**0.0000**	**0.4594**	**0.4594**	**1.0000e-005**	**0.0000**	**0.4597**

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	3.8900e-003	0.0550	0.1758	2.9000e-004		1.4900e-003	1.4900e-003		1.4900e-003	1.4900e-003	0.0000	24.9741	24.9741	2.9100e-003	0.0000	25.0351
Total	**3.8900e-003**	**0.0550**	**0.1758**	**2.9000e-004**		**1.4900e-003**	**1.4900e-003**		**1.4900e-003**	**1.4900e-003**	**0.0000**	**24.9741**	**24.9741**	**2.9100e-003**	**0.0000**	**25.0351**

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	1.1000e-004	2.8000e-004	2.0100e-003	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0323	0.0323	0.0000	0.0000	0.0323
Vendor	8.6000e-004	2.6000e-003	0.0136	0.0000	5.0000e-005	1.0000e-005	6.0000e-005	1.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3036	0.3036	0.0000	0.0000	0.3037
Worker	5.2000e-004	1.5000e-004	2.0500e-003	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1235	0.1235	1.0000e-005	0.0000	0.1237
Total	**1.4900e-003**	**3.0300e-003**	**0.0176**	**0.0000**	**1.5000e-004**	**1.0000e-005**	**1.7000e-004**	**4.0000e-005**	**1.0000e-005**	**6.0000e-005**	**0.0000**	**0.4594**	**0.4594**	**1.0000e-005**	**0.0000**	**0.4597**

3.7 1A_Precast EQBasin Roof - 2018

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	0.0134	0.1222	0.0894	1.7000e-004		6.9100e-003	6.9100e-003		6.7700e-003	6.7700e-003	0.0000	14.5798	14.5798	1.8400e-003	0.0000	14.6183

Total	**0.0134**	**0.1222**	**0.0894**	**1.7000e-004**		**6.9100e-003**	**6.9100e-003**		**6.7700e-003**	**6.7700e-003**	**0.0000**	**14.5798**	**14.5798**	**1.8400e-003**	**0.0000**	**14.6183**

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	5.6000e-004	1.6900e-003	8.8000e-003	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1968	0.1968	0.0000	0.0000	0.1968
Worker	2.9000e-004	8.0000e-005	1.1400e-003	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0686	0.0686	1.0000e-005	0.0000	0.0687
Total	**8.5000e-004**	**1.7700e-003**	**9.9400e-003**	**0.0000**	**8.0000e-005**	**1.0000e-005**	**9.0000e-005**	**2.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**0.2654**	**0.2654**	**1.0000e-005**	**0.0000**	**0.2656**

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	2.2000e-003	0.0362	0.1003	1.7000e-004		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	14.5797	14.5797	1.8400e-003	0.0000	14.6183
Total	**2.2000e-003**	**0.0362**	**0.1003**	**1.7000e-004**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**14.5797**	**14.5797**	**1.8400e-003**	**0.0000**	**14.6183**

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	5.6000e-004	1.6900e-003	8.8000e-003	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1968	0.1968	0.0000	0.0000	0.1968
Worker	2.9000e-004	8.0000e-005	1.1400e-003	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0686	0.0686	1.0000e-005	0.0000	0.0687
Total	**8.5000e-004**	**1.7700e-003**	**9.9400e-003**	**0.0000**	**8.0000e-005**	**1.0000e-005**	**9.0000e-005**	**2.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**0.2654**	**0.2654**	**1.0000e-005**	**0.0000**	**0.2656**

3.8 2_Electrical Conduit Placement - 2018

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	4.7900e-003	0.0407	0.0369	6.0000e-005		2.6600e-003	2.6600e-003		2.6100e-003	2.6100e-003	0.0000	5.3031	5.3031	6.4000e-004	0.0000	5.3165
Total	**4.7900e-003**	**0.0407**	**0.0369**	**6.0000e-005**		**2.6600e-003**	**2.6600e-003**		**2.6100e-003**	**2.6100e-003**	**0.0000**	**5.3031**	**5.3031**	**6.4000e-004**	**0.0000**	**5.3165**

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	2.0000e-005	5.0000e-005	3.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	6.2000e-003	6.2000e-003	0.0000	0.0000	6.2000e-003
Vendor	4.8000e-004	1.4500e-003	7.5400e-003	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1687	0.1687	0.0000	0.0000	0.1687
Worker	2.9000e-004	8.0000e-005	1.1400e-003	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0686	0.0686	1.0000e-005	0.0000	0.0687
Total	**7.9000e-004**	**1.5800e-003**	**9.0700e-003**	**0.0000**	**8.0000e-005**	**1.0000e-005**	**9.0000e-005**	**2.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**0.2435**	**0.2435**	**1.0000e-005**	**0.0000**	**0.2437**

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	1.0400e-003	0.0134	0.0392	6.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	5.3031	5.3031	6.4000e-004	0.0000	5.3165
Total	**1.0400e-003**	**0.0134**	**0.0392**	**6.0000e-005**		**5.2000e-004**	**5.2000e-004**		**5.2000e-004**	**5.2000e-004**	**0.0000**	**5.3031**	**5.3031**	**6.4000e-004**	**0.0000**	**5.3165**

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	2.0000e-005	5.0000e-005	3.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	6.2000e-003	6.2000e-003	0.0000	0.0000	6.2000e-003
Vendor	4.8000e-004	1.4500e-003	7.5400e-003	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1687	0.1687	0.0000	0.0000	0.1687
Worker	2.9000e-004	8.0000e-005	1.1400e-003	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0686	0.0686	1.0000e-005	0.0000	0.0687
Total	**7.9000e-004**	**1.5800e-003**	**9.0700e-003**	**0.0000**	**8.0000e-005**	**1.0000e-005**	**9.0000e-005**	**2.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**0.2435**	**0.2435**	**1.0000e-005**	**0.0000**	**0.2437**

3.9 3_Odor Control System Construction - 2018

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	4.7700e-003	0.0418	0.0341	6.0000e-005		2.5000e-003	2.5000e-003		2.4600e-003	2.4600e-003	0.0000	5.4050	5.4050	6.7000e-004	0.0000	5.4191
Total	**4.7700e-003**	**0.0418**	**0.0341**	**6.0000e-005**		**2.5000e-003**	**2.5000e-003**		**2.4600e-003**	**2.4600e-003**	**0.0000**	**5.4050**	**5.4050**	**6.7000e-004**	**0.0000**	**5.4191**

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	1.9000e-004	4.6000e-004	3.2800e-003	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0527	0.0527	0.0000	0.0000	0.0527
Vendor	6.0000e-004	1.8100e-003	9.4300e-003	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.2108	0.2108	0.0000	0.0000	0.2109
Worker	3.6000e-004	1.0000e-004	1.4200e-003	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0858	0.0858	1.0000e-005	0.0000	0.0859
Total	**1.1500e-003**	**2.3700e-003**	**0.0141**	**0.0000**	**1.1000e-004**	**1.0000e-005**	**1.2000e-004**	**3.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**0.3493**	**0.3493**	**1.0000e-005**	**0.0000**	**0.3495**

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	9.2000e-004	0.0136	0.0384	6.0000e-005		4.0000e-004	4.0000e-004		4.0000e-004	4.0000e-004	0.0000	5.4050	5.4050	6.7000e-004	0.0000	5.4191
Total	**9.2000e-004**	**0.0136**	**0.0384**	**6.0000e-005**		**4.0000e-004**	**4.0000e-004**		**4.0000e-004**	**4.0000e-004**	**0.0000**	**5.4050**	**5.4050**	**6.7000e-004**	**0.0000**	**5.4191**

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	1.9000e-004	4.6000e-004	3.2800e-003	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0527	0.0527	0.0000	0.0000	0.0527
Vendor	6.0000e-004	1.8100e-003	9.4300e-003	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.2108	0.2108	0.0000	0.0000	0.2109
Worker	3.6000e-004	1.0000e-004	1.4200e-003	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0858	0.0858	1.0000e-005	0.0000	0.0859
Total	**1.1500e-003**	**2.3700e-003**	**0.0141**	**0.0000**	**1.1000e-004**	**1.0000e-005**	**1.2000e-004**	**3.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**0.3493**	**0.3493**	**1.0000e-005**	**0.0000**	**0.3495**

3.10 2_Pre Fabricated Bldg and Electrical Control Center - 2018

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	7.5300e-003	0.0650	0.0535	9.0000e-005		3.9600e-003	3.9600e-003		3.9100e-003	3.9100e-003	0.0000	8.2126	8.2126	8.6000e-004	0.0000	8.2306

Total	**7.5300e-003**	**0.0650**	**0.0535**	**9.0000e-005**		**3.9600e-003**	**3.9600e-003**		**3.9100e-003**	**3.9100e-003**	**0.0000**	**8.2126**	**8.2126**	**8.6000e-004**	**0.0000**	**8.2306**

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	7.2000e-004	2.1700e-003	0.0113	0.0000	4.0000e-005	1.0000e-005	5.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.2530	0.2530	0.0000	0.0000	0.2531
Worker	4.3000e-004	1.2000e-004	1.7000e-003	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1029	0.1029	1.0000e-005	0.0000	0.1031
Total	**1.1500e-003**	**2.2900e-003**	**0.0130**	**0.0000**	**1.2000e-004**	**1.0000e-005**	**1.3000e-004**	**3.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**0.3559**	**0.3559**	**1.0000e-005**	**0.0000**	**0.3562**

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	1.2100e-003	0.0144	0.0583	9.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	8.2125	8.2125	8.6000e-004	0.0000	8.2306
Total	**1.2100e-003**	**0.0144**	**0.0583**	**9.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**	**0.0000**	**8.2125**	**8.2125**	**8.6000e-004**	**0.0000**	**8.2306**

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	7.2000e-004	2.1700e-003	0.0113	0.0000	4.0000e-005	1.0000e-005	5.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.2530	0.2530	0.0000	0.0000	0.2531
Worker	4.3000e-004	1.2000e-004	1.7000e-003	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1029	0.1029	1.0000e-005	0.0000	0.1031
Total	**1.1500e-003**	**2.2900e-003**	**0.0130**	**0.0000**	**1.2000e-004**	**1.0000e-005**	**1.3000e-004**	**3.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**0.3559**	**0.3559**	**1.0000e-005**	**0.0000**	**0.3562**

3.11 4_Finished Grading - 2018

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					
Fugitive Dust					8.1000e-004	0.0000	8.1000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3300e-003	0.0244	0.0137	2.0000e-005		1.3000e-003	1.3000e-003		1.2000e-003	1.2000e-003	0.0000	2.1034	2.1034	6.5000e-004	0.0000	2.1172
Total	**2.3300e-003**	**0.0244**	**0.0137**	**2.0000e-005**	**8.1000e-004**	**1.3000e-003**	**2.1100e-003**	**9.0000e-005**	**1.2000e-003**	**1.2900e-003**	**0.0000**	**2.1034**	**2.1034**	**6.5000e-004**	**0.0000**	**2.1172**

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	1.3000e-004	3.1000e-004	2.2200e-003	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0356	0.0356	0.0000	0.0000	0.0357
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	1.5000e-004	4.0000e-005	6.1000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0368	0.0368	0.0000	0.0000	0.0368
Total	**2.8000e-004**	**3.5000e-004**	**2.8300e-003**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0724**	**0.0724**	**0.0000**	**0.0000**	**0.0725**

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					
Fugitive Dust					8.1000e-004	0.0000	8.1000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.4000e-004	0.0203	0.0157	2.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	2.1034	2.1034	6.5000e-004	0.0000	2.1172
Total	**8.4000e-004**	**0.0203**	**0.0157**	**2.0000e-005**	**8.1000e-004**	**6.2000e-004**	**1.4300e-003**	**4.0000e-005**	**6.2000e-004**	**6.6000e-004**	**0.0000**	**2.1034**	**2.1034**	**6.5000e-004**	**0.0000**	**2.1172**

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	1.3000e-004	3.1000e-004	2.2200e-003	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0356	0.0356	0.0000	0.0000	0.0357
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	1.5000e-004	4.0000e-005	6.1000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0368	0.0368	0.0000	0.0000	0.0368
Total	**2.8000e-004**	**3.5000e-004**	**2.8300e-003**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0724**	**0.0724**	**0.0000**	**0.0000**	**0.0725**

3.12 4_Parking Lot Lighting - 2018

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	2.1700e-003	0.0192	0.0149	3.0000e-005		1.1200e-003	1.1200e-003		1.1100e-003	1.1100e-003	0.0000	2.3480	2.3480	2.6000e-004	0.0000	2.3534
Total	**2.1700e-003**	**0.0192**	**0.0149**	**3.0000e-005**		**1.1200e-003**	**1.1200e-003**		**1.1100e-003**	**1.1100e-003**	**0.0000**	**2.3480**	**2.3480**	**2.6000e-004**	**0.0000**	**2.3534**

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	2.2000e-004	6.5000e-004	3.4000e-003	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0759	0.0759	0.0000	0.0000	0.0759
Worker	1.3000e-004	4.0000e-005	5.1000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0309	0.0309	0.0000	0.0000	0.0309
Total	**3.5000e-004**	**6.9000e-004**	**3.9100e-003**	**0.0000**	**3.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.1068**	**0.1068**	**0.0000**	**0.0000**	**0.1069**

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	3.3000e-004	4.5000e-003	0.0163	3.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	2.3480	2.3480	2.6000e-004	0.0000	2.3534
Total	**3.3000e-004**	**4.5000e-003**	**0.0163**	**3.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**2.3480**	**2.3480**	**2.6000e-004**	**0.0000**	**2.3534**

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	2.2000e-004	6.5000e-004	3.4000e-003	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0759	0.0759	0.0000	0.0000	0.0759
Worker	1.3000e-004	4.0000e-005	5.1000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0309	0.0309	0.0000	0.0000	0.0309
Total	**3.5000e-004**	**6.9000e-004**	**3.9100e-003**	**0.0000**	**3.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.1068**	**0.1068**	**0.0000**	**0.0000**	**0.1069**

3.13 4_Concrete Curb/AC Pavement - 2018

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	5.2000e-003	0.0456	0.0395	7.0000e-005		2.8300e-003	2.8300e-003		2.7600e-003	2.7600e-003	0.0000	5.7513	5.7513	7.8000e-004	0.0000	5.7677

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.2000e-003**	**0.0456**	**0.0395**	**7.0000e-005**		**2.8300e-003**	**2.8300e-003**		**2.7600e-003**	**2.7600e-003**	**0.0000**	**5.7513**	**5.7513**	**7.8000e-004**	**0.0000**	**5.7677**

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	2.5000e-004	6.3000e-004	4.4400e-003	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0713	0.0713	0.0000	0.0000	0.0713
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	2.5000e-004	7.0000e-005	1.0000e-003	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0605	0.0605	0.0000	0.0000	0.0606
Total	**5.0000e-004**	**7.0000e-004**	**5.4400e-003**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.1318**	**0.1318**	**0.0000**	**0.0000**	**0.1319**

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	1.2000e-003	0.0172	0.0430	7.0000e-005		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	5.7513	5.7513	7.8000e-004	0.0000	5.7677
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.2000e-003**	**0.0172**	**0.0430**	**7.0000e-005**		**5.9000e-004**	**5.9000e-004**		**5.9000e-004**	**5.9000e-004**	**0.0000**	**5.7513**	**5.7513**	**7.8000e-004**	**0.0000**	**5.7677**

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	2.5000e-004	6.3000e-004	4.4400e-003	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0713	0.0713	0.0000	0.0000	0.0713
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	2.5000e-004	7.0000e-005	1.0000e-003	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0605	0.0605	0.0000	0.0000	0.0606
Total	**5.0000e-004**	**7.0000e-004**	**5.4400e-003**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.1318**	**0.1318**	**0.0000**	**0.0000**	**0.1319**

3.14 4_Landscaping - 2018

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					
Fugitive Dust					1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3400e-003	0.0144	0.0140	2.0000e-005		9.2000e-004	9.2000e-004		8.5000e-004	8.5000e-004	0.0000	1.7662	1.7662	5.5000e-004	0.0000	1.7778
Total	**1.3400e-003**	**0.0144**	**0.0140**	**2.0000e-005**	**1.0000e-005**	**9.2000e-004**	**9.3000e-004**	**0.0000**	**8.5000e-004**	**8.5000e-004**	**0.0000**	**1.7662**	**1.7662**	**5.5000e-004**	**0.0000**	**1.7778**

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	6.0000e-005	1.5000e-004	1.0600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0170	0.0170	0.0000	0.0000	0.0171
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	7.0000e-005	2.0000e-005	2.8000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0172	0.0172	0.0000	0.0000	0.0172
Total	**1.3000e-004**	**1.7000e-004**	**1.3400e-003**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0342**	**0.0342**	**0.0000**	**0.0000**	**0.0342**

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					
Fugitive Dust					1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.1000e-004	0.0188	0.0146	2.0000e-005		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	1.7662	1.7662	5.5000e-004	0.0000	1.7778
Total	**9.1000e-004**	**0.0188**	**0.0146**	**2.0000e-005**	**1.0000e-005**	**7.6000e-004**	**7.7000e-004**	**0.0000**	**7.6000e-004**	**7.6000e-004**	**0.0000**	**1.7662**	**1.7662**	**5.5000e-004**	**0.0000**	**1.7778**

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	6.0000e-005	1.5000e-004	1.0600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0170	0.0170	0.0000	0.0000	0.0171
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	7.0000e-005	2.0000e-005	2.8000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0172	0.0172	0.0000	0.0000	0.0172
Total	**1.3000e-004**	**1.7000e-004**	**1.3400e-003**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0342**	**0.0342**	**0.0000**	**0.0000**	**0.0342**

Off-Site Construction Emissions

Pacifica, Conveyance System

San Mateo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	22.59	1000sqft	0.52	22,565.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	429.6	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Revised CO2 Emission Intensity

Land Use - From Project Description

Construction Phase - Applicant Provided Construction Schedule

Off-road Equipment - Applicant Provided Equipment List

Off-road Equipment - Applicant Provided Equipment List

Off-road Equipment - Applicant Provided Equipment List

Off-road Equipment - Applicant Provided Equipment List

Off-road Equipment - Applicant provided equipment list

Trips and VMT - 0.5 miles for community risk assessment

Construction Off-road Equipment Mitigation - Best Management Practices
Tier 2 Mitigation for all equipment>25 HP
Tier 4 portable

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	100.00	15.00
tblConstructionPhase	PhaseEndDate	4/27/2018	4/6/2018
tblConstructionPhase	PhaseEndDate	4/20/2018	4/6/2018
tblConstructionPhase	PhaseEndDate	7/11/2018	7/12/2018
tblConstructionPhase	PhaseEndDate	8/2/2018	8/6/2018
tblConstructionPhase	PhaseStartDate	4/7/2018	3/19/2018
tblConstructionPhase	PhaseStartDate	4/7/2018	3/26/2018
tblConstructionPhase	PhaseStartDate	4/7/2018	4/10/2018
tblConstructionPhase	PhaseStartDate	7/13/2018	7/17/2018
tblLandUse	LandUseSquareFeet	22,590.00	22,565.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	4.00	6.00
tblOffRoadEquipment	UsageHours	8.00	3.70
tblProjectCharacteristics	CO2IntensityFactor	641.35	429.6
tblProjectCharacteristics	OperationalYear	2014	2019
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripNumber	0.00	20.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	20.00
tblTripsAndVMT	HaulingTripNumber	0.00	400.00
tblTripsAndVMT	HaulingTripNumber	0.00	100.00
tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50
tblTripsAndVMT	WorkerTripLength	12.40	0.50

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					
2018	0.1286	1.1174	1.0337	1.6900e-003	5.9000e-004	0.0655	0.0660	1.6000e-004	0.0634	0.0636	0.0000	149.0949	149.0949	0.0261	0.0000	149.6434
Total	**0.1286**	**1.1174**	**1.0337**	**1.6900e-003**	**5.9000e-004**	**0.0655**	**0.0660**	**1.6000e-004**	**0.0634**	**0.0636**	**0.0000**	**149.0949**	**149.0949**	**0.0261**	**0.0000**	**149.6434**

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					
2018	0.0419	0.6668	1.1627	1.6900e-003	5.9000e-004	0.0206	0.0212	1.6000e-004	0.0206	0.0208	0.0000	149.0947	149.0947	0.0261	0.0000	149.6432
Total	**0.0419**	**0.6668**	**1.1627**	**1.6900e-003**	**5.9000e-004**	**0.0206**	**0.0212**	**1.6000e-004**	**0.0206**	**0.0208**	**0.0000**	**149.0947**	**149.0947**	**0.0261**	**0.0000**	**149.6432**

	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	**67.45**	**40.32**	**-12.48**	**0.00**	**0.00**	**68.54**	**67.91**	**0.00**	**67.53**	**67.36**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	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					
Area	0.0999	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.3000e-004
Energy	3.1200e-003	0.0284	0.0239	1.7000e-004		2.1600e-003	2.1600e-003		2.1600e-003	2.1600e-003	0.0000	67.2866	67.2866	3.0500e-003	1.0700e-003	67.6838
Mobile	0.0590	0.1269	0.6432	1.6900e-003	0.1283	1.8600e-003	0.1301	0.0344	1.7200e-003	0.0361	0.0000	120.8359	120.8359	4.8100e-003	0.0000	120.9368
Waste						0.0000	0.0000		0.0000	0.0000	5.6858	0.0000	5.6858	0.3360	0.0000	12.7422
Water						0.0000	0.0000		0.0000	0.0000	1.6573	5.5082	7.1655	0.1706	4.1000e-003	12.0178
Total	**0.1620**	**0.1553**	**0.6673**	**1.8600e-003**	**0.1283**	**4.0200e-003**	**0.1323**	**0.0344**	**3.8800e-003**	**0.0383**	**7.3431**	**193.6311**	**200.9742**	**0.5145**	**5.1700e-003**	**213.3810**

Mitigated Operational

	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					
Area	0.0999	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.3000e-004
Energy	3.1200e-003	0.0284	0.0239	1.7000e-004		2.1600e-003	2.1600e-003		2.1600e-003	2.1600e-003	0.0000	67.2866	67.2866	3.0500e-003	1.0700e-003	67.6838
Mobile	0.0590	0.1269	0.6432	1.6900e-003	0.1283	1.8600e-003	0.1301	0.0344	1.7200e-003	0.0361	0.0000	120.8359	120.8359	4.8100e-003	0.0000	120.9368
Waste						0.0000	0.0000		0.0000	0.0000	5.6858	0.0000	5.6858	0.3360	0.0000	12.7422
Water						0.0000	0.0000		0.0000	0.0000	1.6573	5.5082	7.1655	0.1706	4.0900e-003	12.0151
Total	**0.1620**	**0.1553**	**0.6673**	**1.8600e-003**	**0.1283**	**4.0200e-003**	**0.1323**	**0.0344**	**3.8800e-003**	**0.0383**	**7.3431**	**193.6311**	**200.9742**	**0.5144**	**5.1600e-003**	**213.3784**

	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**	**0.01**	**0.19**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	EQ Basin, Effluent Piping	Trenching	3/19/2018	4/6/2018	5	15	
2	Vault Construction and Pump Piping, Diversion Structures	Building Construction	3/19/2018	4/6/2018	5	15	
3	Water Service Line	Trenching	3/26/2018	4/6/2018	5	10	
4	Influent Conveyance Pipe, Diversion	Trenching	4/10/2018	7/12/2018	5	68	
5	Jack and Bore Casing	Trenching	7/17/2018	8/6/2018	5	15	

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 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
EQ Basi Effluent PipingiGenerator Setii5.i8i0.7i					
EQ Basi Effluent PipingiGraderiii17i0.4i					
EQ Basi Effluent PipingiPumpiii8i0.7i					
EQ Basi Effluent PipingiRubber Tired Dozeriii25i0.i					
EQ Basi Effluent PipingiRubber Tired Loaderii2.i19i0.3i					

EQ Basi Effluent PipingiTractors/Loaders/Backhoeii2.i9i0.3i					
EQ Basi Effluent PipingiTractors/Loaders/Backhoeii5.i9i0.3i					
Influent Conveyance Pip DiversionpExcavatorpp7.p16p0.3p					
Influent Conveyance Pip DiversionpExcavatorpp7.p16p0.3p					
Influent Conveyance Pip					
Influent Conveyance Pip DiversionpGraderppp17p0.4p					
Influent Conveyance Pip DiversionnPaverpp0.p12p0.4p					
Influent Conveyance Pip DiversionnPumppp7.p8p0.7p					
Influent Conveyance Pip DiversionpRollerpp0.p8p0.3p					
Influent Conveyance Pip DiversionpRubber Tired Dozerppp25p0.p					
Influent Conveyance Pip DiversionpRubber Tired Loaderpp3.p19p0.3p					
Influent Conveyance Pip DiversionpTractors/Loaders/Backhoepp7.p9p0.3p					
Vault Construction and Pump Pipin Diversion StructuresnConcrete/Industrial Sawnnn8n0.7n					
Vault Construction and Pump Pipin Diversion StructuresnCranennn22n0.2n					
Vault Construction and Pump Pipin Diversion StructuresnForkliftnnn8n0.n					
Vault Construction and Pump Pipin Diversion StructuresnGenerator Setnnn8n0.7n					
Vault Construction and Pump Pipin Diversion StructuresnRubber Tired Dozernnn25n0.n					

Vault Construction and Pump Pipin Diversion StructuresnTractors/Loaders/Backhoen					
Vault Construction and Pump Pipin Diversion StructuresnWeldernnn4n0 4n					
EQ Basin, Effluent Piping	Generator Sets	1	5.30	84	0.74
EQ Basin, Effluent Piping	Graders	0	8.00	174	0.41
EQ Basin, Effluent Piping	Pumps	1	8.00	84	0.74
EQ Basin, Effluent Piping	Rubber Tired Dozers	0	7.00	255	0.40
EQ Basin, Effluent Piping	Rubber Tired Loaders	1	2.10	199	0.36
EQ Basin, Effluent Piping	Tractors/Loaders/Backhoes	1	5.30	97	0.37
EQ Basin, Effluent Piping	Tractors/Loaders/Backhoes	1	2.70	97	0.37
Vault Construction and Pump Piping, Diversion Structures	Concrete/Industrial Saws	0	8.00	81	0.73
Vault Construction and Pump Piping, Diversion Structures	Cranes	0	6.00	226	0.29
Vault Construction and Pump Piping, Diversion Structures	Forklifts	0	6.00	89	0.20
Vault Construction and Pump Piping, Diversion Structures	Generator Sets	2	8.00	84	0.74
Vault Construction and Pump Piping, Diversion Structures	Rubber Tired Dozers	0	8.00	255	0.40
Vault Construction and Pump Piping, Diversion Structures	Tractors/Loaders/Backhoes	1	3.70	97	0.37
Vault Construction and Pump Piping, Diversion Structures	Welders	0	8.00	46	0.45
Water Service Line	Generator Sets	1	8.00	84	0.74
Water Service Line	Pumps	1	12.00	84	0.74
Water Service Line	Rubber Tired Loaders	1	3.20	199	0.36
Water Service Line	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Water Service Line	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Influent Conveyance Pipe, Diversion	Excavators	1	7.10	162	0.38
Influent Conveyance Pipe, Diversion	Excavators	1	7.10	162	0.38
Influent Conveyance Pipe, Diversion	Generator Sets	1	7.10	84	0.74
Influent Conveyance Pipe, Diversion	Graders	0	6.00	174	0.41

Influent Conveyance Pipe, Diversion	Pavers	1	0.80	125	0.42
Influent Conveyance Pipe, Diversion	Pumps	2	7.10	84	0.74
Influent Conveyance Pipe, Diversion	Rollers	1	0.80	80	0.38
Influent Conveyance Pipe, Diversion	Rubber Tired Dozers	0	6.00	255	0.40
Influent Conveyance Pipe, Diversion	Rubber Tired Loaders	1	3.50	199	0.36
Influent Conveyance Pipe, Diversion	Tractors/Loaders/Backhoes	1	7.10	97	0.37
Jack and Bore Casing	Bore/Drill Rigs	1	2.70	205	0.50
Jack and Bore Casing	Cranes	0	6.00	226	0.29
Jack and Bore Casing	Excavators	2	2.70	162	0.38
Jack and Bore Casing	Excavators	2	1.60	162	0.38
Jack and Bore Casing	Forklifts	0	6.00	89	0.20
Jack and Bore Casing	Generator Sets	1	5.30	84	0.74
Jack and Bore Casing	Pumps	2	6.90	84	0.74
Jack and Bore Casing	Rubber Tired Loaders	2	1.30	199	0.36
Jack and Bore Casing	Tractors/Loaders/Backhoes	2	1.30	97	0.37
Jack and Bore Casing	Welders	0	8.00	46	0.45

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
EQ Basin, Effluent Piping	5	13.00	0.00	20.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Vault Construction and Pump Piping, Diversion Structures	3	9.00	4.00	2.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Water Service Line	5	13.00	0.00	20.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Influent Conveyance Pipe, Diversion	9	23.00	0.00	400.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Jack and Bore Casing	12	30.00	0.00	100.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 EQ Basin, Effluent Piping - 2018

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	9.3200e-003	0.0818	0.0680	1.2000e-004		5.1200e-003	5.1200e-003		4.9800e-003	4.9800e-003	0.0000	10.2766	10.2766	1.5300e-003	0.0000	10.3087
Total	**9.3200e-003**	**0.0818**	**0.0680**	**1.2000e-004**		**5.1200e-003**	**5.1200e-003**		**4.9800e-003**	**4.9800e-003**	**0.0000**	**10.2766**	**10.2766**	**1.5300e-003**	**0.0000**	**10.3087**

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	1.1000e-004	2.7000e-004	1.9300e-003	0.0000	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0310	0.0310	0.0000	0.0000	0.0310
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	2.0000e-004	6.0000e-005	7.9000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0478	0.0478	0.0000	0.0000	0.0479
Total	**3.1000e-004**	**3.3000e-004**	**2.7200e-003**	**0.0000**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0788**	**0.0788**	**0.0000**	**0.0000**	**0.0789**

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	2.2100e-003	0.0364	0.0746	1.2000e-004		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	10.2765	10.2765	1.5300e-003	0.0000	10.3086
Total	**2.2100e-003**	**0.0364**	**0.0746**	**1.2000e-004**		**1.2400e-003**	**1.2400e-003**		**1.2400e-003**	**1.2400e-003**	**0.0000**	**10.2765**	**10.2765**	**1.5300e-003**	**0.0000**	**10.3086**

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	1.1000e-004	2.7000e-004	1.9300e-003	0.0000	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0310	0.0310	0.0000	0.0000	0.0310
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	2.0000e-004	6.0000e-005	7.9000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0478	0.0478	0.0000	0.0000	0.0479
Total	**3.1000e-004**	**3.3000e-004**	**2.7200e-003**	**0.0000**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0788**	**0.0788**	**0.0000**	**0.0000**	**0.0789**

3.3 Vault Construction and Pump Piping, Diversion Structures -

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	8.5000e-003	0.0708	0.0643	1.1000e-004		4.5800e-003	4.5800e-003		4.5200e-003	4.5200e-003	0.0000	9.4624	9.4624	9.2000e-004	0.0000	9.4816
Total	**8.5000e-003**	**0.0708**	**0.0643**	**1.1000e-004**		**4.5800e-003**	**4.5800e-003**		**4.5200e-003**	**4.5200e-003**	**0.0000**	**9.4624**	**9.4624**	**9.2000e-004**	**0.0000**	**9.4816**

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	1.0000e-005	3.0000e-005	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.1000e-003	3.1000e-003	0.0000	0.0000	3.1000e-003
Vendor	2.4000e-004	7.2000e-004	3.7700e-003	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0843	0.0843	0.0000	0.0000	0.0844
Worker	1.4000e-004	4.0000e-005	5.5000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0331	0.0331	0.0000	0.0000	0.0331
Total	**3.9000e-004**	**7.9000e-004**	**4.5100e-003**	**0.0000**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.1205**	**0.1205**	**0.0000**	**0.0000**	**0.1206**

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	1.4900e-003	0.0147	0.0690	1.1000e-004		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	9.4623	9.4623	9.2000e-004	0.0000	9.4816
Total	**1.4900e-003**	**0.0147**	**0.0690**	**1.1000e-004**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**9.4623**	**9.4623**	**9.2000e-004**	**0.0000**	**9.4816**

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	1.0000e-005	3.0000e-005	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.1000e-003	3.1000e-003	0.0000	0.0000	3.1000e-003
Vendor	2.4000e-004	7.2000e-004	3.7700e-003	0.0000	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0843	0.0843	0.0000	0.0000	0.0844
Worker	1.4000e-004	4.0000e-005	5.5000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0331	0.0331	0.0000	0.0000	0.0331
Total	**3.9000e-004**	**7.9000e-004**	**4.5100e-003**	**0.0000**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.1205**	**0.1205**	**0.0000**	**0.0000**	**0.1206**

3.4 Water Service Line - 2018

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	9.3500e-003	0.0820	0.0682	1.2000e-004		5.1300e-003	5.1300e-003		4.9900e-003	4.9900e-003	0.0000	10.3117	10.3117	1.5400e-003	0.0000	10.3439
Total	**9.3500e-003**	**0.0820**	**0.0682**	**1.2000e-004**		**5.1300e-003**	**5.1300e-003**		**4.9900e-003**	**4.9900e-003**	**0.0000**	**10.3117**	**10.3117**	**1.5400e-003**	**0.0000**	**10.3439**

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	1.1000e-004	2.7000e-004	1.9300e-003	0.0000	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0310	0.0310	0.0000	0.0000	0.0310
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	1.3000e-004	4.0000e-005	5.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0319	0.0319	0.0000	0.0000	0.0319
Total	**2.4000e-004**	**3.1000e-004**	**2.4600e-003**	**0.0000**	**2.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0628**	**0.0628**	**0.0000**	**0.0000**	**0.0629**

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	2.2200e-003	0.0366	0.0748	1.2000e-004		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	10.3117	10.3117	1.5400e-003	0.0000	10.3439
Total	**2.2200e-003**	**0.0366**	**0.0748**	**1.2000e-004**		**1.2400e-003**	**1.2400e-003**		**1.2400e-003**	**1.2400e-003**	**0.0000**	**10.3117**	**10.3117**	**1.5400e-003**	**0.0000**	**10.3439**

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	1.1000e-004	2.7000e-004	1.9300e-003	0.0000	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0310	0.0310	0.0000	0.0000	0.0310
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	1.3000e-004	4.0000e-005	5.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0319	0.0319	0.0000	0.0000	0.0319
Total	**2.4000e-004**	**3.1000e-004**	**2.4600e-003**	**0.0000**	**2.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0628**	**0.0628**	**0.0000**	**0.0000**	**0.0629**

3.5 Influent Conveyance Pipe, Diversion - 2018

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	0.0815	0.7449	0.6574	1.1200e-003		0.0433	0.0433		0.0418	0.0418	0.0000	99.4303	99.4303	0.0188	0.0000	99.8258
Total	**0.0815**	**0.7449**	**0.6574**	**1.1200e-003**		**0.0433**	**0.0433**		**0.0418**	**0.0418**	**0.0000**	**99.4303**	**99.4303**	**0.0188**	**0.0000**	**99.8258**

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	2.1900e-003	5.4500e-003	0.0386	1.0000e-005	9.0000e-005	3.0000e-005	1.1000e-004	2.0000e-005	2.0000e-005	5.0000e-005	0.0000	0.6198	0.6198	1.0000e-005	0.0000	0.6201
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	1.6000e-003	4.6000e-004	6.3500e-003	1.0000e-005	2.9000e-004	1.0000e-005	3.0000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	0.3832	0.3832	3.0000e-005	0.0000	0.3839
Total	**3.7900e-003**	**5.9100e-003**	**0.0449**	**2.0000e-005**	**3.8000e-004**	**4.0000e-005**	**4.1000e-004**	**1.0000e-004**	**3.0000e-005**	**1.4000e-004**	**0.0000**	**1.0030**	**1.0030**	**4.0000e-005**	**0.0000**	**1.0040**

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	0.0261	0.4896	0.7476	1.1200e-003		0.0153	0.0153		0.0153	0.0153	0.0000	99.4301	99.4301	0.0188	0.0000	99.8257
Total	**0.0261**	**0.4896**	**0.7476**	**1.1200e-003**		**0.0153**	**0.0153**		**0.0153**	**0.0153**	**0.0000**	**99.4301**	**99.4301**	**0.0188**	**0.0000**	**99.8257**

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	2.1900e-003	5.4500e-003	0.0386	1.0000e-005	9.0000e-005	3.0000e-005	1.1000e-004	2.0000e-005	2.0000e-005	5.0000e-005	0.0000	0.6198	0.6198	1.0000e-005	0.0000	0.6201
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	1.6000e-003	4.6000e-004	6.3500e-003	1.0000e-005	2.9000e-004	1.0000e-005	3.0000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	0.3832	0.3832	3.0000e-005	0.0000	0.3839
Total	**3.7900e-003**	**5.9100e-003**	**0.0449**	**2.0000e-005**	**3.8000e-004**	**4.0000e-005**	**4.1000e-004**	**1.0000e-004**	**3.0000e-005**	**1.4000e-004**	**0.0000**	**1.0030**	**1.0030**	**4.0000e-005**	**0.0000**	**1.0040**

3.6 Jack and Bore Casing - 2018

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	0.0142	0.1290	0.1097	2.1000e-004		7.2800e-003	7.2800e-003		7.0900e-003	7.0900e-003	0.0000	18.0836	18.0836	3.2300e-003	0.0000	18.1516
Total	**0.0142**	**0.1290**	**0.1097**	**2.1000e-004**		**7.2800e-003**	**7.2800e-003**		**7.0900e-003**	**7.0900e-003**	**0.0000**	**18.0836**	**18.0836**	**3.2300e-003**	**0.0000**	**18.1516**

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	5.5000e-004	1.3600e-003	9.6400e-003	0.0000	2.0000e-005	1.0000e-005	3.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	0.1550	0.1550	0.0000	0.0000	0.1550
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	4.6000e-004	1.3000e-004	1.8300e-003	0.0000	8.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1103	0.1103	1.0000e-005	0.0000	0.1105
Total	**1.0100e-003**	**1.4900e-003**	**0.0115**	**0.0000**	**1.0000e-004**	**1.0000e-005**	**1.2000e-004**	**3.0000e-005**	**1.0000e-005**	**3.0000e-005**	**0.0000**	**0.2652**	**0.2652**	**1.0000e-005**	**0.0000**	**0.2655**

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	4.1100e-003	0.0807	0.1306	2.1000e-004		2.2500e-003	2.2500e-003		2.2500e-003	2.2500e-003	0.0000	18.0836	18.0836	3.2300e-003	0.0000	18.1516

Total	**4.1100e-003**	**0.0807**	**0.1306**	**2.1000e-004**		**2.2500e-003**	**2.2500e-003**		**2.2500e-003**	**2.2500e-003**	**0.0000**	**18.0836**	**18.0836**	**3.2300e-003**	**0.0000**	**18.1516**

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	5.5000e-004	1.3600e-003	9.6400e-003	0.0000	2.0000e-005	1.0000e-005	3.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	0.1550	0.1550	0.0000	0.0000	0.1550
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	4.6000e-004	1.3000e-004	1.8300e-003	0.0000	8.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1103	0.1103	1.0000e-005	0.0000	0.1105
Total	**1.0100e-003**	**1.4900e-003**	**0.0115**	**0.0000**	**1.0000e-004**	**1.0000e-005**	**1.2000e-004**	**3.0000e-005**	**1.0000e-005**	**3.0000e-005**	**0.0000**	**0.2652**	**0.2652**	**1.0000e-005**	**0.0000**	**0.2655**

Emission Summary

DPM Construction Emissions and Modeling Emission Rates - Unmitigated

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2017	Construction	0.1067	1_DPM	213.4	0.06878	8.67E-03	2,095	4.14E-06
2018	Construction	0.0518	1_DPM	103.6	0.03339	4.21E-03	2,095	2.01E-06
Total		***0.1585***		***317***	***0.1022***	***0.0129***		

PM2.5 Fugitive Dust Construction Emissions for Modeling - Unmitigated

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2017	Construction	1_FUG	0.0006	1.2	0.00039	4.95E-05	2,095	2.37E-08
2018	Construction	1_FUG	0.0003	0.7	0.00021	2.68E-05	2,095	1.28E-08
Total			***0.0009***	***1.9***	***0.0006***	***0.0001***		

APPENDIX B4
Health Risk Calculations

Health Risk Calculations- Maximum Cancer Risk

Off-Site Residential Receptor Locations - 1.5 meters

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information					
			DPM Conc (ug/m3)				Modeled DPM Conc (ug/m3)					
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**Year**	**Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	-	0.0000	10	-	-	-	-	-		
1	1	0 - 1	2017	0.1270	10	20.86	2017	0.1270	1	0.36	0.0014	0.128
2	1	1 - 2	2018	0.0700	10	11.49	2018	0.0700	1	0.20	0.0008	0.071
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00		
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00		
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00		
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00		
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00		
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00		
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00		
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00		
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00		
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00		
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00		
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00		
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00		
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00		
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00		
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00		
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00		
Total Increased Cancer Risk						**32.4**				**0.57**		

* Third trimester of pregnancy

Result Summary

Construction Year	Unmitigated					
	Maximum Concentrations		Cancer Risk (per million)		Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM2.5/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Child	Adult	(-)	($\mu g/m^3$)
2017	0.1270	0.0014	20.86	0.36	0.025	0.128
2018	0.0700	0.0008	11.49	0.20	0.014	0.071
Total	-	-	**32.4**	**0.6**	-	-
Maximum Annual	0.1270	0.0014	-	-	**0.025**	**0.128**

Maximum DPM/PM2.5 concentration

Ocean View Senior Living Center- 1.5 meters - Adult Exposures

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Adult - Exposure Information: DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age* Sensitivity Factor	Student Cancer Risk (per million)	Fugitive PM2.5	Total PM2.5
1	1	2017	0.1441	1	1.24	0.0011	0.145
2	1	2018	0.0700	1	0.60	0.0006	0.071
Total Increased Cancer Risk					**1.8**		

Result Summary

Construction Year	Unmitigated				
	Maximum Concentrations				
	Exhaust PM2.5/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million) Adult (Seniors)	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2017	0.1441	0.0011	1.24	0.029	0.145
2018	0.0700	0.0006	0.60	0.014	0.071
Total	-	-	**1.8**	-	-
Maximum Annual	0.1441	0.0011	-	**0.029**	**0.145**

Risks at Cabrillo Elementary School Site

Calibro Elementary School - 1 meter - Child Exposures

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Student - Exposure Information: DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age* Sensitivity Factor	Student Cancer Risk (per million)	Fugitive PM2.5	Total PM2.5
1	1	2017	0.0909	3	2.35	0.0006	0.092
2	1	2018	0.0441	3	1.14	0.0003	0.044
Total Increased Cancer Risk					**3.5**		

* Students assumed to be less than 16 years of age

Result Summary

Maximum Impacts at Callibro School

Construction Year	Unmitigated				
	Maximum Concentrations				Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
	Exhaust PM2.5/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million) Child	Hazard Index (-)	
2017	0.0909	0.0006	2.35	0.018	0.092
2018	0.0441	0.0003	1.14	0.009	0.044
Total	-	-	**3.5**	-	-
Maximum Annual	0.0909	0.0006	-	**0.018**	**0.092**

APPENDIX B5
Greenhouse Gas Data

Equalization Basin

Pacifica Equalization Basin, Construction GHG Emissions

San Mateo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	10.15	1000sqft	1.06	10,150.00	0
Parking Lot	52.00	Space	0.00	23,513.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	429.6	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Revised CO2 Emission Intensity

Land Use - From the project description and construction information

Construction Phase - Construction Schedule

Off-road Equipment - Applicant provided construction schedule

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Portable Generator sets
Other construction equipment refers to the bentonite slurry plant

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Trips and VMT - Demolition= 100+300/16*2
Slurry Wall Construction= (4400+3150/16+4420/20)*2
Concrete plug and microfliters=325*2/16=4 trips
Demolition - Demolition volume included in trips

Grading - 20000 cy of soil hauled

Construction Off-road Equipment Mitigation - Best Management Practices
Tier 2 Mitigation for all equipment >25HP

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	Tier	No Change	Tier 2

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	200.00	9.00
tblConstructionPhase	NumDays	200.00	78.00
tblConstructionPhase	NumDays	200.00	20.00
tblConstructionPhase	NumDays	200.00	76.00
tblConstructionPhase	NumDays	200.00	20.00
tblConstructionPhase	NumDays	200.00	20.00
tblConstructionPhase	NumDays	200.00	25.00
tblConstructionPhase	NumDays	200.00	30.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	4.00	15.00
tblConstructionPhase	NumDays	4.00	49.00
tblConstructionPhase	NumDays	10.00	19.00
tblConstructionPhase	NumDays	2.00	14.00
tblConstructionPhase	PhaseEndDate	11/2/2017	11/3/2017
tblConstructionPhase	PhaseEndDate	3/19/2018	3/16/2018
tblConstructionPhase	PhaseEndDate	5/18/2018	4/20/2018
tblConstructionPhase	PhaseEndDate	6/1/2018	5/11/2018
tblConstructionPhase	PhaseEndDate	6/1/2018	5/25/2018

tblConstructionPhase	PhaseEndDate	10/3/2017	10/5/2017
tblConstructionPhase	PhaseEndDate	7/4/2018	6/21/2018
tblConstructionPhase	PhaseEndDate	7/11/2018	7/12/2018
tblConstructionPhase	PhaseStartDate	5/26/2018	5/28/2018
tblConstructionPhase	PhaseStartDate	4/8/2017	4/10/2017
tblConstructionPhase	PhaseStartDate	10/6/2017	10/9/2017
tblConstructionPhase	PhaseStartDate	11/4/2017	11/6/2017
tblConstructionPhase	PhaseStartDate	2/20/2018	2/19/2018
tblConstructionPhase	PhaseStartDate	3/17/2018	3/19/2018
tblConstructionPhase	PhaseStartDate	4/14/2018	3/19/2018
tblConstructionPhase	PhaseStartDate	4/21/2018	4/2/2018
tblConstructionPhase	PhaseStartDate	5/12/2018	5/7/2018
tblConstructionPhase	PhaseStartDate	7/27/2017	7/31/2017
tblConstructionPhase	PhaseStartDate	6/8/2018	5/28/2018
tblConstructionPhase	PhaseStartDate	6/22/2018	6/25/2018
tblGrading	MaterialExported	0.00	185.00
tblGrading	MaterialExported	0.00	20,000.00
tblGrading	MaterialExported	0.00	90.00
tblLandUse	LandUseSquareFeet	20,800.00	23,513.00
tblLandUse	LotAcreage	0.23	1.06
tblLandUse	LotAcreage	0.47	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	8.00	1.60
tblOffRoadEquipment	UsageHours	6.00	1.30
tblOffRoadEquipment	UsageHours	6.00	5.00

tblOffRoadEquipment	UsageHours	6.00	1.10
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	6.00	0.80
tblOffRoadEquipment	UsageHours	6.00	0.80
tblOffRoadEquipment	UsageHours	8.00	6.20
tblOffRoadEquipment	UsageHours	8.00	4.10
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	4.80
tblOffRoadEquipment	UsageHours	8.00	6.70
tblOffRoadEquipment	UsageHours	6.00	1.60
tblOffRoadEquipment	UsageHours	8.00	4.30
tblOffRoadEquipment	UsageHours	6.00	0.80
tblOffRoadEquipment	UsageHours	7.00	0.80
tblOffRoadEquipment	UsageHours	7.00	4.30
tblOffRoadEquipment	UsageHours	6.00	1.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	6.00	1.00
tblOffRoadEquipment	UsageHours	6.00	0.80
tblOffRoadEquipment	UsageHours	6.00	0.30
tblOffRoadEquipment	UsageHours	8.00	5.60
tblOffRoadEquipment	UsageHours	7.00	1.30
tblOffRoadEquipment	UsageHours	7.00	1.20
tblOffRoadEquipment	UsageHours	8.00	1.10
tblOffRoadEquipment	UsageHours	8.00	4.30
tblProjectCharacteristics	CO2IntensityFactor	641.35	429.6
tblProjectCharacteristics	OperationalYear	2014	2019
tblTripsAndVMT	HaulingTripNumber	0.00	50.00
tblTripsAndVMT	HaulingTripNumber	0.00	46.00

tblTripsAndVMT	HaulingTripNumber	0.00	1,386.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	44.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	34.00
tblTripsAndVMT	VendorTripNumber	6.00	7.00

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					
2017	0.2632	2.5042	2.1676	4.0200e-003	0.0496	0.1176	0.1672	0.0134	0.1129	0.1263	0.0000	356.9164	356.9164	0.0409	0.0000	357.7745
2018	0.0733	0.6243	0.5938	1.0900e-003	0.0158	0.0342	0.0501	4.1500e-003	0.0335	0.0376	0.0000	92.8921	92.8921	9.7100e-003	0.0000	93.0960
Total	**0.3366**	**3.1284**	**2.7614**	**5.1100e-003**	**0.0654**	**0.1518**	**0.2172**	**0.0176**	**0.1464**	**0.1640**	**0.0000**	**449.8085**	**449.8085**	**0.0506**	**0.0000**	**450.8704**

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					
2017	0.1070	1.5496	2.3217	4.0200e-003	0.0496	0.0344	0.0840	0.0133	0.0338	0.0471	0.0000	356.9162	356.9162	0.0409	0.0000	357.7742
2018	0.0225	0.2516	0.6435	1.0900e-003	0.0158	6.5300e-003	0.0224	4.1000e-003	6.4600e-003	0.0106	0.0000	92.8920	92.8920	9.7100e-003	0.0000	93.0959

Total	0.1295	1.8013	2.9652	5.1100e-003	0.0654	0.0409	0.1064	0.0174	0.0403	0.0577	0.0000	449.8082	449.8082	0.0506	0.0000	450.8701

	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	61.53	42.42	-7.38	0.00	0.00	73.04	51.04	0.80	72.49	64.81	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	1A_Abatement/Demolition	Demolition	3/27/2017	4/7/2017	5	10	
2	1A_Slurry Wall Construction	Building Construction	4/10/2017	7/26/2017	5	78	
3	1A_Excavation for EQ Area	Grading	7/31/2017	10/5/2017	5	49	
4	1A_Concrete plug and micro piles	Building Construction	10/9/2017	11/3/2017	5	20	
5	1A_Internal Base and Wall Construction	Building Construction	11/6/2017	2/19/2018	5	76	
6	1A_Precast EQBasin Roof	Building Construction	2/19/2018	3/16/2018	5	20	
7	2_Electrical Conduit Placement	Building Construction	3/19/2018	4/13/2018	5	20	
8	3_Odor Control System Construction	Building Construction	3/19/2018	4/20/2018	5	25	
9	2_Pre Fabricated Bldg and Electrical Control Center	Building Construction	4/2/2018	5/11/2018	5	30	
10	4_Finished Grading	Grading	5/7/2018	5/25/2018	5	15	
11	4_Parking Lot Lighting	Building Construction	5/28/2018	6/7/2018	5	9	
12	4_Concrete Curb/AC Pavement	Paving	5/28/2018	6/21/2018	5	19	
13	4_Landscaoing	Site Preparation	6/25/2018	7/12/2018	5	14	

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 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
1A_Abatement/Demolition	Concrete/Industrial Saws	1	1.60	81	0.73
1A_Abatement/Demolition	Excavators	1	2.10	162	0.38
1A_Abatement/Demolition	Rubber Tired Dozers	0	8.00	255	0.40
1A_Abatement/Demolition	Rubber Tired Loaders	1	4.20	199	0.36
1A_Abatement/Demolition	Skid Steer Loaders	1	5.60	64	0.37
1A_Abatement/Demolition	Tractors/Loaders/Backhoes	1	5.60	97	0.37
1A_Slurry Wall Construction	Cranes	1	5.00	226	0.29
1A_Slurry Wall Construction	Excavators	1	5.00	162	0.38
1A_Slurry Wall Construction	Forklifts	0	6.00	89	0.20
1A_Slurry Wall Construction	Generator Sets	2	4.10	84	0.74
1A_Slurry Wall Construction	Graders	0	8.00	174	0.41
1A_Slurry Wall Construction	Other Construction Equipment	1	8.00	171	0.42
1A_Slurry Wall Construction	Pumps	1	8.00	84	0.74
1A_Slurry Wall Construction	Rubber Tired Dozers	0	7.00	255	0.40
1A_Slurry Wall Construction	Tractors/Loaders/Backhoes	1	1.00	97	0.37
1A_Slurry Wall Construction	Welders	0	8.00	46	0.45
1A_Excavation for EQ Area	Cranes	1	6.00	226	0.29
1A_Excavation for EQ Area	Excavators	2	8.00	162	0.38
1A_Excavation for EQ Area	Graders	0	6.00	174	0.41
1A_Excavation for EQ Area	Pumps	2	8.00	84	0.74
1A_Excavation for EQ Area	Rubber Tired Dozers	0	6.00	255	0.40
1A_Excavation for EQ Area	Tractors/Loaders/Backhoes	1	1.20	97	0.37
1A_Concrete plug and micro piles	Bore/Drill Rigs	1	6.00	205	0.50

1A_Concrete plug and micro piles	Cranes	0	6.00	226	0.29
1A_Concrete plug and micro piles	Forklifts	0	6.00	89	0.20
1A_Concrete plug and micro piles	Generator Sets	1	4.00	84	0.74
1A_Concrete plug and micro piles	Pumps	2	8.00	84	0.74
1A_Concrete plug and micro piles	Tractors/Loaders/Backhoes	0	6.00	97	0.37
1A_Concrete plug and micro piles	Welders	0	8.00	46	0.45
1A_Internal Base and Wall Construction	Cement and Mortar Mixers	0	6.00	9	0.56
1A_Internal Base and Wall Construction	Cranes	1	1.10	226	0.29
1A_Internal Base and Wall Construction	Forklifts	0	6.00	89	0.20
1A_Internal Base and Wall Construction	Generator Sets	2	8.00	84	0.74
1A_Internal Base and Wall Construction	Pavers	0	6.00	125	0.42
1A_Internal Base and Wall Construction	Paving Equipment	0	8.00	130	0.36
1A_Internal Base and Wall Construction	Rollers	0	7.00	80	0.38
1A_Internal Base and Wall Construction	Rubber Tired Loaders	1	1.80	199	0.36
1A_Internal Base and Wall Construction	Skid Steer Loaders	1	2.60	64	0.37
1A_Internal Base and Wall Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
1A_Internal Base and Wall Construction	Welders	0	8.00	46	0.45
1A_Precast EQBasin Roof	Air Compressors	0	6.00	78	0.48
1A_Precast EQBasin Roof	Cranes	2	2.00	226	0.29
1A_Precast EQBasin Roof	Forklifts	0	6.00	89	0.20
1A_Precast EQBasin Roof	Generator Sets	2	8.00	84	0.74
1A_Precast EQBasin Roof	Rubber Tired Loaders	1	1.00	199	0.36
1A_Precast EQBasin Roof	Tractors/Loaders/Backhoes	0	6.00	97	0.37
1A_Precast EQBasin Roof	Welders	0	8.00	46	0.45

2_Electrical Conduit Placement	Cranes	0	0.80	226	0.29
2_Electrical Conduit Placement	Forklifts	0	6.00	89	0.20
2_Electrical Conduit Placement	Generator Sets	1	6.00	84	0.74
2_Electrical Conduit Placement	Tractors/Loaders/Backhoes	1	2.00	97	0.37
2_Electrical Conduit Placement	Tractors/Loaders/Backhoes	1	1.00	97	0.37
2_Electrical Conduit Placement	Welders	0	8.00	46	0.45
3_Odor Control System Construction	Cranes	0	6.00	226	0.29
3_Odor Control System Construction	Forklifts	0	6.00	89	0.20
3_Odor Control System Construction	Generator Sets	1	4.80	84	0.74
3_Odor Control System Construction	Rollers	1	0.30	80	0.38
3_Odor Control System Construction	Rubber Tired Loaders	1	0.80	199	0.36
3_Odor Control System Construction	Tractors/Loaders/Backhoes	1	0.80	97	0.37
3_Odor Control System Construction	Welders	0	8.00	46	0.45
2_Pre Fabricated Bldg and Electrical Control Center	Cranes	1	0.80	226	0.29
2_Pre Fabricated Bldg and Electrical Control Center	Forklifts	0	6.00	89	0.20
2_Pre Fabricated Bldg and Electrical Control Center	Generator Sets	1	6.70	84	0.74
2_Pre Fabricated Bldg and Electrical Control Center	Rollers	1	0.40	80	0.38
2_Pre Fabricated Bldg and Electrical Control Center	Tractors/Loaders/Backhoes	1	0.30	97	0.37
2_Pre Fabricated Bldg and Electrical Control Center	Welders	0	8.00	46	0.45
4_Finished Grading	Graders	1	1.60	174	0.41
4_Finished Grading	Rollers	1	1.00	80	0.38
4_Finished Grading	Rubber Tired Dozers	0	6.00	255	0.40
4_Finished Grading	Rubber Tired Loaders	1	1.30	199	0.36
4_Finished Grading	Tractors/Loaders/Backhoes	1	1.30	97	0.37
4_Parking Lot Lighting	Cranes	1	1.30	226	0.29
4_Parking Lot Lighting	Forklifts	0	6.00	89	0.20
4_Parking Lot Lighting	Generator Sets	1	6.20	84	0.74
4_Parking Lot Lighting	Tractors/Loaders/Backhoes	0	6.00	97	0.37

4_Parking Lot Lighting	Welders	0	8.00	46	0.45
4_Concrete Curb/AC Pavement	Cement and Mortar Mixers	0	6.00	9	0.56
4_Concrete Curb/AC Pavement	Generator Sets	1	6.30	84	0.74
4_Concrete Curb/AC Pavement	Other Construction Equipment	1	0.80	171	0.42
4_Concrete Curb/AC Pavement	Pavers	1	0.80	125	0.42
4_Concrete Curb/AC Pavement	Paving Equipment	0	8.00	130	0.36
4_Concrete Curb/AC Pavement	Rollers	1	0.80	80	0.38
4_Concrete Curb/AC Pavement	Tractors/Loaders/Backhoes	1	1.10	97	0.37
4_Landscaoing	Graders	0	4.30	174	0.41
4_Landscaoing	Rubber Tired Dozers	0	4.30	255	0.40
4_Landscaoing	Skid Steer Loaders	1	4.30	64	0.37
4_Landscaoing	Tractors/Loaders/Backhoes	1	4.30	97	0.37

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
1A_Abatement/Demolition	5	13.00	0.00	50.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
1A_Slurry Wall Construction	7	14.00	6.00	1,386.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
1A_Excavation for EQ Area	6	15.00	0.00	2,500.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
1A_Concrete plug and micro piles	4	14.00	6.00	4.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
1A_Internal Base and Wall Construction	5	14.00	6.00	44.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
1A_Precast EQBasin Roof	5	14.00	7.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
2_Electrical Conduit Placement	3	14.00	6.00	4.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
3_Odor Control System Construction	4	14.00	6.00	34.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

2_Pre Fabricated Bldg and Electrical Control Center	4	14.00	6.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
4_Finished Grading	4	10.00	0.00	23.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
4_Parking Lot Lighting	2	14.00	6.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
4_Concrete Curb/AC Pavement	5	13.00	0.00	46.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
4_Landscaoing	2	5.00	0.00	11.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Reduce Vehicle Speed on Unpaved Roads

3.2 1A_Abatement/Demolition - 2017

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					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7700e-003	0.0408	0.0262	5.0000e-005		2.1600e-003	2.1600e-003		2.0100e-003	2.0100e-003	0.0000	4.3457	4.3457	1.2100e-003	0.0000	4.3712
Total	**3.7700e-003**	**0.0408**	**0.0262**	**5.0000e-005**	**0.0000**	**2.1600e-003**	**2.1600e-003**	**0.0000**	**2.0100e-003**	**2.0100e-003**	**0.0000**	**4.3457**	**4.3457**	**1.2100e-003**	**0.0000**	**4.3712**

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	6.1000e-004	6.7800e-003	8.5600e-003	2.0000e-005	4.2000e-004	8.0000e-005	5.0000e-004	1.1000e-004	8.0000e-005	1.9000e-004	0.0000	1.6336	1.6336	1.0000e-005	0.0000	1.6339
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	2.1000e-004	3.3000e-004	3.0700e-003	1.0000e-005	5.9000e-004	0.0000	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5102	0.5102	3.0000e-005	0.0000	0.5107
Total	**8.2000e-004**	**7.1100e-003**	**0.0116**	**3.0000e-005**	**1.0100e-003**	**8.0000e-005**	**1.0900e-003**	**2.7000e-004**	**8.0000e-005**	**3.5000e-004**	**0.0000**	**2.1438**	**2.1438**	**4.0000e-005**	**0.0000**	**2.1446**

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					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5800e-003	0.0374	0.0314	5.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	4.3457	4.3457	1.2100e-003	0.0000	4.3712
Total	**1.5800e-003**	**0.0374**	**0.0314**	**5.0000e-005**	**0.0000**	**1.1900e-003**	**1.1900e-003**	**0.0000**	**1.1900e-003**	**1.1900e-003**	**0.0000**	**4.3457**	**4.3457**	**1.2100e-003**	**0.0000**	**4.3712**

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	6.1000e-004	6.7800e-003	8.5600e-003	2.0000e-005	4.2000e-004	8.0000e-005	5.0000e-004	1.1000e-004	8.0000e-005	1.9000e-004	0.0000	1.6336	1.6336	1.0000e-005	0.0000	1.6339

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	2.1000e-004	3.3000e-004	3.0700e-003	1.0000e-005	5.9000e-004	0.0000	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5102	0.5102	3.0000e-005	0.0000	0.5107
Total	**8.2000e-004**	**7.1100e-003**	**0.0116**	**3.0000e-005**	**1.0100e-003**	**8.0000e-005**	**1.0900e-003**	**2.7000e-004**	**8.0000e-005**	**3.5000e-004**	**0.0000**	**2.1438**	**2.1438**	**4.0000e-005**	**0.0000**	**2.1446**

3.3 1A_Slurry Wall Construction - 2017

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	0.0970	0.9269	0.6274	1.0400e-003		0.0529	0.0529		0.0506	0.0506	0.0000	93.0033	93.0033	0.0186	0.0000	93.3928
Total	**0.0970**	**0.9269**	**0.6274**	**1.0400e-003**		**0.0529**	**0.0529**		**0.0506**	**0.0506**	**0.0000**	**93.0033**	**93.0033**	**0.0186**	**0.0000**	**93.3928**

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	0.0169	0.1880	0.2373	5.1000e-004	0.0116	2.2700e-003	0.0138	3.1700e-003	2.0900e-003	5.2600e-003	0.0000	45.2841	45.2841	3.3000e-004	0.0000	45.2909
Vendor	2.8700e-003	0.0213	0.0388	5.0000e-005	1.4900e-003	2.9000e-004	1.7900e-003	4.3000e-004	2.7000e-004	7.0000e-004	0.0000	4.8745	4.8745	4.0000e-005	0.0000	4.8753
Worker	1.7300e-003	2.7300e-003	0.0258	6.0000e-005	4.9300e-003	4.0000e-005	4.9700e-003	1.3100e-003	3.0000e-005	1.3500e-003	0.0000	4.2855	4.2855	2.2000e-004	0.0000	4.2902
Total	**0.0215**	**0.2120**	**0.3018**	**6.2000e-004**	**0.0180**	**2.6000e-003**	**0.0206**	**4.9100e-003**	**2.3900e-003**	**7.3100e-003**	**0.0000**	**54.4440**	**54.4440**	**5.9000e-004**	**0.0000**	**54.4563**

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	0.0237	0.4705	0.6857	1.0400e-003		0.0135	0.0135		0.0135	0.0135	0.0000	93.0031	93.0031	0.0186	0.0000	93.3927
Total	**0.0237**	**0.4705**	**0.6857**	**1.0400e-003**		**0.0135**	**0.0135**		**0.0135**	**0.0135**	**0.0000**	**93.0031**	**93.0031**	**0.0186**	**0.0000**	**93.3927**

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	0.0169	0.1880	0.2373	5.1000e-004	0.0116	2.2700e-003	0.0138	3.1700e-003	2.0900e-003	5.2600e-003	0.0000	45.2841	45.2841	3.3000e-004	0.0000	45.2909
Vendor	2.8700e-003	0.0213	0.0388	5.0000e-005	1.4900e-003	2.9000e-004	1.7900e-003	4.3000e-004	2.7000e-004	7.0000e-004	0.0000	4.8745	4.8745	4.0000e-005	0.0000	4.8753
Worker	1.7300e-003	2.7300e-003	0.0258	6.0000e-005	4.9300e-003	4.0000e-005	4.9700e-003	1.3100e-003	3.0000e-005	1.3500e-003	0.0000	4.2855	4.2855	2.2000e-004	0.0000	4.2902
Total	**0.0215**	**0.2120**	**0.3018**	**6.2000e-004**	**0.0180**	**2.6000e-003**	**0.0206**	**4.9100e-003**	**2.3900e-003**	**7.3100e-003**	**0.0000**	**54.4440**	**54.4440**	**5.9000e-004**	**0.0000**	**54.4563**

3.4 1A_Excavation for EQ Area - 2017

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					
Fugitive Dust					1.1300e-003	0.0000	1.1300e-003	1.7000e-004	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0602	0.5715	0.4148	7.0000e-004		0.0322	0.0322		0.0309	0.0309	0.0000	62.4387	62.4387	0.0130	0.0000	62.7124
Total	**0.0602**	**0.5715**	**0.4148**	**7.0000e-004**	**1.1300e-003**	**0.0322**	**0.0334**	**1.7000e-004**	**0.0309**	**0.0311**	**0.0000**	**62.4387**	**62.4387**	**0.0130**	**0.0000**	**62.7124**

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	0.0304	0.3391	0.4280	9.1000e-004	0.0209	4.0900e-003	0.0250	5.7300e-003	3.7600e-003	9.4900e-003	0.0000	81.6812	81.6812	5.9000e-004	0.0000	81.6935
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	1.1700e-003	1.8400e-003	0.0174	4.0000e-005	3.3200e-003	3.0000e-005	3.3500e-003	8.8000e-004	2.0000e-005	9.1000e-004	0.0000	2.8845	2.8845	1.5000e-004	0.0000	2.8876
Total	**0.0316**	**0.3409**	**0.4454**	**9.5000e-004**	**0.0242**	**4.1200e-003**	**0.0283**	**6.6100e-003**	**3.7800e-003**	**0.0104**	**0.0000**	**84.5657**	**84.5657**	**7.4000e-004**	**0.0000**	**84.5811**

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					
Fugitive Dust					1.1300e-003	0.0000	1.1300e-003	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0164	0.3350	0.4594	7.0000e-004		9.5600e-003	9.5600e-003		9.5600e-003	9.5600e-003	0.0000	62.4386	62.4386	0.0130	0.0000	62.7123

Total	**0.0164**	**0.3350**	**0.4594**	**7.0000e-004**	**1.1300e-003**	**9.5600e-003**	**0.0107**	**9.0000e-005**	**9.5600e-003**	**9.6500e-003**	**0.0000**	**62.4386**	**62.4386**	**0.0130**	**0.0000**	**62.7123**

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	0.0304	0.3391	0.4280	9.1000e-004	0.0209	4.0900e-003	0.0250	5.7300e-003	3.7600e-003	9.4900e-003	0.0000	81.6812	81.6812	5.9000e-004	0.0000	81.6935
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	1.1700e-003	1.8400e-003	0.0174	4.0000e-005	3.3200e-003	3.0000e-005	3.3500e-003	8.8000e-004	2.0000e-005	9.1000e-004	0.0000	2.8845	2.8845	1.5000e-004	0.0000	2.8876
Total	**0.0316**	**0.3409**	**0.4454**	**9.5000e-004**	**0.0242**	**4.1200e-003**	**0.0283**	**6.6100e-003**	**3.7800e-003**	**0.0104**	**0.0000**	**84.5657**	**84.5657**	**7.4000e-004**	**0.0000**	**84.5811**

3.5 1A_Concrete plug and micro piles - 2017

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	0.0172	0.1472	0.1104	2.3000e-004		8.7800e-003	8.7800e-003		8.7000e-003	8.7000e-003	0.0000	20.2081	20.2081	3.0700e-003	0.0000	20.2725
Total	**0.0172**	**0.1472**	**0.1104**	**2.3000e-004**		**8.7800e-003**	**8.7800e-003**		**8.7000e-003**	**8.7000e-003**	**0.0000**	**20.2081**	**20.2081**	**3.0700e-003**	**0.0000**	**20.2725**

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	5.0000e-005	5.4000e-004	6.8000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1307	0.1307	0.0000	0.0000	0.1307
Vendor	7.4000e-004	5.4700e-003	9.9400e-003	1.0000e-005	3.8000e-004	8.0000e-005	4.6000e-004	1.1000e-004	7.0000e-005	1.8000e-004	0.0000	1.2499	1.2499	1.0000e-005	0.0000	1.2501
Worker	4.4000e-004	7.0000e-004	6.6100e-003	1.0000e-005	1.2700e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.0988	1.0988	6.0000e-005	0.0000	1.1000
Total	**1.2300e-003**	**6.7100e-003**	**0.0172**	**2.0000e-005**	**1.6800e-003**	**1.0000e-004**	**1.7700e-003**	**4.6000e-004**	**9.0000e-005**	**5.5000e-004**	**0.0000**	**2.4794**	**2.4794**	**7.0000e-005**	**0.0000**	**2.4808**

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	3.2700e-003	0.0634	0.1367	2.3000e-004		1.4100e-003	1.4100e-003		1.4100e-003	1.4100e-003	0.0000	20.2081	20.2081	3.0700e-003	0.0000	20.2724
Total	**3.2700e-003**	**0.0634**	**0.1367**	**2.3000e-004**		**1.4100e-003**	**1.4100e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**20.2081**	**20.2081**	**3.0700e-003**	**0.0000**	**20.2724**

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	5.0000e-005	5.4000e-004	6.8000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1307	0.1307	0.0000	0.0000	0.1307
Vendor	7.4000e-004	5.4700e-003	9.9400e-003	1.0000e-005	3.8000e-004	8.0000e-005	4.6000e-004	1.1000e-004	7.0000e-005	1.8000e-004	0.0000	1.2499	1.2499	1.0000e-005	0.0000	1.2501
Worker	4.4000e-004	7.0000e-004	6.6100e-003	1.0000e-005	1.2700e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.0988	1.0988	6.0000e-005	0.0000	1.1000
Total	**1.2300e-003**	**6.7100e-003**	**0.0172**	**2.0000e-005**	**1.6800e-003**	**1.0000e-004**	**1.7700e-003**	**4.6000e-004**	**9.0000e-005**	**5.5000e-004**	**0.0000**	**2.4794**	**2.4794**	**7.0000e-005**	**0.0000**	**2.4808**

3.6 1A_Internal Base and Wall Construction - 2017

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	0.0274	0.2357	0.1756	3.2000e-004		0.0144	0.0144		0.0142	0.0142	0.0000	27.8338	27.8338	3.4300e-003	0.0000	27.9058
Total	**0.0274**	**0.2357**	**0.1756**	**3.2000e-004**		**0.0144**	**0.0144**		**0.0142**	**0.0142**	**0.0000**	**27.8338**	**27.8338**	**3.4300e-003**	**0.0000**	**27.9058**

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	2.8000e-004	3.1400e-003	3.9600e-003	1.0000e-005	3.2000e-004	4.0000e-005	3.6000e-004	9.0000e-005	3.0000e-005	1.2000e-004	0.0000	0.7566	0.7566	1.0000e-005	0.0000	0.7567
Vendor	1.4700e-003	0.0109	0.0199	3.0000e-005	7.7000e-004	1.5000e-004	9.2000e-004	2.2000e-004	1.4000e-004	3.6000e-004	0.0000	2.4997	2.4997	2.0000e-005	0.0000	2.5001
Worker	8.9000e-004	1.4000e-003	0.0132	3.0000e-005	2.5300e-003	2.0000e-005	2.5500e-003	6.7000e-004	2.0000e-005	6.9000e-004	0.0000	2.1977	2.1977	1.1000e-004	0.0000	2.2001
Total	**2.6400e-003**	**0.0155**	**0.0371**	**7.0000e-005**	**3.6200e-003**	**2.1000e-004**	**3.8300e-003**	**9.8000e-004**	**1.9000e-004**	**1.1700e-003**	**0.0000**	**5.4540**	**5.4540**	**1.4000e-004**	**0.0000**	**5.4570**

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	4.3200e-003	0.0611	0.1954	3.2000e-004		1.6500e-003	1.6500e-003		1.6500e-003	1.6500e-003	0.0000	27.8337	27.8337	3.4300e-003	0.0000	27.9058
Total	**4.3200e-003**	**0.0611**	**0.1954**	**3.2000e-004**		**1.6500e-003**	**1.6500e-003**		**1.6500e-003**	**1.6500e-003**	**0.0000**	**27.8337**	**27.8337**	**3.4300e-003**	**0.0000**	**27.9058**

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	2.8000e-004	3.1400e-003	3.9600e-003	1.0000e-005	3.2000e-004	4.0000e-005	3.6000e-004	9.0000e-005	3.0000e-005	1.2000e-004	0.0000	0.7566	0.7566	1.0000e-005	0.0000	0.7567
Vendor	1.4700e-003	0.0109	0.0199	3.0000e-005	7.7000e-004	1.5000e-004	9.2000e-004	2.2000e-004	1.4000e-004	3.6000e-004	0.0000	2.4997	2.4997	2.0000e-005	0.0000	2.5001
Worker	8.9000e-004	1.4000e-003	0.0132	3.0000e-005	2.5300e-003	2.0000e-005	2.5500e-003	6.7000e-004	2.0000e-005	6.9000e-004	0.0000	2.1977	2.1977	1.1000e-004	0.0000	2.2001
Total	**2.6400e-003**	**0.0155**	**0.0371**	**7.0000e-005**	**3.6200e-003**	**2.1000e-004**	**3.8300e-003**	**9.8000e-004**	**1.9000e-004**	**1.1700e-003**	**0.0000**	**5.4540**	**5.4540**	**1.4000e-004**	**0.0000**	**5.4570**

3.6 1A_Internal Base and Wall Construction - 2018

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	0.0218	0.1927	0.1559	2.9000e-004		0.0112	0.0112		0.0111	0.0111	0.0000	24.9741	24.9741	2.9100e-003	0.0000	25.0352
Total	**0.0218**	**0.1927**	**0.1559**	**2.9000e-004**		**0.0112**	**0.0112**		**0.0111**	**0.0111**	**0.0000**	**24.9741**	**24.9741**	**2.9100e-003**	**0.0000**	**25.0352**

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	2.4000e-004	2.5800e-003	3.4200e-003	1.0000e-005	3.2000e-004	3.0000e-005	3.5000e-004	8.0000e-005	3.0000e-005	1.1000e-004	0.0000	0.6699	0.6699	0.0000	0.0000	0.6700
Vendor	1.2300e-003	8.9400e-003	0.0170	3.0000e-005	6.9000e-004	1.3000e-004	8.2000e-004	2.0000e-004	1.2000e-004	3.1000e-004	0.0000	2.2121	2.2121	2.0000e-005	0.0000	2.2125
Worker	7.1000e-004	1.1400e-003	0.0107	3.0000e-005	2.2800e-003	2.0000e-005	2.2900e-003	6.1000e-004	2.0000e-005	6.2000e-004	0.0000	1.9061	1.9061	9.0000e-005	0.0000	1.9081
Total	**2.1800e-003**	**0.0127**	**0.0311**	**7.0000e-005**	**3.2900e-003**	**1.8000e-004**	**3.4600e-003**	**8.9000e-004**	**1.7000e-004**	**1.0400e-003**	**0.0000**	**4.7880**	**4.7880**	**1.1000e-004**	**0.0000**	**4.7905**

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	3.8900e-003	0.0550	0.1758	2.9000e-004		1.4900e-003	1.4900e-003		1.4900e-003	1.4900e-003	0.0000	24.9741	24.9741	2.9100e-003	0.0000	25.0351

Total	**3.8900e-003**	**0.0550**	**0.1758**	**2.9000e-004**		**1.4900e-003**	**1.4900e-003**		**1.4900e-003**	**1.4900e-003**	**0.0000**	**24.9741**	**24.9741**	**2.9100e-003**	**0.0000**	**25.0351**

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	2.4000e-004	2.5800e-003	3.4200e-003	1.0000e-005	3.2000e-004	3.0000e-005	3.5000e-004	8.0000e-005	3.0000e-005	1.1000e-004	0.0000	0.6699	0.6699	0.0000	0.0000	0.6700
Vendor	1.2300e-003	8.9400e-003	0.0170	3.0000e-005	6.9000e-004	1.3000e-004	8.2000e-004	2.0000e-004	1.2000e-004	3.1000e-004	0.0000	2.2121	2.2121	2.0000e-005	0.0000	2.2125
Worker	7.1000e-004	1.1400e-003	0.0107	3.0000e-005	2.2800e-003	2.0000e-005	2.2900e-003	6.1000e-004	2.0000e-005	6.2000e-004	0.0000	1.9061	1.9061	9.0000e-005	0.0000	1.9081
Total	**2.1800e-003**	**0.0127**	**0.0311**	**7.0000e-005**	**3.2900e-003**	**1.8000e-004**	**3.4600e-003**	**8.9000e-004**	**1.7000e-004**	**1.0400e-003**	**0.0000**	**4.7880**	**4.7880**	**1.1000e-004**	**0.0000**	**4.7905**

3.7 1A_Precast EQBasin Roof - 2018

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	0.0134	0.1222	0.0894	1.7000e-004		6.9100e-003	6.9100e-003		6.7700e-003	6.7700e-003	0.0000	14.5798	14.5798	1.8400e-003	0.0000	14.6183
Total	**0.0134**	**0.1222**	**0.0894**	**1.7000e-004**		**6.9100e-003**	**6.9100e-003**		**6.7700e-003**	**6.7700e-003**	**0.0000**	**14.5798**	**14.5798**	**1.8400e-003**	**0.0000**	**14.6183**

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	8.0000e-004	5.7900e-003	0.0110	2.0000e-005	4.5000e-004	8.0000e-005	5.3000e-004	1.3000e-004	7.0000e-005	2.0000e-004	0.0000	1.4338	1.4338	1.0000e-005	0.0000	1.4340
Worker	4.0000e-004	6.3000e-004	5.9300e-003	1.0000e-005	1.2700e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.0589	1.0589	5.0000e-005	0.0000	1.0601
Total	**1.2000e-003**	**6.4200e-003**	**0.0170**	**3.0000e-005**	**1.7200e-003**	**9.0000e-005**	**1.8000e-003**	**4.7000e-004**	**8.0000e-005**	**5.5000e-004**	**0.0000**	**2.4927**	**2.4927**	**6.0000e-005**	**0.0000**	**2.4940**

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	2.2000e-003	0.0362	0.1003	1.7000e-004		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	14.5797	14.5797	1.8400e-003	0.0000	14.6183
Total	**2.2000e-003**	**0.0362**	**0.1003**	**1.7000e-004**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**14.5797**	**14.5797**	**1.8400e-003**	**0.0000**	**14.6183**

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	8.0000e-004	5.7900e-003	0.0110	2.0000e-005	4.5000e-004	8.0000e-005	5.3000e-004	1.3000e-004	7.0000e-005	2.0000e-004	0.0000	1.4338	1.4338	1.0000e-005	0.0000	1.4340
Worker	4.0000e-004	6.3000e-004	5.9300e-003	1.0000e-005	1.2700e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.0589	1.0589	5.0000e-005	0.0000	1.0601
Total	**1.2000e-003**	**6.4200e-003**	**0.0170**	**3.0000e-005**	**1.7200e-003**	**9.0000e-005**	**1.8000e-003**	**4.7000e-004**	**8.0000e-005**	**5.5000e-004**	**0.0000**	**2.4927**	**2.4927**	**6.0000e-005**	**0.0000**	**2.4940**

3.8 2_Electrical Conduit Placement - 2018

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	4.7900e-003	0.0407	0.0369	6.0000e-005		2.6600e-003	2.6600e-003		2.6100e-003	2.6100e-003	0.0000	5.3031	5.3031	6.4000e-004	0.0000	5.3165
Total	**4.7900e-003**	**0.0407**	**0.0369**	**6.0000e-005**		**2.6600e-003**	**2.6600e-003**		**2.6100e-003**	**2.6100e-003**	**0.0000**	**5.3031**	**5.3031**	**6.4000e-004**	**0.0000**	**5.3165**

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	5.0000e-005	4.9000e-004	6.6000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1286	0.1286	0.0000	0.0000	0.1286
Vendor	6.9000e-004	4.9600e-003	9.4500e-003	1.0000e-005	3.8000e-004	7.0000e-005	4.5000e-004	1.1000e-004	6.0000e-005	1.7000e-004	0.0000	1.2289	1.2289	1.0000e-005	0.0000	1.2291
Worker	4.0000e-004	6.3000e-004	5.9300e-003	1.0000e-005	1.2700e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.0589	1.0589	5.0000e-005	0.0000	1.0601
Total	**1.1400e-003**	**6.0800e-003**	**0.0160**	**2.0000e-005**	**1.6800e-003**	**9.0000e-005**	**1.7600e-003**	**4.6000e-004**	**8.0000e-005**	**5.4000e-004**	**0.0000**	**2.4164**	**2.4164**	**6.0000e-005**	**0.0000**	**2.4178**

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	1.0400e-003	0.0134	0.0392	6.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	5.3031	5.3031	6.4000e-004	0.0000	5.3165
Total	**1.0400e-003**	**0.0134**	**0.0392**	**6.0000e-005**		**5.2000e-004**	**5.2000e-004**		**5.2000e-004**	**5.2000e-004**	**0.0000**	**5.3031**	**5.3031**	**6.4000e-004**	**0.0000**	**5.3165**

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	5.0000e-005	4.9000e-004	6.6000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1286	0.1286	0.0000	0.0000	0.1286
Vendor	6.9000e-004	4.9600e-003	9.4500e-003	1.0000e-005	3.8000e-004	7.0000e-005	4.5000e-004	1.1000e-004	6.0000e-005	1.7000e-004	0.0000	1.2289	1.2289	1.0000e-005	0.0000	1.2291
Worker	4.0000e-004	6.3000e-004	5.9300e-003	1.0000e-005	1.2700e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.5000e-004	0.0000	1.0589	1.0589	5.0000e-005	0.0000	1.0601
Total	**1.1400e-003**	**6.0800e-003**	**0.0160**	**2.0000e-005**	**1.6800e-003**	**9.0000e-005**	**1.7600e-003**	**4.6000e-004**	**8.0000e-005**	**5.4000e-004**	**0.0000**	**2.4164**	**2.4164**	**6.0000e-005**	**0.0000**	**2.4178**

3.9 3_Odor Control System Construction - 2018

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	4.7700e-003	0.0418	0.0341	6.0000e-005		2.5000e-003	2.5000e-003		2.4600e-003	2.4600e-003	0.0000	5.4050	5.4050	6.7000e-004	0.0000	5.4191
Total	**4.7700e-003**	**0.0418**	**0.0341**	**6.0000e-005**		**2.5000e-003**	**2.5000e-003**		**2.4600e-003**	**2.4600e-003**	**0.0000**	**5.4050**	**5.4050**	**6.7000e-004**	**0.0000**	**5.4191**

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	3.9000e-004	4.2100e-003	5.5800e-003	1.0000e-005	2.8000e-004	6.0000e-005	3.4000e-004	8.0000e-005	5.0000e-005	1.3000e-004	0.0000	1.0928	1.0928	1.0000e-005	0.0000	1.0929
Vendor	8.6000e-004	6.2100e-003	0.0118	2.0000e-005	4.8000e-004	9.0000e-005	5.7000e-004	1.4000e-004	8.0000e-005	2.2000e-004	0.0000	1.5362	1.5362	1.0000e-005	0.0000	1.5364
Worker	5.0000e-004	7.9000e-004	7.4100e-003	2.0000e-005	1.5800e-003	1.0000e-005	1.5900e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3237	1.3237	7.0000e-005	0.0000	1.3251
Total	**1.7500e-003**	**0.0112**	**0.0248**	**5.0000e-005**	**2.3400e-003**	**1.6000e-004**	**2.5000e-003**	**6.4000e-004**	**1.4000e-004**	**7.8000e-004**	**0.0000**	**3.9526**	**3.9526**	**9.0000e-005**	**0.0000**	**3.9544**

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	9.2000e-004	0.0136	0.0384	6.0000e-005		4.0000e-004	4.0000e-004		4.0000e-004	4.0000e-004	0.0000	5.4050	5.4050	6.7000e-004	0.0000	5.4191

Total	**9.2000e-004**	**0.0136**	**0.0384**	**6.0000e-005**		**4.0000e-004**	**4.0000e-004**		**4.0000e-004**	**4.0000e-004**	**0.0000**	**5.4050**	**5.4050**	**6.7000e-004**	**0.0000**	**5.4191**

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	3.9000e-004	4.2100e-003	5.5800e-003	1.0000e-005	2.8000e-004	6.0000e-005	3.4000e-004	8.0000e-005	5.0000e-005	1.3000e-004	0.0000	1.0928	1.0928	1.0000e-005	0.0000	1.0929
Vendor	8.6000e-004	6.2100e-003	0.0118	2.0000e-005	4.8000e-004	9.0000e-005	5.7000e-004	1.4000e-004	8.0000e-005	2.2000e-004	0.0000	1.5362	1.5362	1.0000e-005	0.0000	1.5364
Worker	5.0000e-004	7.9000e-004	7.4100e-003	2.0000e-005	1.5800e-003	1.0000e-005	1.5900e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3237	1.3237	7.0000e-005	0.0000	1.3251
Total	**1.7500e-003**	**0.0112**	**0.0248**	**5.0000e-005**	**2.3400e-003**	**1.6000e-004**	**2.5000e-003**	**6.4000e-004**	**1.4000e-004**	**7.8000e-004**	**0.0000**	**3.9526**	**3.9526**	**9.0000e-005**	**0.0000**	**3.9544**

3.10 2_Pre Fabricated Bldg and Electrical Control Center - 2018

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	7.5300e-003	0.0650	0.0535	9.0000e-005		3.9600e-003	3.9600e-003		3.9100e-003	3.9100e-003	0.0000	8.2126	8.2126	8.6000e-004	0.0000	8.2306
Total	**7.5300e-003**	**0.0650**	**0.0535**	**9.0000e-005**		**3.9600e-003**	**3.9600e-003**		**3.9100e-003**	**3.9100e-003**	**0.0000**	**8.2126**	**8.2126**	**8.6000e-004**	**0.0000**	**8.2306**

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	1.0300e-003	7.4500e-003	0.0142	2.0000e-005	5.7000e-004	1.0000e-004	6.8000e-004	1.6000e-004	1.0000e-004	2.6000e-004	0.0000	1.8434	1.8434	1.0000e-005	0.0000	1.8437
Worker	5.9000e-004	9.5000e-004	8.8900e-003	2.0000e-005	1.9000e-003	1.0000e-005	1.9100e-003	5.0000e-004	1.0000e-005	5.2000e-004	0.0000	1.5884	1.5884	8.0000e-005	0.0000	1.5901
Total	**1.6200e-003**	**8.4000e-003**	**0.0231**	**4.0000e-005**	**2.4700e-003**	**1.1000e-004**	**2.5900e-003**	**6.6000e-004**	**1.1000e-004**	**7.8000e-004**	**0.0000**	**3.4318**	**3.4318**	**9.0000e-005**	**0.0000**	**3.4338**

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	1.2100e-003	0.0144	0.0583	9.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	8.2125	8.2125	8.6000e-004	0.0000	8.2306
Total	**1.2100e-003**	**0.0144**	**0.0583**	**9.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**	**0.0000**	**8.2125**	**8.2125**	**8.6000e-004**	**0.0000**	**8.2306**

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	1.0300e-003	7.4500e-003	0.0142	2.0000e-005	5.7000e-004	1.0000e-004	6.8000e-004	1.6000e-004	1.0000e-004	2.6000e-004	0.0000	1.8434	1.8434	1.0000e-005	0.0000	1.8437
Worker	5.9000e-004	9.5000e-004	8.8900e-003	2.0000e-005	1.9000e-003	1.0000e-005	1.9100e-003	5.0000e-004	1.0000e-005	5.2000e-004	0.0000	1.5884	1.5884	8.0000e-005	0.0000	1.5901
Total	**1.6200e-003**	**8.4000e-003**	**0.0231**	**4.0000e-005**	**2.4700e-003**	**1.1000e-004**	**2.5900e-003**	**6.6000e-004**	**1.1000e-004**	**7.8000e-004**	**0.0000**	**3.4318**	**3.4318**	**9.0000e-005**	**0.0000**	**3.4338**

3.11 4_Finished Grading - 2018

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					
Fugitive Dust					8.1000e-004	0.0000	8.1000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3300e-003	0.0244	0.0137	2.0000e-005		1.3000e-003	1.3000e-003		1.2000e-003	1.2000e-003	0.0000	2.1034	2.1034	6.5000e-004	0.0000	2.1172
Total	**2.3300e-003**	**0.0244**	**0.0137**	**2.0000e-005**	**8.1000e-004**	**1.3000e-003**	**2.1100e-003**	**9.0000e-005**	**1.2000e-003**	**1.2900e-003**	**0.0000**	**2.1034**	**2.1034**	**6.5000e-004**	**0.0000**	**2.1172**

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	2.7000e-004	2.8500e-003	3.7800e-003	1.0000e-005	1.9000e-004	4.0000e-005	2.3000e-004	5.0000e-005	3.0000e-005	9.0000e-005	0.0000	0.7392	0.7392	1.0000e-005	0.0000	0.7393
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	2.1000e-004	3.4000e-004	3.1800e-003	1.0000e-005	6.8000e-004	1.0000e-005	6.8000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5673	0.5673	3.0000e-005	0.0000	0.5679
Total	**4.8000e-004**	**3.1900e-003**	**6.9600e-003**	**2.0000e-005**	**8.7000e-004**	**5.0000e-005**	**9.1000e-004**	**2.3000e-004**	**3.0000e-005**	**2.7000e-004**	**0.0000**	**1.3065**	**1.3065**	**4.0000e-005**	**0.0000**	**1.3072**

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					
Fugitive Dust					8.1000e-004	0.0000	8.1000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.4000e-004	0.0203	0.0157	2.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	2.1034	2.1034	6.5000e-004	0.0000	2.1172
Total	**8.4000e-004**	**0.0203**	**0.0157**	**2.0000e-005**	**8.1000e-004**	**6.2000e-004**	**1.4300e-003**	**4.0000e-005**	**6.2000e-004**	**6.6000e-004**	**0.0000**	**2.1034**	**2.1034**	**6.5000e-004**	**0.0000**	**2.1172**

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	2.7000e-004	2.8500e-003	3.7800e-003	1.0000e-005	1.9000e-004	4.0000e-005	2.3000e-004	5.0000e-005	3.0000e-005	9.0000e-005	0.0000	0.7392	0.7392	1.0000e-005	0.0000	0.7393
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	2.1000e-004	3.4000e-004	3.1800e-003	1.0000e-005	6.8000e-004	1.0000e-005	6.8000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5673	0.5673	3.0000e-005	0.0000	0.5679
Total	**4.8000e-004**	**3.1900e-003**	**6.9600e-003**	**2.0000e-005**	**8.7000e-004**	**5.0000e-005**	**9.1000e-004**	**2.3000e-004**	**3.0000e-005**	**2.7000e-004**	**0.0000**	**1.3065**	**1.3065**	**4.0000e-005**	**0.0000**	**1.3072**

3.12 4_Parking Lot Lighting - 2018

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	2.1700e-003	0.0192	0.0149	3.0000e-005		1.1200e-003	1.1200e-003		1.1100e-003	1.1100e-003	0.0000	2.3480	2.3480	2.6000e-004	0.0000	2.3534
Total	**2.1700e-003**	**0.0192**	**0.0149**	**3.0000e-005**		**1.1200e-003**	**1.1200e-003**		**1.1100e-003**	**1.1100e-003**	**0.0000**	**2.3480**	**2.3480**	**2.6000e-004**	**0.0000**	**2.3534**

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	3.1000e-004	2.2300e-003	4.2500e-003	1.0000e-005	1.7000e-004	3.0000e-005	2.0000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.5530	0.5530	0.0000	0.0000	0.5531
Worker	1.8000e-004	2.8000e-004	2.6700e-003	1.0000e-005	5.7000e-004	0.0000	5.7000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.4765	0.4765	2.0000e-005	0.0000	0.4770
Total	**4.9000e-004**	**2.5100e-003**	**6.9200e-003**	**2.0000e-005**	**7.4000e-004**	**3.0000e-005**	**7.7000e-004**	**2.0000e-004**	**3.0000e-005**	**2.4000e-004**	**0.0000**	**1.0295**	**1.0295**	**2.0000e-005**	**0.0000**	**1.0301**

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	3.3000e-004	4.5000e-003	0.0163	3.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	2.3480	2.3480	2.6000e-004	0.0000	2.3534

Total	**3.3000e-004**	**4.5000e-003**	**0.0163**	**3.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**	**0.0000**	**2.3480**	**2.3480**	**2.6000e-004**	**0.0000**	**2.3534**

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	3.1000e-004	2.2300e-003	4.2500e-003	1.0000e-005	1.7000e-004	3.0000e-005	2.0000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.5530	0.5530	0.0000	0.0000	0.5531
Worker	1.8000e-004	2.8000e-004	2.6700e-003	1.0000e-005	5.7000e-004	0.0000	5.7000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.4765	0.4765	2.0000e-005	0.0000	0.4770
Total	**4.9000e-004**	**2.5100e-003**	**6.9200e-003**	**2.0000e-005**	**7.4000e-004**	**3.0000e-005**	**7.7000e-004**	**2.0000e-004**	**3.0000e-005**	**2.4000e-004**	**0.0000**	**1.0295**	**1.0295**	**2.0000e-005**	**0.0000**	**1.0301**

3.13 4_Concrete Curb/AC Pavement - 2018

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	5.2000e-003	0.0456	0.0395	7.0000e-005		2.8300e-003	2.8300e-003		2.7600e-003	2.7600e-003	0.0000	5.7513	5.7513	7.8000e-004	0.0000	5.7677
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.2000e-003**	**0.0456**	**0.0395**	**7.0000e-005**		**2.8300e-003**	**2.8300e-003**		**2.7600e-003**	**2.7600e-003**	**0.0000**	**5.7513**	**5.7513**	**7.8000e-004**	**0.0000**	**5.7677**

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	5.3000e-004	5.6900e-003	7.5600e-003	2.0000e-005	3.8000e-004	7.0000e-005	4.6000e-004	1.1000e-004	7.0000e-005	1.7000e-004	0.0000	1.4784	1.4784	1.0000e-005	0.0000	1.4787
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	3.5000e-004	5.6000e-004	5.2300e-003	1.0000e-005	1.1200e-003	1.0000e-005	1.1200e-003	3.0000e-004	1.0000e-005	3.0000e-004	0.0000	0.9341	0.9341	5.0000e-005	0.0000	0.9351
Total	**8.8000e-004**	**6.2500e-003**	**0.0128**	**3.0000e-005**	**1.5000e-003**	**8.0000e-005**	**1.5800e-003**	**4.1000e-004**	**8.0000e-005**	**4.7000e-004**	**0.0000**	**2.4126**	**2.4126**	**6.0000e-005**	**0.0000**	**2.4138**

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	1.2000e-003	0.0172	0.0430	7.0000e-005		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	5.7513	5.7513	7.8000e-004	0.0000	5.7677
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.2000e-003**	**0.0172**	**0.0430**	**7.0000e-005**		**5.9000e-004**	**5.9000e-004**		**5.9000e-004**	**5.9000e-004**	**0.0000**	**5.7513**	**5.7513**	**7.8000e-004**	**0.0000**	**5.7677**

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	5.3000e-004	5.6900e-003	7.5600e-003	2.0000e-005	3.8000e-004	7.0000e-005	4.6000e-004	1.1000e-004	7.0000e-005	1.7000e-004	0.0000	1.4784	1.4784	1.0000e-005	0.0000	1.4787
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	3.5000e-004	5.6000e-004	5.2300e-003	1.0000e-005	1.1200e-003	1.0000e-005	1.1200e-003	3.0000e-004	1.0000e-005	3.0000e-004	0.0000	0.9341	0.9341	5.0000e-005	0.0000	0.9351
Total	**8.8000e-004**	**6.2500e-003**	**0.0128**	**3.0000e-005**	**1.5000e-003**	**8.0000e-005**	**1.5800e-003**	**4.1000e-004**	**8.0000e-005**	**4.7000e-004**	**0.0000**	**2.4126**	**2.4126**	**6.0000e-005**	**0.0000**	**2.4138**

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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					
Fugitive Dust					1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3400e-003	0.0144	0.0140	2.0000e-005		9.2000e-004	9.2000e-004		8.5000e-004	8.5000e-004	0.0000	1.7662	1.7662	5.5000e-004	0.0000	1.7778
Total	**1.3400e-003**	**0.0144**	**0.0140**	**2.0000e-005**	**1.0000e-005**	**9.2000e-004**	**9.3000e-004**	**0.0000**	**8.5000e-004**	**8.5000e-004**	**0.0000**	**1.7662**	**1.7662**	**5.5000e-004**	**0.0000**	**1.7778**

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	1.3000e-004	1.3600e-003	1.8100e-003	0.0000	9.0000e-005	2.0000e-005	1.1000e-004	3.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.3535	0.3535	0.0000	0.0000	0.3536
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	1.0000e-004	1.6000e-004	1.4800e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.2647	0.2647	1.0000e-005	0.0000	0.2650
Total	**2.3000e-004**	**1.5200e-003**	**3.2900e-003**	**0.0000**	**4.1000e-004**	**2.0000e-005**	**4.3000e-004**	**1.1000e-004**	**2.0000e-005**	**1.3000e-004**	**0.0000**	**0.6183**	**0.6183**	**1.0000e-005**	**0.0000**	**0.6186**

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					
Fugitive Dust					1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.1000e-004	0.0188	0.0146	2.0000e-005		7.6000e-004	7.6000e-004		7.6000e-004	7.6000e-004	0.0000	1.7662	1.7662	5.5000e-004	0.0000	1.7778
Total	**9.1000e-004**	**0.0188**	**0.0146**	**2.0000e-005**	**1.0000e-005**	**7.6000e-004**	**7.7000e-004**	**0.0000**	**7.6000e-004**	**7.6000e-004**	**0.0000**	**1.7662**	**1.7662**	**5.5000e-004**	**0.0000**	**1.7778**

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	1.3000e-004	1.3600e-003	1.8100e-003	0.0000	9.0000e-005	2.0000e-005	1.1000e-004	3.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.3535	0.3535	0.0000	0.0000	0.3536
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	1.0000e-004	1.6000e-004	1.4800e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.2647	0.2647	1.0000e-005	0.0000	0.2650
Total	**2.3000e-004**	**1.5200e-003**	**3.2900e-003**	**0.0000**	**4.1000e-004**	**2.0000e-005**	**4.3000e-004**	**1.1000e-004**	**2.0000e-005**	**1.3000e-004**	**0.0000**	**0.6183**	**0.6183**	**1.0000e-005**	**0.0000**	**0.6186**

Conveyance

Pacifica, Conveyance System, Construction GHG Emissions

San Mateo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	22.59	1000sqft	0.52	22,565.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	429.6	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Revised CO2 Emission Intensity

Land Use - From Project Description

Construction Phase - Applicant Provided Construction Schedule

Off-road Equipment - Applicant Provided Equipment List

Off-road Equipment - Applicant Provided Equipment List

Off-road Equipment - Applicant Provided Equipment List

Off-road Equipment - Applicant Provided Equipment List

Off-road Equipment - Applicant provided equipment list

Trips and VMT - 0.5 miles for community risk assessment

Construction Off-road Equipment Mitigation - Best Management Practices
Tier 2 Mitigation for all equipment>25 HP

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	100.00	15.00
tblConstructionPhase	PhaseEndDate	4/27/2018	4/6/2018
tblConstructionPhase	PhaseEndDate	4/20/2018	4/6/2018
tblConstructionPhase	PhaseEndDate	7/11/2018	7/12/2018
tblConstructionPhase	PhaseEndDate	8/2/2018	8/6/2018
tblConstructionPhase	PhaseStartDate	4/7/2018	3/19/2018
tblConstructionPhase	PhaseStartDate	4/7/2018	3/26/2018
tblConstructionPhase	PhaseStartDate	4/7/2018	4/10/2018
tblConstructionPhase	PhaseStartDate	7/13/2018	7/17/2018
tblLandUse	LandUseSquareFeet	22,590.00	22,565.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	4.00	6.00
tblOffRoadEquipment	UsageHours	8.00	3.70
tblProjectCharacteristics	CO2IntensityFactor	641.35	429.6
tblProjectCharacteristics	OperationalYear	2014	2019
tblTripsAndVMT	HaulingTripNumber	0.00	20.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	20.00
tblTripsAndVMT	HaulingTripNumber	0.00	400.00
tblTripsAndVMT	HaulingTripNumber	0.00	100.00

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					
2018	0.1329	1.1837	1.1137	2.0100e-003	0.0159	0.0664	0.0823	4.2700e-003	0.0643	0.0686	0.0000	174.9553	174.9553	0.0267	0.0000	175.5150
Total	**0.1329**	**1.1837**	**1.1137**	**2.0100e-003**	**0.0159**	**0.0664**	**0.0823**	**4.2700e-003**	**0.0643**	**0.0686**	**0.0000**	**174.9553**	**174.9553**	**0.0267**	**0.0000**	**175.5150**

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					
2018	0.0462	0.7331	1.2428	2.0100e-003	0.0159	0.0215	0.0374	4.2700e-003	0.0215	0.0257	0.0000	174.9552	174.9552	0.0267	0.0000	175.5149
Total	**0.0462**	**0.7331**	**1.2428**	**2.0100e-003**	**0.0159**	**0.0215**	**0.0374**	**4.2700e-003**	**0.0215**	**0.0257**	**0.0000**	**174.9552**	**174.9552**	**0.0267**	**0.0000**	**175.5149**

	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	**65.23**	**38.06**	**-11.58**	**0.00**	**0.00**	**67.56**	**54.51**	**0.00**	**66.62**	**62.47**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	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					
Area	0.0999	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.3000e-004
Energy	3.1200e-003	0.0284	0.0239	1.7000e-004		2.1600e-003	2.1600e-003		2.1600e-003	2.1600e-003	0.0000	67.2866	67.2866	3.0500e-003	1.0700e-003	67.6838
Mobile	0.0590	0.1269	0.6432	1.6900e-003	0.1283	1.8600e-003	0.1301	0.0344	1.7200e-003	0.0361	0.0000	120.8359	120.8359	4.8100e-003	0.0000	120.9368
Waste						0.0000	0.0000		0.0000	0.0000	5.6858	0.0000	5.6858	0.3360	0.0000	12.7422
Water						0.0000	0.0000		0.0000	0.0000	1.6573	5.5082	7.1655	0.1706	4.1000e-003	12.0178
Total	**0.1620**	**0.1553**	**0.6673**	**1.8600e-003**	**0.1283**	**4.0200e-003**	**0.1323**	**0.0344**	**3.8800e-003**	**0.0383**	**7.3431**	**193.6311**	**200.9742**	**0.5145**	**5.1700e-003**	**213.3810**

Mitigated Operational

	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					
Area	0.0999	0.0000	2.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-004	4.0000e-004	0.0000	0.0000	4.3000e-004
Energy	3.1200e-003	0.0284	0.0239	1.7000e-004		2.1600e-003	2.1600e-003		2.1600e-003	2.1600e-003	0.0000	67.2866	67.2866	3.0500e-003	1.0700e-003	67.6838
Mobile	0.0590	0.1269	0.6432	1.6900e-003	0.1283	1.8600e-003	0.1301	0.0344	1.7200e-003	0.0361	0.0000	120.8359	120.8359	4.8100e-003	0.0000	120.9368
Waste						0.0000	0.0000		0.0000	0.0000	5.6858	0.0000	5.6858	0.3360	0.0000	12.7422
Water						0.0000	0.0000		0.0000	0.0000	1.6573	5.5082	7.1655	0.1706	4.0900e-003	12.0151
Total	**0.1620**	**0.1553**	**0.6673**	**1.8600e-003**	**0.1283**	**4.0200e-003**	**0.1323**	**0.0344**	**3.8800e-003**	**0.0383**	**7.3431**	**193.6311**	**200.9742**	**0.5144**	**5.1600e-003**	**213.3784**

	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**	**0.01**	**0.19**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	EQ Basin, Effluent Piping	Trenching	3/19/2018	4/6/2018	5	15	
2	Vault Construction and Pump Piping, Diversion Structures	Building Construction	3/19/2018	4/6/2018	5	15	
3	Water Service Line	Trenching	3/26/2018	4/6/2018	5	10	
4	Influent Conveyance Pipe, Diversion	Trenching	4/10/2018	7/12/2018	5	68	
5	Jack and Bore Casing	Trenching	7/17/2018	8/6/2018	5	15	

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 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
EQ Basi Effluent PipingiGenerator Setii5.i8i0.7i					
EQ Basi Effluent PipingiGraderiii17i0.4i					
EQ Basi Effluent PipingiPumpiii8i0.7i					
EQ Basi Effluent PipingiRubber Tired Dozeriii25i0.i					
EQ Basi Effluent PipingiRubber Tired Loaderii2.i19i0.3i					
EQ Basi Effluent PipingiTractors/Loaders/Backhoeii2.i9i0.3i					
EQ Basi Effluent PipingiTractors/Loaders/Backhoeii5.i9i0.3i					
Influent Conveyance Pip DiversionpExcavatorpp7.p16p0.3p					
Influent Conveyance Pip DiversionpExcavatorpp7.p16p0.3p					
Influent Conveyance Pip DiversionpGenerator Setpp7.p8p0.7p					
Influent Conveyance Pip DiversionpGraderppp17p0.4p					
Influent Conveyance Pip DiversionpPaverpp0.p12p0.4p					
Influent Conveyance Pip DiversionpPumppp7.p8p0.7p					
Influent Conveyance Pip DiversionpRollerpp0.p8p0.3p					
Influent Conveyance Pip DiversionpRubber Tired Dozerppp25p0.p					

Influent Conveyance Pip DiversionpRubber Tired Loaderpp3.p19p0.3p					
Influent Conveyance Pip DiversionpTractors/Loaders/Backhoepp 7.p9p0.3p					
Vault Construction and Pump Pipin Diversion StructuresnConcrete/Industrial					
Vault Construction and Pump Pipin Diversion StructuresnCranennn22n0.2n					
Vault Construction and Pump Pipin Diversion StructuresnForkliftnnn8n0.n					
Vault Construction and Pump Pipin Diversion StructuresnGenerator Setnnn8n0.7n					
Vault Construction and Pump Pipin Diversion StructuresnRubber Tired Dozennn25n0.n					
Vault Construction and Pump Pipin Diversion StructuresnTractors/Loaders/Backhoen n3.n9n0.3n					
Vault Construction and Pump Pipin Diversion StructuresnWeldernnn4n0.4n					
EQ Basin, Effluent Piping	Generator Sets	1	5.30	84	0.74
EQ Basin, Effluent Piping	Graders	0	8.00	174	0.41
EQ Basin, Effluent Piping	Pumps	1	8.00	84	0.74
EQ Basin, Effluent Piping	Rubber Tired Dozers	0	7.00	255	0.40
EQ Basin, Effluent Piping	Rubber Tired Loaders	1	2.10	199	0.36
EQ Basin, Effluent Piping	Tractors/Loaders/Backhoes	1	5.30	97	0.37
EQ Basin, Effluent Piping	Tractors/Loaders/Backhoes	1	2.70	97	0.37
Vault Construction and Pump Piping, Diversion Structures	Concrete/Industrial Saws	0	8.00	81	0.73
Vault Construction and Pump Piping, Diversion Structures	Cranes	0	6.00	226	0.29
Vault Construction and Pump Piping, Diversion Structures	Forklifts	0	6.00	89	0.20

Vault Construction and Pump Piping, Diversion Structures	Generator Sets	2	8.00	84	0.74
Vault Construction and Pump Piping, Diversion Structures	Rubber Tired Dozers	0	8.00	255	0.40
Vault Construction and Pump Piping, Diversion Structures	Tractors/Loaders/Backhoes	1	3.70	97	0.37
Vault Construction and Pump Piping, Diversion Structures	Welders	0	8.00	46	0.45
Water Service Line	Generator Sets	1	8.00	84	0.74
Water Service Line	Pumps	1	12.00	84	0.74
Water Service Line	Rubber Tired Loaders	1	3.20	199	0.36
Water Service Line	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Water Service Line	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Influent Conveyance Pipe, Diversion	Excavators	1	7.10	162	0.38
Influent Conveyance Pipe, Diversion	Excavators	1	7.10	162	0.38
Influent Conveyance Pipe, Diversion	Generator Sets	1	7.10	84	0.74
Influent Conveyance Pipe, Diversion	Graders	0	6.00	174	0.41
Influent Conveyance Pipe, Diversion	Pavers	1	0.80	125	0.42
Influent Conveyance Pipe, Diversion	Pumps	2	7.10	84	0.74
Influent Conveyance Pipe, Diversion	Rollers	1	0.80	80	0.38
Influent Conveyance Pipe, Diversion	Rubber Tired Dozers	0	6.00	255	0.40
Influent Conveyance Pipe, Diversion	Rubber Tired Loaders	1	3.50	199	0.36
Influent Conveyance Pipe, Diversion	Tractors/Loaders/Backhoes	1	7.10	97	0.37
Jack and Bore Casing	Bore/Drill Rigs	1	2.70	205	0.50
Jack and Bore Casing	Cranes	0	6.00	226	0.29
Jack and Bore Casing	Excavators	2	2.70	162	0.38
Jack and Bore Casing	Excavators	2	1.60	162	0.38
Jack and Bore Casing	Forklifts	0	6.00	89	0.20
Jack and Bore Casing	Generator Sets	1	5.30	84	0.74
Jack and Bore Casing	Pumps	2	6.90	84	0.74
Jack and Bore Casing	Rubber Tired Loaders	2	1.30	199	0.36
Jack and Bore Casing	Tractors/Loaders/Backhoes	2	1.30	97	0.37

Jack and Bore Casing	Welders	0	8.00	46	0.45

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
EQ Basin, Effluent Piping	5	13.00	0.00	20.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Vault Construction and Pump Piping, Diversion Structures	3	9.00	4.00	2.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Water Service Line	5	13.00	0.00	20.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Influent Conveyance Pipe, Diversion	9	23.00	0.00	400.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Jack and Bore Casing	12	30.00	0.00	100.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 EQ Basin, Effluent Piping - 2018

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	9.3200e-003	0.0818	0.0680	1.2000e-004		5.1200e-003	5.1200e-003		4.9800e-003	4.9800e-003	0.0000	10.2766	10.2766	1.5300e-003	0.0000	10.3087
Total	**9.3200e-003**	**0.0818**	**0.0680**	**1.2000e-004**		**5.1200e-003**	**5.1200e-003**		**4.9800e-003**	**4.9800e-003**	**0.0000**	**10.2766**	**10.2766**	**1.5300e-003**	**0.0000**	**10.3087**

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	2.3000e-004	2.4700e-003	3.2900e-003	1.0000e-005	1.7000e-004	3.0000e-005	2.0000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.6428	0.6428	0.0000	0.0000	0.6429
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	2.8000e-004	4.4000e-004	4.1300e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.7375	0.7375	4.0000e-005	0.0000	0.7383
Total	**5.1000e-004**	**2.9100e-003**	**7.4200e-003**	**2.0000e-005**	**1.0500e-003**	**4.0000e-005**	**1.0900e-003**	**2.8000e-004**	**4.0000e-005**	**3.2000e-004**	**0.0000**	**1.3803**	**1.3803**	**4.0000e-005**	**0.0000**	**1.3812**

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	2.2100e-003	0.0364	0.0746	1.2000e-004		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	10.2765	10.2765	1.5300e-003	0.0000	10.3086
Total	**2.2100e-003**	**0.0364**	**0.0746**	**1.2000e-004**		**1.2400e-003**	**1.2400e-003**		**1.2400e-003**	**1.2400e-003**	**0.0000**	**10.2765**	**10.2765**	**1.5300e-003**	**0.0000**	**10.3086**

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	2.3000e-004	2.4700e-003	3.2900e-003	1.0000e-005	1.7000e-004	3.0000e-005	2.0000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.6428	0.6428	0.0000	0.0000	0.6429
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	2.8000e-004	4.4000e-004	4.1300e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.7375	0.7375	4.0000e-005	0.0000	0.7383
Total	**5.1000e-004**	**2.9100e-003**	**7.4200e-003**	**2.0000e-005**	**1.0500e-003**	**4.0000e-005**	**1.0900e-003**	**2.8000e-004**	**4.0000e-005**	**3.2000e-004**	**0.0000**	**1.3803**	**1.3803**	**4.0000e-005**	**0.0000**	**1.3812**

3.3 Vault Construction and Pump Piping, Diversion Structures -

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	8.5000e-003	0.0708	0.0643	1.1000e-004		4.5800e-003	4.5800e-003		4.5200e-003	4.5200e-003	0.0000	9.4624	9.4624	9.2000e-004	0.0000	9.4816
Total	**8.5000e-003**	**0.0708**	**0.0643**	**1.1000e-004**		**4.5800e-003**	**4.5800e-003**		**4.5200e-003**	**4.5200e-003**	**0.0000**	**9.4624**	**9.4624**	**9.2000e-004**	**0.0000**	**9.4816**

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	2.0000e-005	2.5000e-004	3.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0643	0.0643	0.0000	0.0000	0.0643
Vendor	3.4000e-004	2.4800e-003	4.7300e-003	1.0000e-005	1.9000e-004	3.0000e-005	2.3000e-004	5.0000e-005	3.0000e-005	9.0000e-005	0.0000	0.6145	0.6145	0.0000	0.0000	0.6146
Worker	1.9000e-004	3.0000e-004	2.8600e-003	1.0000e-005	6.1000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.7000e-004	0.0000	0.5106	0.5106	3.0000e-005	0.0000	0.5111
Total	**5.5000e-004**	**3.0300e-003**	**7.9200e-003**	**2.0000e-005**	**8.2000e-004**	**3.0000e-005**	**8.6000e-004**	**2.1000e-004**	**3.0000e-005**	**2.7000e-004**	**0.0000**	**1.1893**	**1.1893**	**3.0000e-005**	**0.0000**	**1.1900**

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	1.4900e-003	0.0147	0.0690	1.1000e-004		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	9.4623	9.4623	9.2000e-004	0.0000	9.4816
Total	**1.4900e-003**	**0.0147**	**0.0690**	**1.1000e-004**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**9.4623**	**9.4623**	**9.2000e-004**	**0.0000**	**9.4816**

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	2.0000e-005	2.5000e-004	3.3000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0643	0.0643	0.0000	0.0000	0.0643
Vendor	3.4000e-004	2.4800e-003	4.7300e-003	1.0000e-005	1.9000e-004	3.0000e-005	2.3000e-004	5.0000e-005	3.0000e-005	9.0000e-005	0.0000	0.6145	0.6145	0.0000	0.0000	0.6146
Worker	1.9000e-004	3.0000e-004	2.8600e-003	1.0000e-005	6.1000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.7000e-004	0.0000	0.5106	0.5106	3.0000e-005	0.0000	0.5111
Total	**5.5000e-004**	**3.0300e-003**	**7.9200e-003**	**2.0000e-005**	**8.2000e-004**	**3.0000e-005**	**8.6000e-004**	**2.1000e-004**	**3.0000e-005**	**2.7000e-004**	**0.0000**	**1.1893**	**1.1893**	**3.0000e-005**	**0.0000**	**1.1900**

3.4 Water Service Line - 2018

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	9.3500e-003	0.0820	0.0682	1.2000e-004		5.1300e-003	5.1300e-003		4.9900e-003	4.9900e-003	0.0000	10.3117	10.3117	1.5400e-003	0.0000	10.3439
Total	**9.3500e-003**	**0.0820**	**0.0682**	**1.2000e-004**		**5.1300e-003**	**5.1300e-003**		**4.9900e-003**	**4.9900e-003**	**0.0000**	**10.3117**	**10.3117**	**1.5400e-003**	**0.0000**	**10.3439**

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	2.3000e-004	2.4700e-003	3.2900e-003	1.0000e-005	1.7000e-004	3.0000e-005	2.0000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.6428	0.6428	0.0000	0.0000	0.6429
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	1.8000e-004	2.9000e-004	2.7500e-003	1.0000e-005	5.9000e-004	0.0000	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4917	0.4917	2.0000e-005	0.0000	0.4922
Total	**4.1000e-004**	**2.7600e-003**	**6.0400e-003**	**2.0000e-005**	**7.6000e-004**	**3.0000e-005**	**7.9000e-004**	**2.1000e-004**	**3.0000e-005**	**2.4000e-004**	**0.0000**	**1.1345**	**1.1345**	**2.0000e-005**	**0.0000**	**1.1351**

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	2.2200e-003	0.0366	0.0748	1.2000e-004		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	10.3117	10.3117	1.5400e-003	0.0000	10.3439
Total	**2.2200e-003**	**0.0366**	**0.0748**	**1.2000e-004**		**1.2400e-003**	**1.2400e-003**		**1.2400e-003**	**1.2400e-003**	**0.0000**	**10.3117**	**10.3117**	**1.5400e-003**	**0.0000**	**10.3439**

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	2.3000e-004	2.4700e-003	3.2900e-003	1.0000e-005	1.7000e-004	3.0000e-005	2.0000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.6428	0.6428	0.0000	0.0000	0.6429
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	1.8000e-004	2.9000e-004	2.7500e-003	1.0000e-005	5.9000e-004	0.0000	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.4917	0.4917	2.0000e-005	0.0000	0.4922
Total	**4.1000e-004**	**2.7600e-003**	**6.0400e-003**	**2.0000e-005**	**7.6000e-004**	**3.0000e-005**	**7.9000e-004**	**2.1000e-004**	**3.0000e-005**	**2.4000e-004**	**0.0000**	**1.1345**	**1.1345**	**2.0000e-005**	**0.0000**	**1.1351**

3.5 Influent Conveyance Pipe, Diversion - 2018

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	0.0815	0.7449	0.6574	1.1200e-003		0.0433	0.0433		0.0418	0.0418	0.0000	99.4303	99.4303	0.0188	0.0000	99.8258

Total	**0.0815**	**0.7449**	**0.6574**	**1.1200e-003**		**0.0433**	**0.0433**		**0.0418**	**0.0418**	**0.0000**	**99.4303**	**99.4303**	**0.0188**	**0.0000**	**99.8258**

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	4.6300e-003	0.0495	0.0657	1.5000e-004	3.3400e-003	6.5000e-004	3.9900e-003	9.2000e-004	6.0000e-004	1.5100e-003	0.0000	12.8560	12.8560	9.0000e-005	0.0000	12.8580
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	2.2100e-003	3.5300e-003	0.0331	8.0000e-005	7.0700e-003	5.0000e-005	7.1200e-003	1.8800e-003	5.0000e-005	1.9300e-003	0.0000	5.9149	5.9149	2.9000e-004	0.0000	5.9211
Total	**6.8400e-003**	**0.0530**	**0.0988**	**2.3000e-004**	**0.0104**	**7.0000e-004**	**0.0111**	**2.8000e-003**	**6.5000e-004**	**3.4400e-003**	**0.0000**	**18.7709**	**18.7709**	**3.8000e-004**	**0.0000**	**18.7791**

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	0.0261	0.4896	0.7476	1.1200e-003		0.0153	0.0153		0.0153	0.0153	0.0000	99.4301	99.4301	0.0188	0.0000	99.8257
Total	**0.0261**	**0.4896**	**0.7476**	**1.1200e-003**		**0.0153**	**0.0153**		**0.0153**	**0.0153**	**0.0000**	**99.4301**	**99.4301**	**0.0188**	**0.0000**	**99.8257**

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	4.6300e-003	0.0495	0.0657	1.5000e-004	3.3400e-003	6.5000e-004	3.9900e-003	9.2000e-004	6.0000e-004	1.5100e-003	0.0000	12.8560	12.8560	9.0000e-005	0.0000	12.8580
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	2.2100e-003	3.5300e-003	0.0331	8.0000e-005	7.0700e-003	5.0000e-005	7.1200e-003	1.8800e-003	5.0000e-005	1.9300e-003	0.0000	5.9149	5.9149	2.9000e-004	0.0000	5.9211
Total	**6.8400e-003**	**0.0530**	**0.0988**	**2.3000e-004**	**0.0104**	**7.0000e-004**	**0.0111**	**2.8000e-003**	**6.5000e-004**	**3.4400e-003**	**0.0000**	**18.7709**	**18.7709**	**3.8000e-004**	**0.0000**	**18.7791**

3.6 Jack and Bore Casing - 2018

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	0.0142	0.1290	0.1097	2.1000e-004		7.2800e-003	7.2800e-003		7.0900e-003	7.0900e-003	0.0000	18.0836	18.0836	3.2300e-003	0.0000	18.1516
Total	**0.0142**	**0.1290**	**0.1097**	**2.1000e-004**		**7.2800e-003**	**7.2800e-003**		**7.0900e-003**	**7.0900e-003**	**0.0000**	**18.0836**	**18.0836**	**3.2300e-003**	**0.0000**	**18.1516**

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	1.1600e-003	0.0124	0.0164	4.0000e-005	8.3000e-004	1.6000e-004	1.0000e-003	2.3000e-004	1.5000e-004	3.8000e-004	0.0000	3.2140	3.2140	2.0000e-005	0.0000	3.2145
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	6.4000e-004	1.0200e-003	9.5300e-003	2.0000e-005	2.0300e-003	2.0000e-005	2.0500e-003	5.4000e-004	1.0000e-005	5.5000e-004	0.0000	1.7019	1.7019	8.0000e-005	0.0000	1.7037
Total	**1.8000e-003**	**0.0134**	**0.0260**	**6.0000e-005**	**2.8600e-003**	**1.8000e-004**	**3.0500e-003**	**7.7000e-004**	**1.6000e-004**	**9.3000e-004**	**0.0000**	**4.9159**	**4.9159**	**1.0000e-004**	**0.0000**	**4.9181**

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	4.1100e-003	0.0807	0.1306	2.1000e-004		2.2500e-003	2.2500e-003		2.2500e-003	2.2500e-003	0.0000	18.0836	18.0836	3.2300e-003	0.0000	18.1516
Total	**4.1100e-003**	**0.0807**	**0.1306**	**2.1000e-004**		**2.2500e-003**	**2.2500e-003**		**2.2500e-003**	**2.2500e-003**	**0.0000**	**18.0836**	**18.0836**	**3.2300e-003**	**0.0000**	**18.1516**

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	1.1600e-003	0.0124	0.0164	4.0000e-005	8.3000e-004	1.6000e-004	1.0000e-003	2.3000e-004	1.5000e-004	3.8000e-004	0.0000	3.2140	3.2140	2.0000e-005	0.0000	3.2145
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	6.4000e-004	1.0200e-003	9.5300e-003	2.0000e-005	2.0300e-003	2.0000e-005	2.0500e-003	5.4000e-004	1.0000e-005	5.5000e-004	0.0000	1.7019	1.7019	8.0000e-005	0.0000	1.7037
Total	**1.8000e-003**	**0.0134**	**0.0260**	**6.0000e-005**	**2.8600e-003**	**1.8000e-004**	**3.0500e-003**	**7.7000e-004**	**1.6000e-004**	**9.3000e-004**	**0.0000**	**4.9159**	**4.9159**	**1.0000e-004**	**0.0000**	**4.9181**

APPENDIX C

BIOLOGICAL RESOURCES EVALUATION (MIG | TRA ENVIRONMENTAL SCIENCES)

Pacifica Wet Weather Equalization Basin Project
Biological Resources Evaluation

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Project Number: 16072

Contents

1 Introduction

This report presents the results of a biological resources evaluation and impact analysis of the Pacifica Wet Weather Equalization (EQ) Basin Project (project) that will be constructed under the existing City Skate Park parking lot and adjacent to the Community Center in the Linda Mar neighborhood in the City of Pacifica, San Mateo County, California (Figure 1). The biological evaluation and impact analysis was completed by MIG | TRA Environmental Sciences (MIG). It identifies sensitive biological resources within a defined Biological Study Area (BSA) on and near the project and potential impacts to those resources resulting from development of the project (Figure 2). This report provides:

- A description of the general environmental setting;
- a list of the federal, state, and local regulations that may pertain to activities within the BSA;
- a description of the environmental conditions in the BSA, including vegetation communities and associated wildlife habitats present;
- a discussion of special-status plant and animal species and sensitive communities that are known to occur or that could potentially occur at or near the BSA;
- an evaluation of the potential impacts to biological resources that may occur because of project activities;
- Avoidance and Minimization Measures (AMMs) recommended to avoid or minimize potentially significant impacts to biological resources, and to ensure that the project remains in compliance with all applicable federal, state, and local regulatory requirements;
- responses to the California Environmental Quality Act (CEQA) Guidelines Appendix G questions related to biological resources;
- the results of an exploratory wetland determination in areas that will be impacted by project activities; and
- the results of a burrow survey to assess potential impacts to special-status species.

2 Project Description and Location

The City of Pacifica (City) intends to construct and utilize the proposed wet weather flow EQ basin and associated influent pipelines as a key element to mitigate storm-related sanitary sewer overflows (SSOs) in the City's wastewater collection system and reduce peak wet weather flows to the City's Calera Creek Water Recycling Plant.

The proposed EQ basin is a key element of the program recommended in the City's 2011 Master Plan to eliminate storm-related SSOs in the City's wastewater collection system and reduce peak wet weather flows to the City's Calera Creek Water Recycling Plant. Based on the Master Plan findings, a 2.1 million-gallon wet weather EQ basin located near the Linda Mar

Pump Station was identified as the most viable alternative (in addition to other recommended sewer improvements) for meeting regulatory requirements for eliminating capacity-related SSOs. Because of SSOs that have occurred in the system, the Regional Water Quality Control Board (RWQCB) issued a Cease and Desist Order (CDO) to the City in May 2011, and the City entered into a Consent Decree with Our Children's Earth Foundation in June 2011, requiring it to implement several measures targeted at reducing SSOs. The objective of the proposed project is to meet the requirements of the CDO and Consent Decree by January 1, 2019.

The project includes the EQ basin and minimal above-ground structures. The EQ basin is a 2.1 million-gallon rectangular-shaped concrete holding tank that will be constructed under the City's Skate Park parking lot. The above ground structures include an electrical control building, odor control facilities, and bio-retention basins for storm water pollution control for the parking lot, which will be restored after the installation of the EQ basin. The project also consists of underground sanitary sewer diversion structures and influent (flow into the basin) and effluent (flow out of the basin) pipelines (Figure 3). The pipelines will be built primarily within paved City-owned rights-of-way that contain existing utilities; however, there is a 200-linear-foot-long by 10-foot-wide utility easement underneath residences and a drainage easement between the EQ basin and the intersection of Anza Drive and Balboa Way that requires installation of a new sewer line to carry influent to the EQ basin. This new line will be installed using a jack-and-bore method, and the required pits dug at each end of the installation are in paved areas that will be restored once the line is installed. The influent pipeline would lie beneath a landscaped area to the south of the proposed EQ basin and beneath an existing 24-inch diameter culvert within an existing drainage easement that lies between the residences and the Skate Park parking lot.

For this report, the BSA includes the EQ basin location under the existing Skate Park parking lot, haul routes, areas of temporary impact caused by equipment and materials staging and soil stockpiles, and adjacent areas that are not developed (Figure 2). The piping shown in Figure 3 is not included in the BSA because these pipelines will be built within existing utility right-of-way easements in the adjacent neighborhood, which is completely developed with homes and paved streets.

The BSA is approximately seven acres in size and is approximately 500 feet from the shoreline of the Pacific Ocean. It lies between 10 and 17 feet above sea level. Adjacent areas contain residential and commercial development, Highway 1 and Crespi Drive, and undeveloped land (see Appendix A Figures 1, 2; and 3, and Appendix B Site Photos). The BSA is classified as Urban Land in the City of Pacifica's Sensitive and Critical Habitat Map (City of Pacifica 2009).

3 Regulatory Setting

Biological and water resources in California are protected under federal, state, and local laws. The laws that may pertain to the biological and water resources within the BSA include the following:

3.1 Federal Endangered Species Act

The Federal Endangered Species Act of 1973 (FESA), as amended, provides the regulatory framework for the protection of plant and animal species (and their associated critical habitats), which are formally listed, proposed for listing, or candidates for listing as endangered or threatened under FESA. FESA has the following four major components: (1) provisions for listing species, (2) requirements for consultation with the United States (U.S.) Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service), (3) prohibitions against "taking" (i.e., harassing, harming, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct) of listed species, and (4) provisions for permits that allow incidental "take". FESA also discusses recovery plans and the designation of critical habitat for listed species. Both the USFWS and NOAA Fisheries Service share the responsibility for administration of FESA. During the NEPA review process, each agency is given the opportunity to comment on the potential of a proposed project to affect plants and animals listed, proposed for listing, or candidate for listing.

3.2 Clean Water Act

The Clean Water Act (CWA) is the primary federal law regulating water quality. The implementation of the CWA is the responsibility of the U.S. Environmental Protection Agency (EPA). However, the EPA depends on other agencies, such as the individual states and the U.S. Army Corps of Engineers (USACE), to assist in implementing the CWA. The objective of the CWA is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Section 404 and 401 of the CWA apply to activities that would impact waters of the U.S. The USACE enforces Section 404 of the CWA and the California State Water Resources Control Board enforces Section 401.

3.2.1 Section 404

As part of its mandate under Section 404 of the CWA, the EPA regulates the discharge of dredged or fill material into "waters of the U.S.". "Waters of the U.S." include territorial seas, tidal waters, and non-tidal waters in addition to wetlands and drainages that support wetland vegetation, exhibit ponding or scouring, show obvious signs of channeling, or have discernible

banks and high water marks. Wetlands are defined as those areas “that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3(b)). The discharge of dredged or fill material into waters of the U.S. is prohibited under the CWA except when it is in compliance with Section 404 of the CWA. Enforcement authority for Section 404 was given to the USACE, which it accomplishes under its regulatory branch. The EPA has veto authority over the USACE’s administration of the Section 404 program and may override a USACE decision with respect to permitting.

The USACE has specific guidelines for determining the extent of its jurisdiction. The methods of delineating USACE jurisdiction are defined in the 1987 Wetlands Delineation Manual (Environmental Laboratory, 1987), and the Arid West Manual (USACE 2006). The methods of delineating USACE jurisdiction are defined in the manuals and require examination of three parameters (soil, hydrology, and vegetation).

Substantial impacts to waters of the U.S. may require an Individual Permit. Projects that only minimally affect waters of the U.S. may meet the conditions of one of the existing Nationwide Permits, provided that such permits’ other respective conditions are satisfied. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions.

3.2.2 Section 401

Any applicant for a federal permit to impact waters of the U.S. under Section 404 of the CWA, including Nationwide Permits where pre-construction notification is required, must also provide to the USACE a certification or waiver from the State of California. The “401 Certification” is provided by the State Water Resources Control Board through the local Regional Water Quality Control Board (RWQCB).

The RWQCB issues and enforces permits for discharge of treated water, landfills, storm-water runoff, filling of any surface waters or wetlands, dredging, agricultural activities and wastewater recycling. The RWQCB recommends the “401 Certification” application be made at the same time that any applications are provided to other agencies, such as the USACE, USFWS, or NOAA Fisheries. The application to the RWQCB is similar to the pre-construction notification that is required by the USACE. It must include a description of the habitat that is being impacted, a description of how the impact is to be minimized, and proposed mitigation measures with goals, schedules, and performance standards. Mitigation must include a replacement of functions and values, and replacement of wetland at a minimum ratio of 2:1, or twice as many acres of wetlands provided as are removed. The RWQCB looks for mitigation that is on site and in-kind, with functions and values as good as or better than the water-based

habitat that is being removed or impacted. A higher mitigation ratio may be required, depending on site conditions.

3.3 California Fish and Game Code

3.3.1 California Endangered Species Act

The California Endangered Species Act (CESA; Fish and Game Code 2050 et seq.) generally parallels the federal Endangered Species Act. It establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. Section 2080 of the California Fish and Game Code prohibits the take, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or by the regulations. “Take” is defined in Section 86 of the California Fish and Game Code as to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” This definition differs from the definition of “take” under FESA. CESA is administered by California Department of Fish and Wildlife (CDFW). CESA allows for take incidental to otherwise lawful projects, but mandates that State lead agencies consult with the CDFW to ensure that a project would not jeopardize the continued existence of threatened or endangered species.

3.3.2 Non-Game Mammals

Sections 4150-4155 of the California Fish and Game Code protects non-game mammals, including bats. Section 4150 states “A mammal occurring naturally in California that is not a game mammal, fully protected mammal, or fur-bearing mammal is a nongame mammal. A non-game mammal may not be taken or possessed except as provided in this code or in accordance with regulations adopted by the commission”. The non-game mammals that may be taken or possessed are primarily those that cause crop or property damage. All bats are classified as a non-game mammal and are protected under California Fish and Game Code.

3.3.3 California Fish and Game Code Sections 1600-1607

Sections 1600-1607 of the California Fish and Game Code require that a Notification of Lake or Streambed Alteration Agreement (LSAA) application be submitted to CDFW for “any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake.” CDFW reviews the proposed actions in the application and, if necessary, prepares a Lake or Streambed Alteration Agreement that includes measures to protect affected fish and wildlife resources.

3.3.4 Native Plant Protection Act

The Native Plant Protection Act (NPPA) was created in 1977 with the intent to preserve, protect, and enhance rare and endangered plants in California (California Fish and Game Code sections

1900 to 1913). The NPPA is administered by CDFW, which has the authority to designate native plants as endangered or rare and to protect them from "take." CDFW maintains a list of plant species that have been officially classified as endangered, threatened or rare. These special-status plants have special protection under California law.

3.3.5 Fully Protected Species and Species of Special Concern

The classification of California fully protected (CFP) species was the CDFW's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The Fish and Game Code sections (§5515 for fish, §5050 for amphibian and reptiles, §3511 for birds, §4700 for mammals) deal with CFP species and state that these species "…may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species". Take" of these species may be authorized for necessary scientific research. This language makes the CFP designation the strongest and most restrictive regarding the "take" of these species. In 2003, the code sections dealing with CFP species were amended to allow the CDFW to authorize take resulting from recovery activities for state-listed species.

California species of special concern (CSSC) are broadly defined as animals not currently listed under the FESA or CESA, but which are nonetheless of concern to the CDFW because they are declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals by the CDFW, land managers, consulting biologists, and others, and is intended to focus attention on the species to help avert the need for costly listing under FESA and CESA and cumbersome recovery efforts that might ultimately be required. This designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them.

3.4 Sensitive Vegetation Communities

Sensitive vegetation communities are natural communities and habitats that are either unique in constituent components, of relatively limited distribution in the region, or of particularly high wildlife value. These communities may or may not necessarily contain special-status species. Sensitive natural communities are usually identified in local or regional plans, policies or regulations, or by the CDFW (i.e., CNDDB) or the USFWS. The CNDDB identifies several natural communities as rare, which are given the highest inventory priority (Sawyer et. al. 2009; CDFW 2010).

3.5 Porter-Cologne Water Quality Control Act

The intent of the Porter-Cologne Water Quality Control Act is to protect water quality and the beneficial uses of water, and it applies to both surface and ground water. Under this law, the State Water Resources Control Board develops statewide water quality plans, and the Regional Water Quality Control Boards develop basin plans, which identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of both statewide and basin plans. Waters regulated under Porter-Cologne, referred to as "waters of the State," include isolated waters that are not regulated by the USACE. Any person discharging, or proposing to discharge, waste (e.g. dirt) to waters of the State must file a Report of Waste Discharge and receive either waste discharge requirements (WDRs) or a waiver to WDRs before beginning the discharge.

3.6 Pacifica General Plan 1980

The current Pacifica General Plan outlines several policies regarding biological resources.

Conservation Element Policies

1. Conserve trees and encourage native forestation.
2. Require the protection and conservation of indigenous rare and endangered species.
3. Protect significant trees of neighborhood or area importance and encourage planting of appropriate trees and vegetation.
4. Protect and conserve the coastal environment, sand dunes, habitats, unique and endangered species and other natural resources and features which contribute to the coastal character.
5. Local year-round creeks and their riparian habitats shall be protected.
6. Develop policies and ordinances directed to energy conservation.
7. Promote the conservation of all water, soil, wildlife, vegetation, energy, minerals and other natural resources.

3.7 City of Pacifica Strategic Plan

The Pacifica Strategic Plan describes the vision, mission, goals, and objectives for the City. These guiding principles include specific directives pertaining to biological resources. The vision statement states that in five years, Pacifica will be "economically and ecologically vibrant" and is committed to "the stewardship of its exceptional natural attributes." The goal is to preserve and enhance Pacifica's natural resources and open space to ensure an ecologically vibrant community.

3.8 City of Pacifica Heritage Tree Program

Chapter 12 of the Pacifica Municipal Code (Preservation of Heritage Trees) stipulates regulations designed to preserve and protect heritage trees on private or city-owned property. Heritage trees are any trees in the City of Pacifica that have a trunk with a circumference of 50 inches or more (50 inches in circumference is about equivalent to 16 inches in diameter), excluding eucalyptus, measured at 24 inches above the natural grade. It is often necessary to obtain a permit when performing work on or engaging in construction around heritage trees. Additionally, a tree protection plan is required when engaging in new construction within the drip-line of a heritage tree. The plan must be prepared by a qualified arborist, horticulturist, landscape architect or another qualified person.

4 Methods

This section describes the methods used to complete the biological resources evaluation. Methods include a database and literature review, field survey, an assessment of plant communities and wildlife habitats, an assessment of sensitive habitats and aquatic features, and a habitat evaluation for special-status species.

The analysis of potential jurisdictional waters in the project area involved a review of available background information pertaining to aquatic resources on and near the project area and completion of an exploratory wetland delineation in the field.

4.1 Database and Literature Review

MIG reviewed the following sources for information relevant to this biological resources evaluation:

- CDFW California Natural Diversity Database (CNDDB) record search
- CNPS Rare Plant Program *Inventory of Rare and Endangered Plants of California* record search within a 3-mile radius of parcel (CNPS 2016)
- USFWS list of endangered and threatened species and Critical Habitat record search for the parcel (USFWS 2016)
- The Jepson Manual: Vascular Plants of California, Second Edition (Baldwin et al. 2012)
- U.S. Department of Agriculture Natural Resources Conservation Service Web Soil Survey (USDA 2016)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (USFWS 2014)
- Aerial photographs of the BSA (Google Earth Pro 2016)
- Pacifica Equalization Basin Burrow Survey (Coast Ridge Ecology 2016)

- Preliminary Biological Resources Evaluation of the Equalization Basin BSA (EMC Planning Group 2016)

4.2 Field Survey

On October 7, 2016, a burrow survey of the undeveloped areas adjacent to the Skate Park parking lot that will be impacted by the project was conducted by Coast Ridge Ecology (CRE) biologists Patrick Kobernus and Gregory Pfau. All burrows were inspected with an RF Systems Lab VJ-advance articulating video borescope to assess whether special-status species were present.

On October 14, 2016, MIG biologists David Gallagher and Tay Peterson conducted a reconnaissance-level biological survey of the project footprint and adjacent areas that will temporarily be impacted during project construction. The BSA was surveyed on foot and biological resources present within the BSA were documented. Also, attention was paid to topography as it would relate to the potential movement of water within and adjacent to the BSA.

Data points were taken in two locations where temporary impacts will occur to determine if a formal wetland delineation would be required, and if the project would require permits from the USACE and RWQCB, or other resource agencies. Data collected at the points followed the federal methodology (1987 USACE and Arid West manuals). A total of three data points were collected in areas slated for materials storage (Figure 2).

All of the data sheets for the USACE exploratory wetland determination are included in Appendix C. At each data point, the dominant plant species were recorded within a 5-foot by 5-foot or 10-foot by 10-foot quadrat. The indicator status of each species was confirmed with the National Wetland Plant List (USACE 2016). Assessment of the hydrologic criterion on-site was based on primary and secondary indicators. Primary indicators used included observations of inundation, saturation, or surface soil cracks. Secondary indicators included drainage patterns and saturation visible on aerial imagery (Google Earth Pro 2016). Hydric soils were surveyed in accordance with the USACE Manual (1987). Because of site conditions, soil pits at the data points were excavated to a depth of approximately 4-6 inches and soil color was matched against a Munsell soil color chart. Soil samples were moistened with water from a spray bottle prior to measuring the color.

Data were collected using a tablet/Garmin GLO GPS receiver with a geo-spatial mobile-device application for recording data points and photographs; and a mobile-device application using an electronic version of the USACE Arid West data sheet.

4.3 Plant Communities and Wildlife Habitats

Plant communities were classified based on existing descriptions in “A Manual of California Vegetation, Second Edition” (Sawyer et. al. 2009). However, in some cases it is necessary to identify variants of plant community types or to describe non-vegetated areas that are not described in the literature.

4.4 Sensitive Habitats and Aquatic Features

The BSA was inspected for the presence of wetlands, drainages, streams, and other aquatic features, including those that support stream-dependent (i.e., riparian) plant species that could be subject to jurisdiction by the USACE, RWCQB, or CDFW. Wetlands are defined for regulatory purposes in the 33 CFR 328.3 and 40 CFR 230.3 as areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” To be considered subject to federal jurisdiction, a wetland must normally exhibit positive indicators for hydrophytic vegetation, hydric soil, and wetland hydrology.

All plant communities observed on the parcel were evaluated to determine if they are considered sensitive. Sensitive natural communities are communities that are especially diverse; regionally uncommon; or of special concern for local, state, and federal agencies.

4.5 Special-Status Species Habitat Evaluation

During the field survey, the biologists evaluated the suitability of the habitat to support special-status species documented in and within the vicinity of the BSA. For the purposes of this assessment, special-status species include those plant and animals listed, proposed for listing or candidates for listing as threatened or endangered by the USFWS or NOAA Fisheries Service under the FESA, those listed or proposed for listing as rare, threatened or endangered by the CDFW under the CESA, animals designated as CFP or CSSC by the CDFW, and plants assigned a California Rare Plant Rank by the CNPS.

The potential occurrence of special-status plant and animal species within the BSA was evaluated by developing a list of special-status species that are known to or have the potential to occur in the vicinity of the BSA based on a search of the CNDDB, CNPS, and USFWS databases. The potential for occurrence of those species included on the list were then evaluated based on the habitat requirements of each species relative to the conditions observed during the field survey. Each species was evaluated for its potential to occur on or in the immediate vicinity of the BSA according to the following criteria:

No Potential: There is no suitable habitat present (i.e., habitats are clearly unsuitable for the species requirements [e.g., foraging, breeding, cover, substrate, elevation, hydrology, plant community, disturbance regime]). Additionally, there are no recent known records of occurrence in the vicinity of the BSA. The species has no potential of being found in the BSA.

Low Potential: Limited suitable habitat is present (i.e., few of the habitat components meeting the species requirements are present and/or the majority of habitat is unsuitable or of very low quality). Additionally, there are no or few recent known records of occurrence in the vicinity of the BSA. The species has a low probability of being found in the BSA.

Moderate Potential. Suitable habitat is present (i.e., some of the habitat components meeting the species requirements are present and/or the majority of the habitat is suitable or of marginal quality). Additionally, there are few or many recent known records of occurrences in the vicinity of the BSA. The species has a moderate probability of being found in the BSA.

High Potential: Highly suitable habitat is present (i.e., all habitat components meeting the species requirements are present and/or the habitat is highly suitable or of high quality). Additionally, there are few or many records of occurrences within the last ten years and within 3 miles of the BSA. This species has a high probability of being found in the BSA.

Present or Assumed Present. Species was observed in the BSA or has a recent (within five years) recorded observation in the CNDDB or literature within the BSA.

5 Environmental Setting

5.1 Climate and Topography

The climate at the BSA is coastal Mediterranean, with most rain falling in the winter and spring. Mild cool temperatures are common in the winter. The summer is characterized by mild temperatures but fog and cool temperatures are common as well. The average annual rainfall in Pacifica is 22.8 inches (1983 to 1995; worldclimate.com). The BSA is generally level and includes developed, disturbed and natural areas.

5.2 Soils

There are two soil series within the BSA: Urban Land-Elpaloalto complex, 0 to 2% slopes and Candlestick-Barnabe complex. 30-50% slopes (USDA 2016). The Urban Land-Elpaloalto complex consist of disturbed and human transported material and alluvium derived from metamorphic and sedimentary rock. The complex is well-drained. The Candlestick-Barnabe complex is composed of very gravelly and fine sandy loam and is formed from hard fractured

sandstone. It is very shallow and well drained. The Urban Land-Elpaloalto complex is listed as having hydric soils in San Mateo County on the National Hydric Soils List (USDA 2015). The Candlestick-Barnabe complex is not not listed as having hydric soils in San Mateo County

5.3 Hydrology

The BSA is approximately 500-feet from the Pacific Ocean and is isolated from tidal influence. The BSA includes two areas that potentially fall under the jurisdiction of the USACE and RWQCB as jurisdictional wetlands, however a formal delineation has not been completed for these areas. For the purposes of this biological resources evaluation, these areas were assumed to contain features that would qualify them as jurisdictional wetlands. Both of these areas lie at a lower elevation than the BSA; therefore, it is feasible that storm water from the BSA sheet flows into the two potential jurisdictional wetlands during rain events. Both wetlands are separated from the rest of the BSA by a chain link fence.

5.4 Plant Communities and Associated Wildlife Habitats

Vegetative communities are assemblages of plant species that occur together in the same area, which are defined by species composition and relative abundance. The plant communities were classified using A Manual of California Vegetation (Sawyer et. al. 2009). However, in some cases it is necessary to identify variants of plant community types or to describe non-vegetated areas that are not described in the literature. The BSA is composed of disturbed and developed habitat, except for the two potential jurisdictional wetlands, and is bordered by urban land (developed habitat) to the northeast and southwest.

5.4.1 Disturbed Habitat

Disturbed habitat includes land cleared of vegetation (e.g., agricultural land) or lands dominated by non-native plant species. This type of habitat can also include areas that are mowed regularly and, thus, preclude the development of native vegetation communities. The BSA includes unpaved areas that are dominated by non-native plant species.

5.4.2 Developed Habitat

Developed land includes areas where permanent structures and/or pavement have been placed, which prevents the growth of vegetation, or where landscaping is cleared, tended, and maintained. The BSA includes paved parking lots and landscaped areas.

5.4.3 Ornamental Vegetation

Ornamental vegetation includes lands that have been planted with landscaping and are maintained on an ongoing basis. Such landscaping may include native and non-native plantings. However, these plantings have been installed as part of an ornamental landscape plan and do not naturally occur on site. Within the BSA, ornamental vegetation occurs adjacent to the parking lot in the landscaped areas. The dominant tree within the BSA is Monterey cypress (*Cupressus macrocarpa;* planted) and shrubs present include slender firethorn (*Pyracantha angustifolia*), coyote brush (*Baccharis pilularis*), and arroyo willow (*Salix lasiolepis*). Several Monterey cypress trees will be removed from the BSA. A previous survey identified ten Monterey Cypress trees that could be classified as heritage trees by the City of Pacifica. An arborist report to be prepared for the project will identify if any heritage trees will be impacted by the project.

The trees within the BSA provide suitable nesting habitat for birds and possibly cavity-roosting bats.

5.5 Sensitive Habitats, Riparian Habitats, and Critical Habitats

There are no sensitive natural community types, as defined by CDFW or CNPS, present within the areas of the BSA that will be impacted by the project. Areas containing wetland plant species are located in the BSA adjacent to the areas that will be impacted by the project. As stated above, there are two potential jurisdictional wetlands within the BSA, which are identified as freshwater emergent wetlands in the Biological Resources section of the City's Draft EIR for the General Plan Update. However, the Draft EIR states that a site assessment is required to verify actual wetlands (City of Pacifica 2014).

There are no critical habitats within the BSA, as identified by the USFWS (USFWS 2016).

5.6 Migration, Travel Corridors and Habitat Fragmentation

Habitat loss, fragmentation, and degradation resulting from land use changes or habitat conversion can alter the use and viability of wildlife movement corridors (i.e. linear habitats that naturally connect and provide passage between two or more otherwise disjunct larger habitats or habitat fragments). In general, studies suggest that habitat corridors provide connectivity for and are used by wildlife, and as such are an important conservation tool (Beier and Noss 1998). Wildlife habitat corridors should fulfill several functions. They should maintain connectivity for daily movement, travel, mate-seeking, and migration; plant propagation; genetic interchange; population movement in response to environmental change or natural disaster; and recolonization of habitats subject to local extirpation (Beier and Loe 1992)

The suitability of a habitat as a wildlife movement corridor is related to, among other factors, the habitat corridor's dimensions (length and width), topography, vegetation, exposure to human influence, and the species in question (Beier and Loe 1992). Species utilize movement corridors in several ways. "Passage species" are those species that use corridors as thru-ways between outlying habitats. The habitat requirements for passage species are generally less than those for corridor dwellers. Passage species use corridors for brief durations, such as for seasonal migrations or movement within a home range. As such, movement corridors do not necessarily have to meet any of the habitat requirements necessary for a passage species' everyday survival. Large herbivores, such as deer and elk, and medium-to-large carnivores, such as coyotes, bobcats and mountain lions, are typically passage species. "Corridor dwellers" are those species that have limited dispersal capabilities – a category that includes most plants, insects, reptiles, amphibians, small mammals, birds – and that use corridors for a greater length of time. As such, wildlife movement corridors must fulfill key habitat components specific to a species' life history requirements for them to survive (Beier and Loe 1992). In general, however, the suitability and/or utility of the landscape – specifically, of the landscape as corridor habitat – is best evaluated on a species-level (Beier and Noss 1998).

As mentioned above, the BSA includes two undeveloped areas containing wetland plant species within an urban land setting. The developed and the disturbed areas within the BSA, including the site of the EQ basin, likely function as a movement corridor for smaller wildlife species moving between the two undeveloped areas. The BSA is surrounded by major roads and urban development which impede wildlife movement between the BSA and other natural areas in the Linda Mar area.

5.7 Special-Status Species

Based on a review of the CNDDB and CNPS databases, the biologist's knowledge of sensitive species, and an assessment of the types of habitats within the project area, it was determined that the California red-legged frog (CRLF; *Rana draytonii)* has a low potential to occur with developed and disturbed areas of the BSA and the San Francisco garter snake (SFGS; *Thamnophis sirtalis tetrataenia*) has a low potential to occur within developed and disturbed areas the BSA. No special-status plant species are expected to occur within the BSA. This determination was made due to the presence of essential habitat requirements for the species, the presence of known occurrences within three miles of the BSA, and/or the BSA is within the species known range of distribution. A list of special-status species with occurrences within three miles of the BSA which are not expected to occur within the BSA is provided in Appendix D (Tables 1 and 2).

5.7.1 Special-Status Animals

California red-legged frog. The CRLF is listed as a threatened species under the Endangered Species Act and is designated a California Species of Special Concern. CRLF are distributed throughout 26 counties in California, but are most abundant in the San Francisco Bay Area. CRLF predominantly inhabit permanent water sources such as streams, lakes, marshes, natural and man-made ponds, and ephemeral drainages in valley bottoms and foothills up to 1,500 meters in elevation (Jennings and Hayes 1994, Bulger et al. 2003, Stebbins 2003). CRLF breed between November and April in standing or slow moving water at least 0.7 meters (2½ feet) in depth with emergent vegetation, such as cattails (*Typha* spp.), tules (*Schoenoplectus* spp.) or overhanging willows (*Salix* spp.) (Hayes and Jennings 1988). Egg masses containing 2,000 to 5,000 eggs are attached to vegetation below the surface and hatch after 6 to 14 days. Larvae undergo metamorphosis 3½ to 7 months following hatching and reach sexual maturity 2 to 3 years of age (Jennings and Hayes 1994). CRLF breed in a variety of aquatic habitats. Larvae and meta-morphs use streams, deep pools, backwaters of streams and creeks, ponds, marshes, sag ponds, dune ponds, and lagoons.

Breeding adults are commonly found in deep (more than 2 feet), still or slow-moving water with dense, shrubby riparian or emergent vegetation. Adult frogs have also been observed in shallow sections of streams that are not shrouded by riparian vegetation. Generally, streams with high flows and cold temperatures in spring are unsuitable for eggs and tadpoles. Stock ponds are frequently used by this species for breeding if they are managed to provide suitable hydro-period, pond structure, vegetative cover, and control of nonnative predators such as bullfrogs and exotic fish. Most frogs move away from breeding ponds to non-breeding areas. The distance moved is site dependent, though one recent study shows that only a few frogs move farther than the nearest suitable non-breeding habitat. In this Marin County study, the furthest distance traveled was 2.25 miles and most dispersing frogs moved through grazed pastures to reach the nearest riparian habitat (Fellers and Kleeman 2007). Bulger et al. (2003) did not observe habitat preferences among frogs moving between ponds. They did note that when breeding ponds dry, CRLF use moist microhabitats of dense shrubs and herbaceous vegetation within 350 feet of ponds.

The BSA is not located within federally designated critical habitat, but is situated approximately 0.45 miles southwest of the nearest critical habitat unit. Additionally, there are several other occurrences of CRLF near the BSA. The potential jurisdictional wetlands within the BSA provide both suitable non-breeding and breeding aquatic habitat as well as upland and foraging habitat that could be used by the CRLF. The developed and disturbed areas of the BSA could be used as a corridor by CRLF to disperse between the two areas in the BSA identified as containing wetland habitat.

No CRLF were observed during the October 2016 burrow survey by Coast Ridge Ecology. The burrow survey was conducted in portions of the BSA subject to project impacts, and not in the

adjacent undeveloped areas. The burrows are located in a landscaped berm on the east side of the Skate Park parking lot, and in bare ground adjacent to the Skate Park and a children's playground area. The burrows were shallow and did not show signs of recent rodent activity. The survey results suggest that CRLF are unlikely to be present within the burrows (Appendix E Burrow Survey Results); however, the burrow survey did not evaluate the potential presence of CRLF within the adjacent wetland habitat.

The areas that will be impacted by the project do not support habitat for CRLF, based on a field assessment of site conditions, an examination of burrows with a borescope, and the lack of wetlands within the areas that will be directly impacted by the project.

San Francisco garter snake. SFGS is federal and state-listed as endangered and is a fully protected species under §5050 of the California Fish and Game Code. A highly aquatic subspecies of the common garter snake endemic to the San Francisco Bay Area, SFGS are distributed along the western San Francisco Peninsula from the southern San Francisco County border south to Waddell Lagoon south of Año Nuevo and as far east as Crystal Springs Reservoir. It occurs sympatrically with its primary prey species, the CRLF; however, it will opportunistically prey on a variety of species including frogs, tadpoles, egg masses, newts, small fish, salamanders, reptiles, small mammals, birds and their eggs and several small invertebrates (Stebbins 2003).

SFGS prefer dense habitats close to water and will retreat to it when disturbed (Stebbins 2003). The species often occurs near ponds, marshes, streams and other wetlands associated with cattails (*Typha* spp.), bulrushes (*Scirpus* spp.) and rushes (*Juncus* and *Eleocharis* spp.). Mating occurs shortly after they leave their winter retreats in May and females give birth to live young between June and September. Species may hibernate near the coastal areas in fossorial mammal burrows and other refuges, or remain active year-round, weather permitting.

There is no nearby critical habitat designated for this species. The closest known occurrence is at Sharp Point Park, which is approximately 0.4 miles north of the BSA. Although the SFGS is considered unlikely to occur within the BSA because it has not been found in the Linda Mar valley, this analysis assumes that the potential jurisdictional wetlands east and west of the project footprint provide potentially occupied habitat for this species, and that if present, it could move between the two areas.

No SFGS were observed during the October 2016 burrow survey performed by Coast Ridge Ecology. The burrow survey was conducted in portions of the BSA subject to project impacts, and not in the adjacent undeveloped areas. The burrows were shallow and did not show signs of recent rodent activity. The survey results suggest that SFGS are unlikely to be present within the burrows (Appendix E Burrow Survey Results); however, the burrow survey does not preclude the potential presence of SFGS within the BSA.

Based on the habitat requirements of San Francisco garter snake, it is considered to have a low potential to occur within the developed and disturbed areas of the BSA or within the project footprint (including areas of temporary and permanent impacts).

5.8 Wetland Assessment Sample Points

Three exploratory sample points were taken within two areas that had the potential to support wetlands, based on observed hydrology and/or vegetation (Figure 2). Two of the data points (1 and 3) did not meet any of the three parameters and one data point (2) met one of the three parameters (hydrophytic vegetation). The disturbed areas within the BSA do not contain wetlands as defined by the U.S. Army Corps of Engineers using the three parameters of hydrology, hydrophytic vegetation, and hydric soils.

5.8.1 Hydrophytic Vegetation

Plants that can grow in wet soils, which usually contain less oxygen, are considered adapted to those soils and are called hydrophytic. There are different levels of adaptation, as summarized in Table 1. Some plants can only grow in soils saturated with water (and depleted of oxygen), some are mostly found in this condition, and some are found equally in wet soils and in dry soils.

The USACE maintains and regularly updates the National Wetland Plant List that was originally issued by the U.S. Fish and Wildlife Service (USACE 2016). This list categorizes species per their affinity for occurrence in wetlands (Table 1; Lichvar et al. 2012). The hydrophytic vegetation parameter is met at a data point when more than 50 percent of the dominant vegetation comprises hydrophytes.

Table 1. Categories of Wetland Plant Indicators

Indicator Categories	Codes	Comments
Obligate	OBL	Almost always is a hydrophyte, rarely in uplands
Facultative Wetland	FACW	Usually a hydrophyte but occasionally found in uplands
Facultative	FAC	Commonly occurs as either a hydrophyte or non-hydrophyte
Facultative Upland	FACU	Occasionally is a hydrophyte, but usually occurs in uplands
Upland	UPL	Rarely is a hydrophyte, almost always in uplands

Within the disturbed areas of the BSA, the hydrophytic vegetation parameter was met at data point 2. The parameter was not met at data points 1 and 3. This determination is based on an overall dominance of two facultative wetland (FACW) species, *Salix lasiolepis* (arroyo willow) and *Plantago coronopus* (cut leaf plantain).

Facultative wetland plants usually occur in wetlands, but may grow on the fringes of a wetland or in a nearby upland. They can grow in geomorphic settings where water saturates the soils or floods the soils surface at least seasonally but no long enough to create hydric soils or they have deep roots that can tap into a water table, which are often associated with wetlands. The presence of these plants does not necessarily indicate a wetland.

Cut leaf plantain is adapted to grow as a hydrophyte or non-hydrophyte depending on environmental conditions. This plant is well adapted to out-compete other plants, including native and non-native, where soils are highly disturbed and subject to trampling. It is also well adapted to grow in alkaline soils. The soils within the BSA were classified as disturbed and do not exhibit evidence of being hydric (see below). The soils could possibly be alkaline based on a saline water table associated with the proximity to the Pacific Ocean. The occurrence of cut leaf plantain is most likely in response to the highly disturbed, possibly alkaline soils found within the BSA; therefore, it is not a strong wetland indicator in this situation because it is growing in dry, non-hydric soils (see below).

Arroyo willow is generally associated with riparian and wetland areas but does not necessarily indicate a wetland. Many riparian indicator species are classified as FAC or FACW (See Table 1 for definitions). Many of the riparian indicator species can be found in hydric and non-hydric soils. They generally do not require the soil to be inundated, but they generally do require access to a permanent water source, such as a creek, stream or high water table, which they can access with deep roots. The occurrence of arroyo willow is most likely in response to the proximity to a wetland and is tapped into the water table with deep roots; therefore, it is not a strong wetland indicator in this situation because it is growing in dry, non-hydric soils (see below).

5.8.2 Hydric Soils

The Natural Resource Conservation Service defines a hydric soil as one formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper 12 inches of soil (Environmental Laboratory 1987). Hydric soils include soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. In general, evidence of a hydric soil includes characteristics such as organic soils (Histosols), reducing soil conditions, gleyed soils, soils with bright mottles and/or low matrix chroma, soils listed as hydric, and iron and manganese concretions. Reducing soil conditions can also include circumstances where there is evidence of

frequent ponding for long or very long duration. A long duration is defined as a period of inundation for a single event that ranges from 7 days to a month and very long is greater than one month (Environmental Laboratory 1987).

None of the three data points shown on Figure 2 and evaluated during this biological resource evaluation met the hydric soil indicators.

5.8.3 Wetland Hydrology

As defined by the Corps (Environmental Laboratory 1987) wetland hydrology is an area that is inundated either permanently or periodically at mean water depths less than 6.6 feet, or where the soil is saturated at the surface at some time during the growing season of the prevalent vegetation. The period of inundation or soil saturation varies according to the hydrologic/soil moisture regime and occurs in both tidal and non-tidal situations.

Wetland hydrology encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Wetland hydrology indicators provide evidence that the site has a continuing wetland hydrologic regime. Wetland hydrology indicators include visual observation of inundation, visual observation of saturation, water marks, sediment deposits, surface soil cracks, drainage patterns, drift lines, drainage patterns, and oxidized rhizospheres along living roots, in part.

None of the three data points shown on Figure 2 and evaluated during this biological resource evaluation met the wetland hydrology indicators.

5.9 Determination of Jurisdictional Wetlands

Based on an assessment of the waters of the U.S., including wetlands, using the Wetland Delineation Manual (Environmental Laboratory 1987) and the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2006), the areas that will be temporarily or permanently disturbed by the project do not contain any potential jurisdictional wetlands.

Within the disturbed and developed areas of the BSA there are no waters of the State as defined by Section 401 of the Clean Water Act or the Porter Cologne Water Quality Control Act.

The disturbed and developed areas of the BSA do not contain riparian or bed/bank/channel resources, as defined by sections 1600-1603 of California Fish and Game Code.

Additionally, based on the results of our exploratory wetland delineation, an additional wetland delineation is not warranted unless construction work will occur in the potential jurisdictional wetlands within the BSA.

Measures to protect the potential jurisdictional wetlands during construction are recommended below.

6 Biological Impact Assessment

6.1 Significance Criteria

Potential impacts to biological resources were determined in accordance with Appendix G of the CEQA Guidelines. Impacts would be considered potentially significant if the proposed project will:

- 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 CDFW or USFWS
- Have a substantial adverse effect on any sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS
- Have a substantial adverse effect on federally-protected wetlands, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrologic interruption, or other means
- 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
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plant (NCCP), or other approved local, regional, or state HCP

6.2 Sensitive Species – *Less-than-Significant Impact with Avoidance and Mitigation Measures Incorporated*

6.2.1 Special-Status Animals

Both CRLF and SFGS have the potential to occur in disturbed areas within the BSA. Direct impacts to CRLF and SFGS could occur if individuals of these species travel or migrate into work areas and become trapped in trenches or holes, trapped in monofilament netting used in erosion control materials, predated by species attracted to refuse left onsite by the construction crew, or crushed by construction vehicles; or if harassment occurs resulting in altered behavioral patterns that impact survival. Construction vehicles or materials driven or stored in

natural habitat areas outside of the wildlife exclusion fence could also impact these species. In addition, the project could result in indirect impacts to these species if storm water carries pollutants or sediment into the adjacent undeveloped habitats that could support these species.

However, with the implementation of Avoidance and Mitigation Measures (AMMs), the impacts from the project would be less than significant. The AMMs described in Section 7, below, include conducting an environmental awareness training for construction personnel, implementing Best Management Practices (BMPs), a pre-construction survey for CRLF and SFGS, installation of wildlife exclusion fencing around the BSA, biological monitoring during construction, and halting construction activities if these species are found.

6.2.2 Roosting Bats

The trees within the BSA could provide suitable roosting habitat for several bat species protected under California Fish and Game Code. Removal or disturbance of roost habitat may result in significant impacts to bat populations if an occupied or perennial (but unoccupied) maternity or colony roost is disturbed or removed. However, with the implementation of AMMs, the impacts from the project would be less than significant. These AMMs include a pre-construction bat survey, avoiding removal of the roost if feasible, or excluding bats prior to removal of the roost.

6.2.3 Nesting Birds

Nesting birds, including raptors, protected under the MBTA and California Fish and Game Code are potentially present in the trees within the BSA. When construction activities are started during the avian breeding season (February 1 to August 31 for passerines and January 1 to September 15 for raptors), injury to individuals or nest abandonment could occur. In addition, noise and increased construction activity could temporarily disturb nesting or foraging activities, potentially resulting in the abandonment of nest sites. However, with the implementation of AMMs, the impacts from the project would be less than significant. These AMMs include a pre-construction nesting bird survey and consultation with CDFW if an active nest is discovered. Discovery of an active nest can result in a delay in construction until nesting is complete.

The project will require the removal of trees that provide nesting habitat for birds. It is recommended that the trees be replaced with native tree species at a minimum 1:1 ratio. The trees can be planted on site or in the general Linda Mar area.

6.2.4 Special-Status Plants

Because of the lack of suitable habitat, special-status plants are not expected within the developed and disturbed areas of the BSA. Therefore, there would be no impacts to special-status plants. No further botanical surveys are recommended at this time.

6.3 Sensitive Natural Vegetation Communities, Including Wetlands – *Less-than-Significant Impact with Avoidance and Mitigation Measures Incorporated*

Sensitive vegetation communities include riparian habitat or other sensitive natural communities identified in local or regional plans, policies, or regulations, or designated by the USFWS and CDFW. The BSA includes two undeveloped areas that contain vegetation typical of wetlands.al wetlands. Willows (wetland vegetation) extend onto a berm along the east side of the Skate Park parking lot. However, no work would occur within the undeveloped areas or on the berm containing willows during project construction. Additionally, it is recommended that a wildlife exclusion/environmental fence be placed between active construction areas and the undeveloped areas containing wetland vegetation to protect these areas from the direct impacts of construction. Therefore, impacts to wetland vegetation would be less than significant.

No other sensitive natural communities are present in the BSA and the project would not directly impact sensitive natural communities.

The proposed project could have indirect impacts on wetland vegetation in the adjacent undeveloped areas if storm water carries pollutants or sediment into these areas. However, a Stormwater Pollution Prevention Plan (SWPPP) is required for the project which will evaluate the appropriate BMPs, to use to protect water quality during construction and operation. Several possible BMPs are listed as AMMs in Section 7, below. With the implementation of a SWPPP and BMPs, these measures project impacts would be less than significant.

6.4 Interfere with Native Wildlife Movement – *Less-than-Significant Impact with Avoidance and Mitigation Measures Incorporated*

Project activities could result in temporary barriers to wildlife movement between the two undeveloped areas of the BSA, but is not likely to result in permanent barriers or restriction since the area will be restored to its pre-construction condition. With the implementation of AMMs, the temporary impacts from the project on wildlife movement would be less than significant. These AMMs, described in Section 7, below, include conducting an environmental awareness training for construction personnel, implementing BMPs that protect wildlife, properly installing wildlife exclusion/environmental fencing with escape routes such as exit funnels, and biological monitoring during construction.

6.5 Conflict with Local Policies – *Less-than-Significant Impact with Avoidance and Mitigation Measures Incorporated*

The BSA contains several Monterey cypress trees that were planted in the landscaping for the Community Center. It is recommended that a tree survey be conducted by a qualified arborist prior to construction to assess the condition of the trees to be impacted by the project and determine if they are classified as heritage trees by the City of Pacifica. If any heritage trees need to be removed or construction takes place within the drip line of any heritage tree, approval must be obtained from the City of Pacifica Planning Commission. Compliance with this policy would mean the project would not conflict with local policies.

6.6 Conflict with Conservation Plan – *No Impact*

The BSA is not within an area covered by an HCP or NCCP. As a result, the project will have no impact related to a conservation plan.

7 Conclusions and Recommendations

This section provides recommended AMMs that should be incorporated prior to, during, and after construction of the project to avoid and minimize impacts to sensitive habitats (including jurisdictional wetlands) and special-status species.

7.1 Sensitive Habitats and Jurisdictional Features

The proposed project includes the construction of a wet weather EQ basin under an existing parking lot. The following general AMMs are recommended as part of the proposed project and should be included on the project plans to minimize impacts to sensitive habitats:

1. Travel and parking of vehicles and equipment will be limited to pavement, existing roads, and previously disturbed areas. Ground disturbance and vegetation removal may not exceed the minimum amount necessary to complete work at the site.

2. Work areas that are temporarily impacted will be restored with respect to pre-existing contours and conditions upon completion of work. Restoration work including re-vegetation and soil stabilization will be evaluated upon completion of work and performed as needed.

In addition, a SWPPP is required for the project. The potential for adverse effects to water quality and biological resources will be avoided by implementing BMPs evaluated in the preparation of the SWPPP. The BMPS will minimize erosion or other sources of water pollution. Examples of the BMPs that may be included are listed below; however, the appropriate BMPS to use will be evaluated during the SWPPP process and will be included in the final SWPPP and project plan specifications. Example BMPs include:

a) Store, handle, and dispose of construction materials and wastes properly, so as to prevent their contact with stormwater.

b) Control and prevent the discharge of all potential pollutants, including solid wastes, paints, concrete, petroleum products, chemicals, wash water or sediment and non-stormwater discharges to storm drains and water courses.

c) Avoid cleaning, fueling, or maintaining vehicles on site, except in a designated area in which run-off is contained and treated.

d) Perform clearing and earth moving activities during dry weather to the maximum extent practical.

e) Delineate clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees, and discharge course with field markers.

f) Remove spoils promptly and avoid stockpiling of fill materials when rain is forecast. Cover soil stockpiles and other materials with a tarp or other waterproof material during qualifying rain events.

g) Limit construction access routes and stabilize designated access points.

h) Trash and construction related solid wastes must be deposited into a covered receptacle to prevent contamination and dispersal by wind.

i) Sanitary facilities will be maintained on the BSA at all times.

j) Measures shall be taken to collect or clean any accumulation or deposit of dirt, mud, sand, rocks, gravel, or debris on the surface of any street, alley, or public place or in public storm drain systems. The removal of aforesaid shall be done by street sweeping or hand sweeping. Water shall not be used to wash sediments into public or private drainage facilities.

k) In the event of rain, all grading work is to cease immediately.

l) Implement an erosion control plan during the wet season (October 15 through April 15), including the following:

    - During the rainy season, all paved areas shall be kept clear of earth material and debris. The construction areas within the BSA shall be maintained to minimize sediment-laden run-off to any storm drainage system, including existing drainage swales and water courses.
    - Down slope drainage courses, streams, and storm drains will be protected with rock filled sand bags, temporary swales, silt fences, and earth berms in conjunction of all landscaping.
    - Inlet protection shall be installed at open inlets to prevent sediment from entering the storm drain system.
    - Straw rolls shall be placed at the toe of slopes, and along the down slope perimeter of the BSA.

m) Implement a hazardous spill plan developed prior to construction. The plan will describe what actions will be taken in the event of a spill. The plan will also incorporate preventative measures to be implemented, such as vehicle and equipment staging, cleaning, maintenance, and refueling; and contaminant (including fuel) management and storage. In the event of a contaminant spill, work at the site will immediately cease until the contractor has contained, and mitigated the spill. The

contractor will immediately prevent further contamination and notify appropriate authorities, and mitigate damage as appropriate. Adequate spill containment materials, such as oil diapers and hydrocarbon cleanup kits, shall be available on site at all times. Containers for storage, transportation, and disposal of contaminated absorbent materials will be provided in the project area.

7.2 Special-Status Species

CRLF and SFGS have the potential to occur within the BSA. In addition, birds protected by the MBTA and California Fish and Game Code could nest in trees within the BSA and wetland vegetation adjacent to the BSA, and bats protected by California Fish and Game Code could roost in the trees within the BSA. Therefore, measures to protect special-status species, bats, and nesting birds during construction will be necessary. The following AMMs are recommended to avoid harming special-status species, bats, and nesting birds during construction:

1. A qualified biologist shall assist with the placement of wildlife exclusion fencing, and verify that stormwater protection measures to protect adjacent undeveloped areas are in place.

2. A qualified biologist shall conduct an employee education program, consisting of a brief presentation to explain biological resources concerns to contractors, their employees, and any other personnel involved in construction of the project. The program will include the following: a description of relevant special-status species, nesting birds, and bats along with their habitat needs as they pertain to the BSA; a report of the occurrence of these species in the project vicinity, as applicable; an explanation of the status of these species and their protection under the federal and state regulations; a list of measures being taken to reduce potential impacts to natural resources during project construction and implementation; instructions if a special-status species is found onsite, and a summary of the consequences of violating state and federal law related to these species. A fact sheet conveying this information will be prepared for distribution to the above-mentioned people and anyone else who may enter the BSA. Upon completion of training, employees will sign a form stating that they attended the training and agree to all the conservation and protection measures.

3. A qualified biologist shall conduct a pre-construction survey within the project area for the presence of CRLF and SFGS. The survey will be conducted immediately prior to the initial onset of project activities. If any of these, or other special-status, species are found, work will not commence until the appropriate state and/or federal resource agencies are contacted and avoidance and mitigation measures are in place.

4. Within the disturbed areas of the BSA, all burrows that can be potentially occupied by CRLF and SFGS shall be hand excavated by a qualified biologist who holds current permits to handle these species, prior to the start of construction activities. If CRLF or SFGS are found, the USFWS and CDFW will be consulted to determine an appropriate course of action. Actions could include the relocation of the animal to nearby habitat, and compensatory mitigation for removal of occupied habitat.

5. A wildlife exclusion/environmental fence (with escape routes, such as exit funnels) will be erected around active construction areas to prevent the movement of animals into active construction areas. During construction, the fence shall be checked every day for damage or breaks and trapped wildlife before construction activities commence. Any damage to the fence shall be repaired in a timely manner.

6. A qualified biologist will inspect the area inside of the fence for CRLF and SFGS every day before construction activities commence. If any special-status species are found, construction activities will not be allowed to start and the USFWS and CDFW will be consulted on an appropriate course of action. Such action could include leaving the animal alone to move away on its own or the relocation of the animal to an area outside of the BSA.

7. When construction and construction-related activities (including but not limited to mobilization and staging, clearing, grubbing, vegetation removal, fence installation, demolition, and grading noise occurs within the avian nesting season (from February 1 to August 31 for passerines and January 1 to September 15 for raptors), all suitable habitats located within the project's area of disturbance including staging and storage areas plus a 250-foot (passerines) and 1,000-foot (raptor nests) buffer around these areas shall be thoroughly surveyed, as feasible, for the presence of active nests by a qualified biologist no more than five days before commencement of any site disturbance activities and equipment mobilization. If project activities are delayed by more than five days, an additional nesting bird survey shall be performed. Active nesting is present if a bird is building a nest, sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys shall be documented.

   If pre-construction nesting bird surveys result in the location of active nests, no site disturbance and mobilization of heavy equipment (including but not limited to equipment staging, fence installation, clearing, grubbing, vegetation removal, fence installation, demolition, and grading), shall take place within 250 feet of non-raptor nests and 1,000 feet of raptor nests, or as determined by a qualified biologist in consultation with the CDFW, until the chicks have fledged. Monitoring shall be required to insure compliance with MBTA and relevant California Fish and Game Code requirements. Monitoring dates and findings shall be documented.

The project will require the removal of trees that provide nesting habitat for birds. It is recommended that the trees be replaced with native tree species at a minimum 1:1 ratio. The trees can be planted onsite or in the general Linda Mar area.

8. A preconstruction survey of trees within the developed and disturbed areas of the BSA will be conducted by a qualified biologist for colony bat roosts within 14 days prior to the onset of project activity, and the survey shall be documented. If an occupied maternity or colony roost is detected, CDFW shall be consulted to determine appropriate measures, such as bat exclusion methods, if the roost cannot be avoided.

9. Food items may attract wildlife onto the construction site, which will expose them to construction-related hazards. The construction site shall be maintained in a clean condition. All trash (e.g., food scraps, cans, bottles, containers, wrappers, cigarette butts, and other discarded items) will be placed in closed containers and properly disposed of.

10. If an animal is found at the work site and is believed to be a protected species, work must be halted and the project biologist be contacted for guidance. Care must be taken not to harm or harass the species. No wildlife species will be handled and/or removed from the project area by anyone except qualified biologists.

11. The contractor shall avoid the use of monofilament netting, including its use in temporary and permanent erosion control materials. All holes greater than one-foot deep must be sealed overnight to prevent the entrapment of wildlife. Where holes or trenches cannot be sealed, escape ramps that are no greater than 30% slope will be positioned such that entrapped wildlife will be able to escape. The escape ramps should be at least one-foot wide and covered/fitted with a material that provides traction.

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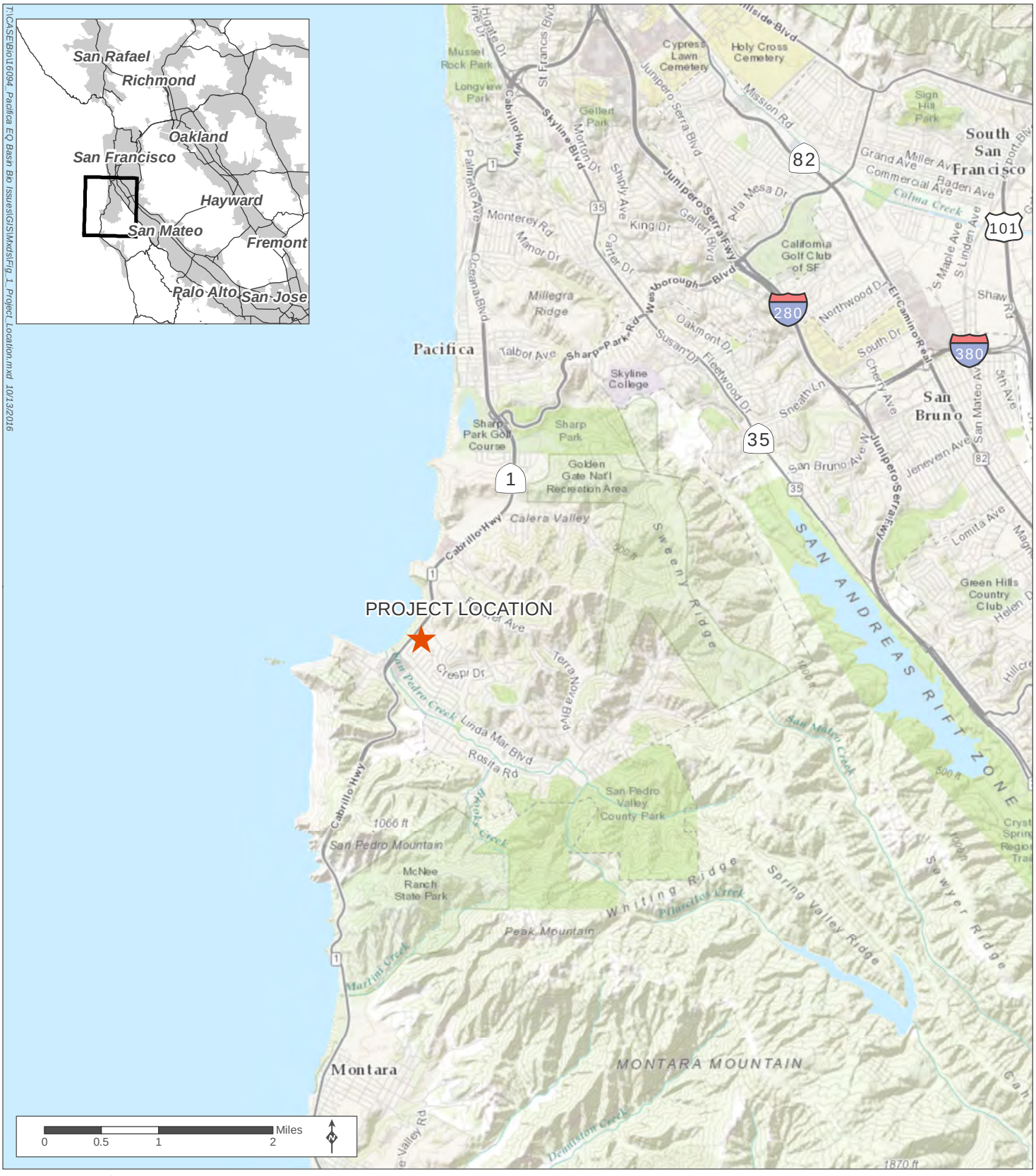
Appendix A Report Figures



Source: ESRI, 2016; MIG|TRA, 2016

Project location

Major Road

County Boundary

Figure 1 Project Location

Pacifica Wet Weather Equalization Basin Project

Source: ESRI, 2016; City of Pacifica, 2016; MIG|TRA, 2016

- Equalization Basin
- Biological Study Area
- Temporary Impacts
- Haul Route
- Data Point
- Potential Jurisdictional Wetland Subject to Verification by Others

Figure 2 Biological Study Area

Pacifica Wet Weather Equalization Basin Project

Figure 3 Project Overview

Appendix B Site Photos

Photo 1. Looking north within the BSA. The paved parking lot is clearly visible. The planted Monterey cypress trees are in the background. Several of the trees will be removed for the project. The vegetation in the right of the photo is arroyo willow and a potential jurisdictional wetland is just east of this vegetation (not visible). The EQ basin will be built under the parking lot. No construction work will take place within the potential jurisdictional wetlands within the BSA.

Photo 2. Looking south to the residential area bordering the BSA. The vegetation in the right of the photo is arroyo willow and a potential jurisdictional wetland is west of this vegetation (not visible). This is an example of disturbed habitat that will be temporally impacted by the project. However, the willows will be protected from construction activities by an environmental fence. No work will take place within the potential jurisdictional wetlands within the BSA.

Appendix C Wetland Delineation Field Data Sheets and Photos

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pacifcia EQ Basin **City/County:** Pacifica **Sampling Date:** 14-Oct-16

Applicant/Owner: City of Pacifica **State:** California **Sampling Point:** 1

Investigator(s): DWG, TP **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR): LRR C **Lat.:** 37 35 54.86 **Long.:** -122 29 56.37 **Datum:** WGS 84

Soil Map Unit Name: Urban Land-Elpaloalto complex, 0-2 percent slopes **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present? Yes ○ No ◉	
Wetland Hydrology Present? Yes ○ No ◉	

Remarks: Area subject to routine landscaping.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5 x 5)			
1. Cupressus macrocarpa	20	☑ 100.0%	UPL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	20	= Total Cover	
Herb Stratum (Plot size: 5 x 5)			
1. Cupressus macrocarpa	20	☐ 36.4%	UPL
2. Erigeron canadensis	15	☑ 27.3%	FACU
3. Pseudognaphalium luteoalbum	15	☑ 27.3%	FAC
4. Atriplex prostrata	5	☐ 9.1%	FACW
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	55	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 15 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	15	x 3 =	45
FACU species	15	x 4 =	60
UPL species	40	x 5 =	200
Column Totals:	75 (A)		315 (B)

Prevalence Index = B/A = 4.200

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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Soil

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					Sandy Loam	di st ur bed

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

possibly alkaline soil

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): 0

Water Table Present? Yes ○ No ◉ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): 0

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

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Plot ID: 1 Photo Path: \\casj-pintails.migcom.com\TRA_Server\Data\CASE\Bio\16094_Pa

Photo File: TP_1.jpg Orientation: -facing

Lat/Long or UTM: Long/Easting: -122 29 56.37 Lat/Northing: 37 35 54.86

Description:

No Photo

Photo File: None.bmp Orientation: -facing

Lat/Long or UTM: Long/Easting: Lat/Northing:

Description:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pacifcia EQ Basin **City/County:** Pacifica **Sampling Date:** 14-Oct-16

Applicant/Owner: City of Pacifica **State:** California **Sampling Point:** 2

Investigator(s): DWG, TP **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Undulating **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR): LRR C **Lat.:** 37 35 52.12 **Long.:** -122 30 2.30 **Datum:** WGS 84

Soil Map Unit Name: Candlestick-Barnabe complex, 30 to 50 percent slopes **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (•) No ( ) **(If no, explain in Remarks.)**

Are Vegetation [ ] **, Soil** [ ] **, or Hydrology** [ ] **significantly disturbed?** **Are "Normal Circumstances" present?** Yes (•) No ( )

Are Vegetation [✓] **, Soil** [ ] **, or Hydrology** [ ] **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes (•) No ( )	**Is the Sampled Area within a Wetland?** Yes ( ) No (•)
Hydric Soil Present? Yes ( ) No (•)	
Wetland Hydrology Present? Yes ( ) No (•)	

Remarks: Possibly alkaline soils. Seasonal variation in vegetation.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10 x 10)			
1. Salix lasiolepis	10	[✓] 100.0%	FACW
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	10	= Total Cover	
Herb Stratum (Plot size: 10 x 10)			
1. Plantago coronopus	10	[ ] 100.0%	FACW
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
6.	0	[ ] 0.0%	
7.	0	[ ] 0.0%	
8.	0	[ ] 0.0%	
9.	0	[ ] 0.0%	
10.	0	[ ] 0.0%	
11.	0	[ ] 0.0%	
	10	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 25 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	20 (A)		40 (B)

Prevalence Index = B/A = 2.000

Hydrophytic Vegetation Indicators:

- [✓] **Dominance Test is > 50%**
- [✓] **Prevalence Index is ≤3.0** [1]
- [ ] **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- [ ] **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes (•) No ( )

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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Soil

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/4	100					Sandy Loam	aggregate substrate. disturbed.

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

possibly alkaline soil.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): 0

Water Table Present? Yes ○ No ◉ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): 0

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

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Plot ID: 2 Photo Path: \\casj-pintails.migcom.com\TRA_Server\Data\CASE\Bio\16094_Pa

Photo File: TP_2.jpg Orientation: -facing
Lat/Long or UTM: Long/Easting: -122 30 2.30 Lat/Northing: 37 35 52.12
Description:

No Photo

Photo File: None.bmp Orientation: -facing
Lat/Long or UTM: Long/Easting: Lat/Northing:
Description:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Pacifcia EQ Basin **City/County:** Pacifica **Sampling Date:** 14-Oct-16

Applicant/Owner: City of Pacifica **State:** California **Sampling Point:** 3

Investigator(s): DWG, TP **Section, Township, Range:** S T R

Landform (hillslope, terrace, etc.): Undulating **Local relief (concave, convex, none):** convex **Slope:** 0.0 % / 0.0 °

Subregion (LRR): LRR C **Lat.:** 37 35 52 **Long.:** -122 30 2 **Datum:** WGS 84

Soil Map Unit Name: Candlestick-Barnabe complex, 30 to 50 percent slopes **NWI classification:**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ **(If no, explain in Remarks.)**

Are Vegetation ☐ **, Soil** ☐ **, or Hydrology** ☐ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes ◉ No ○

Are Vegetation ☑ **, Soil** ☐ **, or Hydrology** ☐ **naturally problematic?** **(If needed, explain any answers in Remarks.)**

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present? Yes ○ No ◉	
Wetland Hydrology Present? Yes ○ No ◉	

Remarks: Possibly alkaline soils. Seasonal variation in vegetation.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5 x 5)			
1. Baccharis pilularis	10	☑ 50.0%	UPL
2. Pyracantha angustifolia	10	☑ 50.0%	UPL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	20	= Total Cover	
Herb Stratum (Plot size: 5 x 5)			
1. Plantago coronopus	10	☑ 90.9%	FACW
2. Hirshfeldia incana	1	☐ 9.1%	UPL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
11.	0	☐ 0.0%	
	11	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

% Bare Ground in Herb Stratum: 10 **% Cover of Biotic Crust** 0

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	21	x 5 =	105
Column Totals:	31 (A)		125 (B)

Prevalence Index = B/A = 4.032

Hydrophytic Vegetation Indicators:

- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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Soil

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/3	100						aggregate substrate. disturbed soils.

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains [2]Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR C)
- ☐ 1 cm Muck (A9) (LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[3]

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ 2 cm Muck (A10) (LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☑ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

Possibly alkaline soils.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (Nonriverine)
- ☐ Sediment Deposits (B2) (Nonriverine)
- ☐ Drift deposits (B3) (Noneriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
- ☐ Sediment Deposits (B2) (Riverine)
- ☐ Drift Deposits (B3) Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	0
Water Table Present?	Yes ○ No ◉	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

US Army Corps of Engineers — Arid West - Version 2.0

Plot ID: 3 Photo Path: \\casj-pintails.migcom.com\TRA_Server\Data\CASE\Bio\16094_Pa

Photo File: TP_3.jpg Orientation: -facing

Lat/Long or UTM: Long/Easting: -122 30 2 Lat/Northing: 37 35 52

Description:

No Photo

Photo File: None.bmp Orientation: -facing

Lat/Long or UTM: Long/Easting: Lat/Northing:

Description:

Appendix D Special-Status Plant and Animal Species Evaluated for Potential to Occur within the BSA

Table 1. Special-Status Plant Species Evaluated for Potential to Occur within the Study Area

Species Name	Federal, State, and CNPS Listing Status[1]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology	Potential to Occur
Allium peninsulare var. *franciscanum* (Franciscan onion)	1B.2	Perennial herb. Occurs on clay in cismontane woodland and valley and foothill grassland often on Serpentine, clay, and volcanic soils.	May – June	There is no suitable habitat for this species within the BSA. Lack of bedrock geology. Known from the Jasper Ridge Biological Preserve. **Not Expected**
Arctostaphylos montarensis (Montara manzanita)	1B.2	Evergreen shrub. Occurs in maritime chaparral and coastal scrub.	January – March	There is no suitable habitat for this species within the BSA. Vegetative material would have been detectable during the site visit. None detected. Known from higher elevations within the Golden Gate National Recreation Area **Not Expected**
Arctostaphylos regismontana (Kings Mountain manzanita)	1B.2	Evergreen shrub. Occurs on granite or sandstone in broadleaved upland forest, chaparral, and North Coast coniferous forest.	January – April	There is no suitable habitat for this species within the BSA. Vegetative material would have been detectable during the site visit. None detected. Known from higher elevations within the Golden Gate National Recreation Area. **Not Expected**
Centromadia parryi ssp. parryi (Pappose tarplant)	1B.2	Annual herb. Occurs in chaparral, coastal prairie, meadows and seeps, marshes and swamps, or valley and foothill grassland.	May – November	There is no suitable habitat for this species within the BSA. Known from Mori point within the Golden Gate National Recreation Area. **Not Expected**
Chorizanthe cuspidate var. cuspidate (San Francisco Bay spineflower)	1B.2	Annual herb. Occurs in coastal bluff scrub, coastal bluff dune, coastal prairie, and coastal scrub on sandy soils.	April – August	There is no suitable habitat for this species within the BSA. Lack of preferred substrate. Known from locations along the San Mateo coast. **Not Expected**

Species Name	Federal, State, and CNPS Listing Status[1]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology	Potential to Occur
Cirsium adrewsii (Franciscan thistle)	FE, SE, 1B.2	Perennial herb. Occurs in broadleaved upland forest, coastal bluff scrub, coastal prairie or coastal scrub on mesic, and sometimes on serpentitite sites.	March – July	There is no suitable habitat within the BSA. No wetlands within the BSA. Known from sites within San Francisco. **Not Expected**
Collinsia multicolor (San Francisco collinsia)	1B.2	Annual herb. Occasionally occurs on serpentine in closed cone coniferous forest and coastal scrub.	March – May	There is no suitable habitat for this species within the BSA. There is no serpentinite bedrock geology. Last known occurrence near BSA is from 1893. **Not Expected**
Dirca occidentalis (western leatherwood)	1B.2	Deciduous shrub. Occurs on mesic sites in broadleaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, North Coast coniferous forest, riparian scrub, and riparian woodland.	January – April	There is no suitable habitat for this species within the BSA. Vegetative material would have been detectable during the site visit. None detected. Known from San Pedro Valley County Park area. **Not Expected**
Grindelia hirsutula var. *maritima* (San Francisco gumplant)	1B.2	Perennial herb. Occurs on serpentine or sandy substrates in coastal bluff scrub, coastal scrub, and valley and foothill grassland.	August – September	No suitable habitat is present within the BSA. No sandy or serpentine substrates. Known from Mc Nee State Park area. **Not Expected**
Lasthenia californica ssp. *macrantha* (perennial goldfields)	1B.2	Perennial herb. Occurs in coastal dunes, coastal bluff scrub, and coastal scrub.	January – November	No suitable habitat is present within the BSA. The study area lacks preferred sandy substrate. Known from Montara State Beach area. **Not Expected**
Leptosiphon croceus (coast yellow leptosiphon)	1B.1	Annual herb. Occurs in coastal bluff scrub and coastal prairie.	May	No suitable habitat is present within the BSA. Known from a nearby coastal site in San Mateo County. **Not Expected**

Species Name	Federal, State, and CNPS Listing Status[1]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology	Potential to Occur
Malacothamnus arcuatus (arcuate bush mallow)	1B.2	Evergreen shrub. Occurs in chaparral.	April – September	There is no suitable habitat for this species within the BSA. Vegetative material would have been detectable during the site visit. None detected. Last known occurrence is from 1902 at higher elevations within the Golden Gate National Recreation Area. **Not Expected**
Plagiobothrys chorisianus var. chorisianu	1B.2	Annual herb. Occurs in chaparral, coastal prairie, and coastal scrub on mesic sites or in wetlands.	March – June	There is no suitable habitat for this species within the BSA. There are no wetlands within the BSA. Known from several locations along the San Mateo coast. **Not Expected**
Triquetrella californica	1B.2	Moss. Occurs in coastal bluff scrub or coastal scrub.	N/A	There is no suitable habitat for this species within the BSA. Known from fewer than ten small coastal occurrences in California. **Not Expected**

STATUS KEY:

Federal

FE: Federally-listed Endangered

FT: Federally-listed Threatened

State

CE: California-listed Endangered

CT: California-listed Threatened

CR: California-listed Rare

California Native Plant Society (CNPS)**:**

Rank 1A – Presumed extinct in California

Rank 1B – Rare, threatened, or endangered in California and elsewhere

Rank 2A – Plants presumed extirpated in California, but more common elsewhere; Rank 2B: Rare, threatened, or endangered in California, but more Common elsewhere

Rank 3 – Plants for which more information is needed – A review list

Rank 4 – Plants of limited distribution – A watch list

Additional threat ranks endangerment codes are assigned to each taxon or group as follows:

.1 – Seriously endangered in California (over 80% of occurrences threatened/high degree of immediacy of threat)

.2 – Fairly endangered in California (20-80% occurrences threatened)

.3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)

Table 2. Special-Status Animal Species Evaluated for Potential to Occur within the BSA.

Species Name	Federal, State, and CNPS Listing Status[1]	Habitat Preferences, Distribution Information, and Additional Notes	Potential to Occur
Amphibians			
Rana draytonii (California red-legged frog)	FT, CSSC	California red-legged frog (CRLF) occurs in different habitats depending on life stage, season, and weather conditions. CRLF typically use a variety of aquatic habitats (e.g., ephemeral ponds, intermittent streams, seasonal wetlands, springs, seeps, perennial creeks, artificial ponds, marshes, dune ponds, and lagoons), as well as riparian and upland habitats. The common factor among habitats where CRLF occur is the association with a permanent water source with deep pools, ideally free of non-native predators.	Suitable habitat wetlands for this species exist adjacent to the BSA. There are several occurrences near the BSA, including USFWS designated critical habitat approximately 0.45-mile southwest of the study area. **Low Potential**
Reptiles			
Thamnophlis sirtalis tetrataenia (San Francisco garter snake)	FE, SE, CFP	San Francisco garter snake is a highly aquatic species that is found in or near densely vegetated freshwater ponds with adjacent open hillsides where they can bask, feed, and find cover in rodent burrows. Almost always sympatrically with its primary prey, California red-legged frog.	Suitable wetlands for this species exist adjacent to the BSA. However, the closest occurrence is from Denniston Creek, south of the study area. **Low Potential**
Birds			
Geothylpis trichas sinuosa (saltmarsh common yellowthroat)	CSSC	Saltmarsh common yellowthroat nests and forages in fresh and saltwater marshes and seasonal wetlands. It breeds on the ground or up to 8 centimeters off the ground under the cover of dense shrubs and emergent aquatic vegetation.	There is no suitable nesting habitat present within the BSA. This species may forage or nest in the adjacent wetlands. This species is known from the Pillar Point Bluff area. **Not Expected**

Species Name	Federal, State, and CNPS Listing Status[1]	Habitat Preferences, Distribution Information, and Additional Notes	Potential to Occur
Charadrius alexandrinus nivosus (western snowy plover)	FT, CSSC	Western snowy plover nests on sand pits, dune-backed beaches, beaches at creek and river mouths. They forage for invertebrates in wet sand, surf-cast kelp in the intertidal zone, salt ponds, salt marshes, and lagoons. They can be found along the coastlines of California, Oregon, and Washington.	There is no suitable nesting habitat present within the BSA. This species may forage in the adjacent wetlands. They are known to use Pacifica State Beach as a wintering ground, but do not use the beach area for breeding. **Not Expected**
Mammals			
Nyctinomops macrotis (big free-tailed bat)	CSSC	Rare in California. Found in low-lying areas of southern California and vagrant elsewhere. Species needs high cliffs or rocky outcrops for roosting and feeds principally on large moths.	There is no suitable nesting habitat present within the BSA. Last occurrence was from 1984 within one-mile of the BSA. **Not Expected**
Taxidea taxus (American badger)	CSSC	American badger is rare in western San Francisco Bay area. It occurs in grasslands and open stages of forest and scrub habitats with friable soils and good prey base of burrowing rodents.	There is no suitable habitat for this species within the BSA. The last known occurrence was in 1948 near McNee Beach State Park. **Not Expected**

Notes: FE – Federal Endangered; FT – Federal Threatened; FC – Federal Candidate; CE – State Endangered; CT – State Threatened; CPT – State Proposed Threatened; CPE – State Proposed Endangered; CFP – California Fully Protected; CSSC – California Species of Special Concern

Appendix E Burrow Survey Results

COAST RIDGE ECOLOGY LLC
BIOLOGICAL SURVEYS • MONITORING • PERMITTING • RESEARCH

October 13, 2016

Gene Barry
Vice President/Principal Engineer
4LEAF, Inc.
2110 Rheem Drive, Suite A
Pleasanton, CA 94588

Subject: Results of Pre-construction Burrow Survey at the Pacifica Community Center, Pacifica, CA

Dear Mr. Barry,

This letter documents the results of the pre-construction burrow survey at the Pacifica Community Center. The survey was performed to assess whether burrows present at the site were inhabited by California red-legged frog (*Rana draytonii*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*) or other special-status species. The burrow survey was conducted in four areas located in the vicinity of the City's Skate Park, Community Center, and parking lot area (see Figure 1).

Survey Methods

A burrow survey was conducted by CRE biologists Patrick Kobernus and Gregory Pfau on October 7, 2016. Patrick Kobernus has a Scientific Collecting Permit with the California Department of Fish and Game, and 10(a)(1)(A) Recovery Permits for the California red-legged frog, California tiger salamander, and San Francisco garter snake with the US Fish and Wildlife Service. All burrows within the four areas shown in Figure 1 were inspected with an RF Systems Lab VJ-advance articulating video borescope to assess whether special-status species were present within.

Survey Results

No special-status species were located within the burrows surveyed. Most burrows were old and did not show signs of rodent activity, and many were very shallow. Several insects were observed, but no reptiles or amphibians were located in the burrows within the project area.

Conclusions

The survey results suggest that California red-legged frog and San Francisco garter snake are unlikely to be present within the burrows in the project area. However, we recommend that all burrows be excavated under the supervision of a qualified biologist prior to any ground disturbance.

Sincerely,

Patrick Kobernus
Biologist/Owner

Gregory Pfau
Associate Biologist

1410 31ST AVENUE – SAN FRANCISCO CA 94122 – PH: 415-404-6757 – CELL: 650-269-3894
EMAIL: CRECOLOGY@GMAIL.COM – WWW.CRECOLOGY.COM

Figure 1. Locations for Four Areas Evaluated During Burrow Scope Survey.

APPENDIX D
TRAFFIC DATA (FEHR & PEERS)

FEHR PEERS

MEMORANDUM

Date: November 17, 2016

To: Bonny O'Connor, City of Pacifica

From: Ingrid Ballus Armet and Bob Grandy, Fehr & Peers

Subject: Traffic Analysis for the Construction of the Equalization Basin at 540 Crespi Drive in Pacifica, California

SF16-0902

This memorandum describes an assessment of potential transportation impacts that might result from construction of the equalization ("EQ") basin located at 540 Crespi Drive ("Project"). Because the construction project is short-term in duration and is forecast to generate relatively few vehicle trips, the traffic assessment focuses on evaluation of Existing plus Project conditions.

This memorandum summarizes existing traffic operations as well as the existing transit, pedestrian, and bicycle conditions in the Project area, details the project travel demand analysis, and presents the traffic operations analysis for conditions expected during construction. Finally, the memo provides an impact analysis, which concluded that the Project's transportation impacts are less than significant.

PROJECT DESCRIPTION

The Project is the construction of an Equalization (EQ) basin, for sewer waste management, and connecting sewer lines. The basin would be located at 540 Crespi Drive in the parking lot for the City of Pacifica's Skate Park and Community Center on the east side of State Route 1 (SR-1) south of Crespi Drive. Construction is expected to last 49 work days. The Project would include the following:

- Installation of the 2.1-million-gallon EQ basin;
- Construction of two diversion structures to passively divert excess flows from the existing Linda Mar and Arguello sanitary sewer lines and transport the flow via a conveyance pipeline to the EQ basin during storm events;

- Construction of an effluent conveyance pipeline routing flows to the existing Crespi Drive sanitary sewer line and Linda Mar Boulevard pump station;
- Construction of a fenced-in, weather-proof motor control center; and
- Construction of ventilation, odor-control, and cleaning systems within the EQ basin;
- Closing the 49-space Skate Park parking lot and diverting parking to the Crespi Parking Lot north of the Community Center (the lot would be reconstructed with approximately the same number of spaces after the EQ basin construction is completed).

The new sanitary sewer piping detailed above would be constructed in City-owned right-of-ways or public utility easements. The location of the EQ basin and the piping are detailed in **Figure 1**. The EQ basin is surrounded by open space areas to the east, the Skate Park to the west, and the Community Center to the north. An open, vegetated drainage swale to the southwest provides a buffer from the residential parcels, which are approximately 80 feet to the southwest of the EQ basin.

The potential transportation effects of the construction project are related to vehicle trips that would be generated by construction employees and trucks hauling dirt that would be excavated at the project site. Excavated materials would be hauled by trucks to a site in Half Moon Bay to the south of the project area.

Project Site (EQ Basin)

Project Site Access

New Sanitary Sewer Piping

Figure 1

Project Site Area

ANALYSIS METHODS

Fehr & Peers evaluated the SR-1/Crespi Drive intersection in the vicinity of the site for the weekday morning (7:00 AM to 9:00 AM) and evening (4:00 PM to 6:00 PM) peak periods. The SR-1/Crespi Drive intersection is evaluated as it's located immediately adjacent to the City of Pacifica's Skate Park and Community Center where the EQ basin would be located.

The operational performance of a roadway network is commonly described with the term level of service (LOS). LOS is a qualitative description of operating conditions, ranging from LOS A (free-flow traffic conditions with little or no delay) to LOS F (oversaturated conditions where traffic flows exceed design capacity, resulting in long queues and delays.) LOS E corresponds to operations "at capacity." When volumes exceed capacity, stop-and-go conditions result and operations are designated as LOS F.

Traffic operations at signalized intersections are evaluated using the LOS method described in Chapter 16 of the Highway Capacity Manual (HCM). A signalized intersection's LOS is based on the weighted average control delay measured in seconds per vehicle and includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration. **Table 1** summarizes the relationship between the control delay and LOS for signalized intersections.

TABLE 1: SIGNALIZED INTERSECTION LOS CRITERIA		
Level of Service	**Description**	**Delay in Seconds**
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	< 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0

Source: 2010 Highway Capacity Manual.

EXISTING CONDITIONS

Vehicle turning movement, bicycle, and pedestrian volume counts were collected from 6:00 to 9:00 AM and from 3:00 to 6:00 PM on Wednesday, November 2, 2016. These counts are included in **Attachment A**. Based on these counts, the AM peak hour occurs between 7:00 AM and 8:00 AM and the PM peak hour occurs between 4:00 PM and 5:00 PM. However, the peak hour for the Project trips (detailed later in this memo) is between 8:00 AM and 9:00 AM. The existing total volume through the intersection from 8:00 AM to 9:00 AM is 10 percent lower than from 7:00 AM to 8:00

AM. This analysis evaluates a morning peak hour from 8:00 AM to 9:00 AM to capture the period that the proposed Project is expected to have the greatest effect on local vehicle operations.

Fehr & Peers conducted field observations on Thursday, November 3, 2016, including observations of the lane configurations, intersection operations, and vehicle queuing. Signal timing sheets were collected from Caltrans, which were last updated in July 2012. Existing vehicle queues were also observed at the study intersections to ensure that the Synchro models were properly calibrated.

During the AM peak period, traffic volumes were observed to be higher in the northbound direction and the majority of vehicles approaching westbound on Crespi Drive turned right onto northbound on SR-1. Queues were observed to be as long as 13 vehicles for the northbound through movement and up to six vehicles for the southbound through movement. Vehicle queues associated with the remaining movements were observed to be four vehicles or less. All queues cleared at every cycle.

In contrast, during the PM peak period, traffic volumes were observed to be higher in the southbound direction. Queues were observed to be at most 15 vehicles for the southbound through movement, seven vehicles for the southbound left movement, and 12 vehicles for the northbound through movement. Vehicle queues associated with the remaining movements were observed to be two vehicles or less. All queues cleared at every cycle.

Traffic Operations

Traffic operations at the study intersection are analyzed using the Synchro 9.0 software program. Synchro calculations are based on the procedures outlined in the HCM 2010. **Table 2** shows the Level of Service (LOS) results for the existing weekday AM and PM peak hours. During the AM and PM peak hours, the intersection operates at LOS B with an average vehicle delay of approximately 13 seconds. The traffic volumes analyzed are detailed in **Figure 2**.

The analysis reports are included in **Attachment B**.

TABLE 2: EXISTING CONDITIONS INTERSECTION OPERATION CONDITIONS				
Intersection	**Control**	**Peak Hour**	**Existing Conditions**	
			Delay[1]	**LOS[2]**
SR-1 / Crespi Drive	Signal	AM	12.6	B
		PM	12.5	B

Notes: Bold indicates unacceptable intersection operations.
1. Signal = signalized intersection
2. Traffic operations results include LOS (level of service) and delay (seconds per vehicle). LOS is based on delay thresholds published in the Highway Capacity manual (Transportation Research Board, 2010).

Transit, Pedestrian, and Bicycle Conditions

The Project area is served by several SamTrans transit lines; the 110, 112, and 118 buses stop along northbound SR-1 just south of Crespi Drive and continue up SR-1 to destinations to the north. The 14, 19, 49, 110, 112, and 118 buses stop along eastbound Crespi Drive east of SR-1 and directly north of the Pacifica Community Center and continue south into Pacifica or to other destinations to the south and east. No significant delays or interference were observed at either of these bus stops during the Am and PM peak hours.

There is currently a pedestrian crossing with a marked standard crosswalk on the south and east legs of the intersection of SR-1/Crespi Drive. Each of these crossings has a pedestrian push button on the traffic signal with a flashing red hand but no countdown function. There was minimal pedestrian traffic during the AM peak hour, and the majority of pedestrians observed in the PM peak hour were passing through the intersection to access the beach west of SR-1. There were no observed conflicts between pedestrians and vehicles at the intersection.

There are no bicycle facilities in the Project area. There was very light bicycle traffic in both peak hours. Bicyclists observed in the PM peak hour were using the sidewalks and pedestrian crossings to access the beach.

PROJECT TRAVEL DEMAND

The Project's travel demand has been estimated based on information provided by the City of Pacifica regarding vehicle activity related to construction.

Vehicle Trip Generation

Vehicles generated by the Project include employees and trucks:

- **Employees** will arrive before 8:00 AM and will not affect the AM peak hour; an estimated maximum of 15 employee vehicles will depart the site between 4:00 PM and 5:00 PM.
- **Trucks:** The City expects that a maximum of ten trucks would be traveling to the Project site from 8:00 AM to 9:00 AM. Trucks off-hauling soil are limited to egressing the site between 9:00 AM and 3:00 PM and will therefore not affect the peak hours. To assess the effect of trucks entering the site, this analysis applies a passenger car equivalent (PCE) for rolling terrain of 2.5 vehicles per truck (Highway Capacity Manual, Exhibit 11-10, 2010); the 10 trucks entering the site are analyzed as 25 passenger vehicles (10 trucks * 2.5 PCE = 25 vehicles).

Table 3 details the expected vehicle trips generated by the Project.

TABLE 3: PROJECT VEHCILE TRIP GENERATION

Project Trips	In	Out
AM Peak (8:00 AM – 9:00 AM)	25[1]	0
PM Peak (4:00 PM – 5:00 PM)	0	15

Notes:
1. 10 trucks * 2.5 Passenger Vehicle Equivalent = 25 passenger vehicles (Source: Highway Capacity Manual, 2010)

Trip Distribution

During the AM peak hour, all of the trucks are assumed to access the Project site from the north. During the PM peak hour, the majority of employees (80 percent) are assumed to exit the Project site to the north to access SR-1, while the remaining employees (20 percent) are expected to exit to the south.

EXISTING PLUS PROJECT CONDITIONS

This analysis evaluated an Existing Plus Project scenario where the expected project trips were added to the existing counts. The turning movement volumes for the Existing Conditions, the added Project, and the Existing Plus Project Conditions are detailed in **Figure 2**. The intersection operating

conditions for the Existing Conditions and Existing Plus Project Conditions are summarized in Table 4. Under Existing Plus Project, the intersection of SR-1/Crespi Drive continues to operate at LOS B with an average delay of 13 seconds in both the AM and PM peak hours. The analysis reports are included in **Attachment B**.

TABLE 4: EXISTING PLUS PROJECT INTERSECTION OPERATION CONDITIONS

Intersection	Control	Peak Hour	Existing		Existing Plus Project	
			Delay[1]	LOS[2]	Delay[1]	LOS[2]
SR-1 / Crespi Drive	Signal	AM	12.6	B	13.1	B
		PM	12.5	B	12.9	B

Notes: Bold indicates unacceptable intersection operations.
1. Signal = signalized intersection
2. Traffic operations results include LOS (level of service) and delay (seconds per vehicle). LOS is based on delay thresholds published in the Highway Capacity manual (Transportation Research Board, 2010).

Figure 2

Turning Movement Volumes at Project Study Intersection

IMPACT ANALYSIS

Traffic Conditions

The City of Pacifica currently uses a level of service standard of LOS D for all intersections. The intersection operates at LOS B under Existing and Existing Plus Project conditions. Therefore, the Project has a **less-than-significant** impact on traffic conditions at the study intersection.

Transit, Pedestrian, and Bicycle Conditions

The Project does not add any vehicles making the northbound right movement during the peak hours; therefore, it would not impact bus stop operations at the stop on SR-1 south of Crespi. While the Project would add ten trucks, or the equivalent of 25 passenger vehicles, during the AM peak hour passing by the bus stop on Crespi Drive north of the Community Center, these added vehicles would increase delay at the adjacent intersection by less than a second. Therefore, these project trips can be assumed to have a negligible impact on the bus stop operations. Some trucks will be leaving the site between 9:00 AM and 3:00 PM, but these vehicles are expected to be dispersed with no more than four per hour. Therefore, the Project has a **less-than-significant** impact on transit conditions along SR-1 at Crespi Drive.

Additionally, the Project does not propose to make any changes to existing or planned pedestrian or bicycle facilities, on or adjacent to the site. Because the intersection of SR-1/Crespi Drive is signalized, the added vehicles due to the Project would not affect pedestrians or bicyclists traveling through the intersection. Therefore, the Project has a **less-than-significant** impact on pedestrian and bicycle conditions at the study intersection.

ATTACHMENTS

Attachment A Traffic Counts

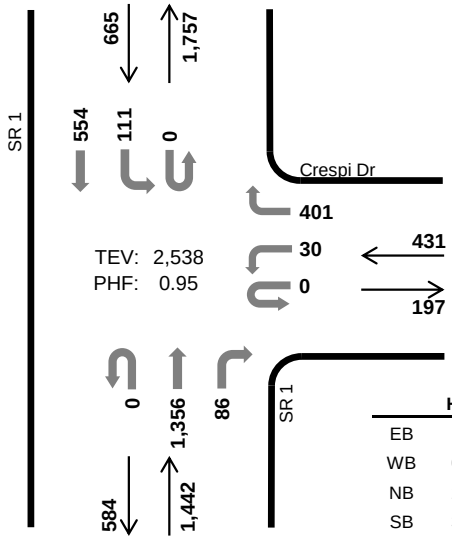
Attachment B Synchro Worksheets

ATTACHMENT A: Traffic Counts

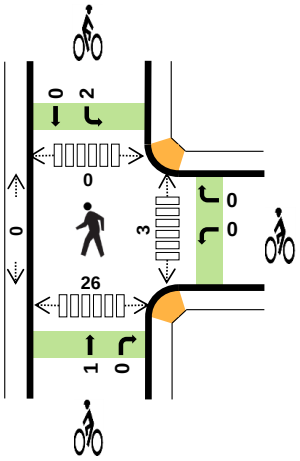
SR 1
Crespi Dr

Date: 11/02/2016
Count Period: 6:00 AM to 9:00 AM
Peak Hour: 7:00 AM to 8:00 AM

Peak Hour



	HV %:	PHF
EB	-	-
WB	0.7%	0.78
NB	2.2%	0.95
SB	3.6%	0.76
TOTAL	2.3%	0.95



Three-Hour Count Summaries

Interval Start		0 Eastbound				Crespi Dr Westbound				SR 1 Northbound				SR 1 Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	0	0	0	7	0	109	0	0	371	6	0	16	96	0	605	0
7:15 AM		0	0	0	0	0	6	0	133	0	0	365	14	0	17	118	0	653	0
7:30 AM		0	0	0	0	0	8	0	85	0	0	343	34	0	38	160	0	668	0
7:45 AM		0	0	0	0	0	9	0	74	0	0	277	32	0	40	180	0	612	2,538
Peak Hour	All	0	0	0	0	0	30	0	401	0	0	1,356	86	0	111	554	0	2,538	0
	HV	0	0	0	0	0	0	0	3	0	0	25	7	0	8	16	0	59	0
	HV%	-	-	-	-	-	0%	-	1%	-	-	2%	8%	-	7%	3%	-	2%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	1	8	4	*13*	0	0	0	0	*0*	0	0	0	3	*3*
7:15 AM	0	1	4	6	*11*	0	0	0	1	*1*	0	0	0	4	*4*
7:30 AM	0	1	13	7	*21*	0	0	1	1	*2*	0	0	0	5	*5*
7:45 AM	0	0	7	7	*14*	0	0	0	0	*0*	3	0	0	14	*17*
Peak Hour	0	3	32	24	*59*	0	0	1	2	*3*	3	0	0	26	*29*

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Three-Hour Count Summaries

Interval Start	0				Crespi Dr				SR 1				SR 1				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
6:00 AM	0	0	0	0	0	0	0	63	0	0	153	1	0	9	39	0	265	0
6:15 AM	0	0	0	0	0	2	0	59	0	0	196	5	0	8	68	0	338	0
6:30 AM	0	0	0	0	0	6	0	83	0	0	247	4	0	11	82	0	433	0
6:45 AM	0	0	0	0	0	0	0	91	0	0	291	5	0	21	101	0	509	1,545
7:00 AM	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**109**	**0**	**0**	**371**	**6**	**0**	**16**	**96**	**0**	**605**	1,885
7:15 AM	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**133**	**0**	**0**	**365**	**14**	**0**	**17**	**118**	**0**	**653**	2,200
7:30 AM	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**85**	**0**	**0**	**343**	**34**	**0**	**38**	**160**	**0**	**668**	2,435
7:45 AM	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**74**	**0**	**0**	**277**	**32**	**0**	**40**	**180**	**0**	**612**	**2,538**
8:00 AM	0	0	0	0	0	13	0	61	0	0	202	46	0	47	153	0	522	2,455
8:15 AM	0	0	0	0	0	21	0	70	0	0	246	72	0	52	148	0	609	2,411
8:30 AM	0	0	0	0	0	4	0	76	0	0	235	18	0	38	198	0	569	2,312
8:45 AM	0	0	0	0	0	10	0	61	0	0	233	9	0	38	187	0	538	2,238
Count Total	0	0	0	0	0	86	0	965	0	0	3,159	246	0	335	1,530	0	6,321	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**30**	**0**	**401**	**0**	**0**	**1,356**	**86**	**0**	**111**	**554**	**0**	**2,538**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**25**	**7**	**0**	**8**	**16**	**0**	**59**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**0%**	**-**	**1%**	**-**	**-**	**2%**	**8%**	**-**	**7%**	**3%**	**-**	**2%**	**0**

Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
6:00 AM	0	0	2	7	*9*	0	0	0	0	*0*	0	0	0	2	*2*
6:15 AM	0	0	6	5	*11*	0	0	0	0	*0*	0	0	0	2	*2*
6:30 AM	0	2	3	7	*12*	0	0	0	0	*0*	0	0	0	2	*2*
6:45 AM	0	0	3	5	*8*	0	0	0	0	*0*	0	0	0	1	*1*
7:00 AM	**0**	**1**	**8**	**4**	***13***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**3**	*3*
7:15 AM	**0**	**1**	**4**	**6**	***11***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**4**	*4*
7:30 AM	**0**	**1**	**13**	**7**	***21***	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**5**	*5*
7:45 AM	**0**	**0**	**7**	**7**	***14***	**0**	**0**	**0**	**0**	***0***	**3**	**0**	**0**	**14**	***17***
8:00 AM	0	1	14	8	*23*	0	0	0	3	*3*	0	0	0	15	*15*
8:15 AM	0	2	8	4	*14*	0	0	0	0	*0*	0	0	0	12	*12*
8:30 AM	0	2	4	13	*19*	0	0	0	1	*1*	0	0	0	11	*11*
8:45 AM	0	2	3	5	*10*	0	0	0	0	*0*	1	0	0	12	*13*
Count Total	0	12	75	78	*165*	0	0	1	6	*7*	4	0	0	83	*87*
Peak Hr	**0**	**3**	**32**	**24**	***59***	**0**	**0**	**1**	**2**	***3***	**3**	**0**	**0**	**26**	***29***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Three-Hour Count Summaries - Heavy Vehicles

Interval Start	0				Crespi Dr				SR 1				SR 1				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
6:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	7	0	9	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	5	1	0	0	5	0	11	0
6:30 AM	0	0	0	0	0	1	0	1	0	0	3	0	0	2	5	0	12	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	5	0	8	40
7:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**6**	**2**	**0**	**2**	**2**	**0**	**13**	44
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**2**	**0**	**2**	**4**	**0**	**11**	44
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**12**	**1**	**0**	**2**	**5**	**0**	**21**	53
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**2**	**0**	**2**	**5**	**0**	**14**	**59**
8:00 AM	0	0	0	0	0	1	0	0	0	0	11	3	0	1	7	0	23	69
8:15 AM	0	0	0	0	0	1	0	1	0	0	6	2	0	1	3	0	14	72
8:30 AM	0	0	0	0	0	0	0	2	0	0	3	1	0	4	9	0	19	70
8:45 AM	0	0	0	0	0	0	0	2	0	0	3	0	0	0	5	0	10	66
Count Total	0	0	0	0	0	3	0	9	0	0	61	14	0	16	62	0	165	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**25**	**7**	**0**	**8**	**16**	**0**	**59**	**0**

Three-Hour Count Summaries - Bikes

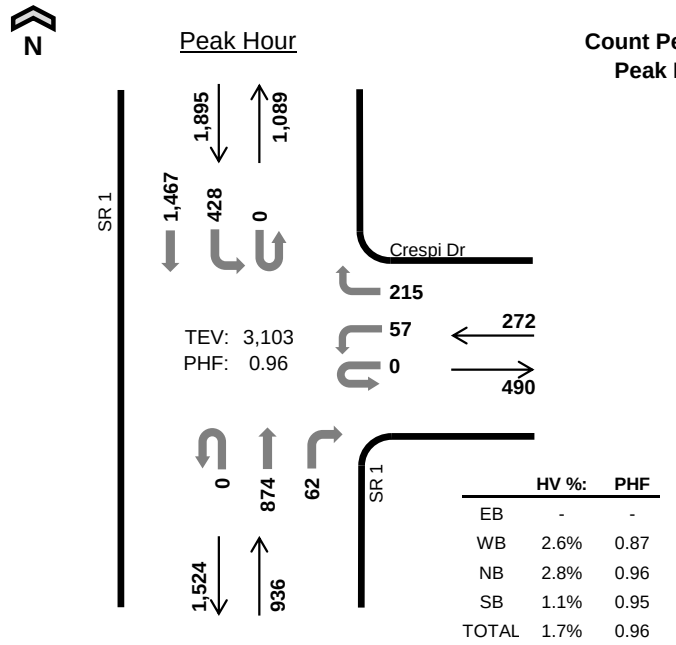
Interval Start	0			Crespi Dr			SR 1			SR 1			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	1
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**2**	3
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
8:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	3	6
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	4
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	0	0	0	0	0	0	0	1	0	2	4	0	7	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**3**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

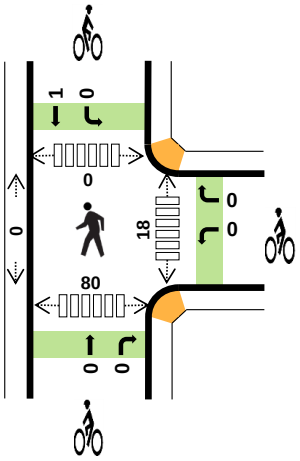
Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

SR 1
Crespi Dr

Date: 11/02/2016
Count Period: 3:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM



	HV %:	PHF
EB	-	-
WB	2.6%	0.87
NB	2.8%	0.96
SB	1.1%	0.95
TOTAL	1.7%	0.96



Three-Hour Count Summaries

Interval Start		0 Eastbound				Crespi Dr Westbound				SR 1 Northbound				SR 1 Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	0	0	11	0	60	0	0	229	9	0	114	384	0	807	0
4:15 PM		0	0	0	0	0	13	0	47	0	0	204	9	0	113	353	0	739	0
4:30 PM		0	0	0	0	0	13	0	50	0	0	217	23	0	104	352	0	759	0
4:45 PM		0	0	0	0	0	20	0	58	0	0	224	21	0	97	378	0	798	3,103
Peak Hour	All	0	0	0	0	0	57	0	215	0	0	874	62	0	428	1,467	0	3,103	0
	HV	0	0	0	0	0	0	0	7	0	0	23	3	0	6	15	0	54	0
	HV%	-	-	-	-	-	0%	-	3%	-	-	3%	5%	-	1%	1%	-	2%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	4	6	7	*17*	0	0	0	1	*1*	5	0	0	20	*25*
4:15 PM	0	1	3	4	*8*	0	0	0	0	*0*	4	0	0	26	*30*
4:30 PM	0	0	10	5	*15*	0	0	0	0	*0*	7	0	0	18	*25*
4:45 PM	0	2	7	5	*14*	0	0	0	0	*0*	2	0	0	16	*18*
Peak Hour	0	7	26	21	*54*	0	0	0	1	*1*	18	0	0	80	*98*

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Three-Hour Count Summaries

Interval Start	0				Crespi Dr				SR 1				SR 1				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:00 PM	0	0	0	0	0	12	0	68	0	0	189	13	0	46	319	0	647	0
3:15 PM	0	0	0	0	0	11	0	56	0	0	210	16	0	74	318	0	685	0
3:30 PM	0	0	0	0	0	16	0	66	0	0	252	11	0	79	314	0	738	0
3:45 PM	0	0	0	0	0	17	0	42	0	0	216	17	0	89	381	0	762	2,832
4:00 PM	**0**	**0**	**0**	**0**	**0**	**11**	**0**	**60**	**0**	**0**	**229**	**9**	**0**	**114**	**384**	**0**	**807**	2,992
4:15 PM	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**47**	**0**	**0**	**204**	**9**	**0**	**113**	**353**	**0**	**739**	3,046
4:30 PM	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**50**	**0**	**0**	**217**	**23**	**0**	**104**	**352**	**0**	**759**	3,067
4:45 PM	**0**	**0**	**0**	**0**	**0**	**20**	**0**	**58**	**0**	**0**	**224**	**21**	**0**	**97**	**378**	**0**	**798**	**3,103**
5:00 PM	0	0	0	0	0	15	0	54	0	0	213	10	0	99	335	0	726	3,022
5:15 PM	0	0	0	0	0	15	0	44	0	0	229	20	0	98	354	0	760	3,043
5:30 PM	0	0	0	0	0	11	0	55	0	0	203	17	0	91	342	0	719	3,003
5:45 PM	0	0	0	0	0	14	0	51	0	0	207	10	0	113	355	0	750	2,955
Count Total	0	0	0	0	0	168	0	651	0	0	2,593	176	0	1,117	4,185	0	8,890	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**57**	**0**	**215**	**0**	**0**	**874**	**62**	**0**	**428**	**1,467**	**0**	**3,103**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**23**	**3**	**0**	**6**	**15**	**0**	**54**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**0%**	**-**	**3%**	**-**	**-**	**3%**	**5%**	**-**	**1%**	**1%**	**-**	**2%**	**0**

Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
3:00 PM	0	0	8	15	*23*	0	0	0	0	*0*	0	0	0	16	*16*
3:15 PM	0	3	8	7	*18*	0	0	0	0	*0*	0	0	0	18	*18*
3:30 PM	0	2	8	9	*19*	0	0	0	0	*0*	2	0	0	12	*14*
3:45 PM	0	2	6	7	*15*	0	0	0	1	*1*	4	0	0	18	*22*
4:00 PM	**0**	**4**	**6**	**7**	***17***	**0**	**0**	**0**	**1**	***1***	**5**	**0**	**0**	**20**	*25*
4:15 PM	**0**	**1**	**3**	**4**	***8***	**0**	**0**	**0**	**0**	***0***	**4**	**0**	**0**	**26**	*30*
4:30 PM	**0**	**0**	**10**	**5**	***15***	**0**	**0**	**0**	**0**	***0***	**7**	**0**	**0**	**18**	*25*
4:45 PM	**0**	**2**	**7**	**5**	***14***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**0**	**16**	***18***
5:00 PM	0	1	5	4	*10*	0	0	0	1	*1*	2	0	0	15	*17*
5:15 PM	0	0	6	6	*12*	0	0	1	0	*1*	1	0	0	22	*23*
5:30 PM	0	2	8	7	*17*	0	0	1	0	*1*	3	0	0	8	*11*
5:45 PM	0	1	2	3	*6*	0	0	0	0	*0*	1	0	0	25	*26*
Count Total	0	18	77	79	*174*	0	0	2	3	*5*	31	0	0	214	*245*
Peak Hr	**0**	**7**	**26**	**21**	***54***	**0**	**0**	**0**	**1**	***1***	**18**	**0**	**0**	**80**	***98***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Three-Hour Count Summaries - Heavy Vehicles

Interval Start	0				Crespi Dr				SR 1				SR 1				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:00 PM	0	0	0	0	0	0	0	0	0	0	5	3	0	3	12	0	23	0
3:15 PM	0	0	0	0	0	0	0	3	0	0	8	0	0	3	4	0	18	0
3:30 PM	0	0	0	0	0	1	0	1	0	0	7	1	0	2	7	0	19	0
3:45 PM	0	0	0	0	0	1	0	1	0	0	6	0	0	3	4	0	15	75
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**6**	**0**	**0**	**4**	**3**	**0**	**17**	69
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**1**	**0**	**1**	**3**	**0**	**8**	59
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**1**	**0**	**1**	**4**	**0**	**15**	55
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**6**	**1**	**0**	**0**	**5**	**0**	**14**	**54**
5:00 PM	0	0	0	0	0	0	0	1	0	0	5	0	0	3	1	0	10	47
5:15 PM	0	0	0	0	0	0	0	0	0	0	5	1	0	2	4	0	12	51
5:30 PM	0	0	0	0	0	0	0	2	0	0	7	1	0	3	4	0	17	53
5:45 PM	0	0	0	0	0	0	0	1	0	0	2	0	0	1	2	0	6	45
Count Total	0	0	0	0	0	2	0	16	0	0	68	9	0	26	53	0	174	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**23**	**3**	**0**	**6**	**15**	**0**	**54**	**0**

Three-Hour Count Summaries - Bikes

Interval Start	0			Crespi Dr			SR 1			SR 1			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	1
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	2
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
5:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	1
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	2
5:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Count Total	0	0	0	0	0	0	0	2	0	1	2	0	5	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

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ATTACHMENT B: Synchro Worksheets

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	268	916	145	175	686
Future Volume (vph)	48	268	916	145	175	686
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	0.97	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3505	1547	3400	3505
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	3505	1547	3400	3505
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	291	996	158	190	746
RTOR Reduction (vph)	0	78	0	44	0	0
Lane Group Flow (vph)	52	213	996	114	190	746
Confl. Peds. (#/hr)	50			1	1	
Heavy Vehicles (%)	2%	2%	3%	3%	3%	3%
Turn Type	Prot	pt+ov	NA	Perm	Prot	NA
Protected Phases	8	1 8	2		1	6
Permitted Phases				2		
Actuated Green, G (s)	13.9	26.7	61.2	61.2	9.8	74.0
Effective Green, g (s)	12.9	26.7	62.7	62.7	8.8	75.5
Actuated g/C Ratio	0.13	0.28	0.65	0.65	0.09	0.78
Clearance Time (s)	3.0		5.5	5.5	3.0	5.5
Vehicle Extension (s)	2.0		4.5	4.5	2.0	4.0
Lane Grp Cap (vph)	236	438	2279	1006	310	2745
v/s Ratio Prot	0.03	c0.13	c0.28		0.06	0.21
v/s Ratio Perm				0.07		
v/c Ratio	0.22	0.49	0.44	0.11	0.61	0.27
Uniform Delay, d1	37.3	29.1	8.2	6.4	42.2	2.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	0.2	0.1	2.5	0.1
Delay (s)	37.4	29.4	8.5	6.4	44.7	3.0
Level of Service	D	C	A	A	D	A
Approach Delay (s)	30.6		8.2			11.4
Approach LOS	C		A			B

Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	96.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	57	215	874	62	428	1467
Future Volume (vph)	57	215	874	62	428	1467
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	0.97	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	1568	3505	1511	3467	3574
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	1568	3505	1511	3467	3574
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	59	224	910	65	446	1528
RTOR Reduction (vph)	0	84	0	22	0	0
Lane Group Flow (vph)	59	140	910	43	446	1528
Confl. Peds. (#/hr)	80			18	18	
Heavy Vehicles (%)	3%	3%	3%	3%	1%	1%
Turn Type	Prot	pt+ov	NA	Perm	Prot	NA
Protected Phases	8	1 8	2		1	6
Permitted Phases				2		
Actuated Green, G (s)	9.7	28.6	54.1	54.1	15.9	73.0
Effective Green, g (s)	8.7	28.6	55.6	55.6	14.9	74.5
Actuated g/C Ratio	0.10	0.31	0.61	0.61	0.16	0.82
Clearance Time (s)	3.0		5.5	5.5	3.0	5.5
Vehicle Extension (s)	2.0		4.5	4.5	2.0	4.0
Lane Grp Cap (vph)	167	491	2136	921	566	2919
v/s Ratio Prot	c0.03	0.09	0.26		c0.13	c0.43
v/s Ratio Perm				0.03		
v/c Ratio	0.35	0.29	0.43	0.05	0.79	0.52
Uniform Delay, d1	38.6	23.6	9.4	7.2	36.6	2.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1	0.2	0.0	6.6	0.2
Delay (s)	39.1	23.7	9.6	7.2	43.3	2.9
Level of Service	D	C	A	A	D	A
Approach Delay (s)	26.9		9.5			12.0
Approach LOS	C		A			B

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	91.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	268	916	145	200	686
Future Volume (vph)	48	268	916	145	200	686
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	0.97	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3505	1547	3400	3505
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1583	3505	1547	3400	3505
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	291	996	158	217	746
RTOR Reduction (vph)	0	77	0	45	0	0
Lane Group Flow (vph)	52	214	996	113	217	746
Confl. Peds. (#/hr)	50			1	1	
Heavy Vehicles (%)	2%	2%	3%	3%	3%	3%
Turn Type	Prot	pt+ov	NA	Perm	Prot	NA
Protected Phases	8	1 8	2		1	6
Permitted Phases				2		
Actuated Green, G (s)	13.9	27.5	61.3	61.3	10.6	74.9
Effective Green, g (s)	12.9	27.5	62.8	62.8	9.6	76.4
Actuated g/C Ratio	0.13	0.28	0.65	0.65	0.10	0.79
Clearance Time (s)	3.0		5.5	5.5	3.0	5.5
Vehicle Extension (s)	2.0		4.5	4.5	2.0	4.0
Lane Grp Cap (vph)	234	447	2262	998	335	2752
v/s Ratio Prot	0.03	c0.13	c0.28		0.06	0.21
v/s Ratio Perm				0.07		
v/c Ratio	0.22	0.48	0.44	0.11	0.65	0.27
Uniform Delay, d1	37.7	28.9	8.5	6.6	42.2	2.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	0.2	0.1	3.2	0.1
Delay (s)	37.9	29.2	8.8	6.7	45.4	2.9
Level of Service	D	C	A	A	D	A
Approach Delay (s)	30.6		8.5			12.5
Approach LOS	C		A			B

Intersection Summary			
HCM 2000 Control Delay	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	97.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	60	227	874	62	428	1467
Future Volume (vph)	60	227	874	62	428	1467
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	3.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	1.00	0.97	0.95
Frpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	1568	3505	1511	3467	3574
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	1568	3505	1511	3467	3574
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	62	236	910	65	446	1528
RTOR Reduction (vph)	0	83	0	22	0	0
Lane Group Flow (vph)	63	153	910	43	446	1528
Confl. Peds. (#/hr)	80			18	18	
Heavy Vehicles (%)	3%	3%	3%	3%	1%	1%
Turn Type	Prot	pt+ov	NA	Perm	Prot	NA
Protected Phases	8	1 8	2		1	6
Permitted Phases				2		
Actuated Green, G (s)	10.2	29.1	54.3	54.3	15.9	73.2
Effective Green, g (s)	9.2	29.1	55.8	55.8	14.9	74.7
Actuated g/C Ratio	0.10	0.32	0.61	0.61	0.16	0.81
Clearance Time (s)	3.0		5.5	5.5	3.0	5.5
Vehicle Extension (s)	2.0		4.5	4.5	2.0	4.0
Lane Grp Cap (vph)	175	496	2128	917	562	2905
v/s Ratio Prot	c0.04	0.10	0.26		c0.13	c0.43
v/s Ratio Perm				0.03		
v/c Ratio	0.36	0.31	0.43	0.05	0.79	0.53
Uniform Delay, d1	38.6	23.8	9.6	7.3	37.0	2.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1	0.2	0.0	7.1	0.2
Delay (s)	39.1	23.9	9.8	7.3	44.1	3.0
Level of Service	D	C	A	A	D	A
Approach Delay (s)	27.1		9.7			12.3
Approach LOS	C		A			B

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	91.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX E
MITIGATION MONITORING PLAN AND REPORTING PROGRAM CHECKLIST

Mitigation Monitoring Plan and Reporting Program Checklist
Wet Weather Flow Equalization Basin Project
Draft Mitigated Negative Declaration/Initial Study
City of Pacifica, California

Mitigation Measures and Applicant Proposed Measures	One-Time or Ongoing	Responsible for Implementation	Responsible for Verification	Form of Verification	Comments/ Special Instructions	Initials	Date
AES-1: The Tree Protection Plan prepared by the City (or designee) shall include a schedule and replacement ratio for heritage tree removal. The Tree Protection Plan shall require that replacement trees shall be placed as closely as feasible to the removal sites in order to return aesthetics to pre-project conditions.	One-Time						
AQ-1: The selected contractor shall include basic measures to control dust and exhaust during construction, as recommended by the Bay Area Air Quality Management District (BAAQMD). During any construction period with ground disturbance, the Project contractor shall implement the following BAAQMD-recommended best management practices (BMPs): 1. All exposed non-hardscaped surfaces (e.g., temporary parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered appropriately to maintain a damp condition. 2. All haul trucks transporting soil, sand, or other loose material offsite shall be covered. 3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping or washing down paved streets using potable water is prohibited. 4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour. 5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. 6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage with these requirements shall be provided for construction workers at all access points. 7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. 8. A publicly visible sign shall be posted with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.	Ongoing during project construction						
BIO-1: The City shall implement the following measures or designate implementation of these measures to the contractor prior to construction: 1. Post signage indicating that travel and parking of vehicles and equipment must be limited to pavement, existing roads, and previously disturbed areas. 2. Include provisions in the Project Plans detailing the areas that have been found to be acceptable for disturbance (i.e., previously disturbed areas and those within the Biological Study Area [BSA]). The contractor shall not disturb or remove vegetation outside of these areas. Work areas that would be temporarily impacted by construction would be restored with respect to pre-existing contours and conditions upon completion of work. Restoration work including re-vegetation and soil stabilization shall be evaluated upon completion of work and performed as needed. 3. The City shall ensure that the Stormwater Pollution Prevention Plan (SWPPP) prepared and implemented for the project shall include measures that: • minimize erosion and/or prevent water-borne silt from being deposited in adjacent undeveloped areas; • prevent waste and/or construction materials from getting into the adjacent undeveloped areas; and • control and prevent the discharge of all potential pollutants, including hazardous materials, solid wastes, paints, concrete, petroleum products, chemicals, wash water or sediment, and non-stormwater discharges to adjacent undeveloped areas via storm drains, water courses, or sheet flow.	Ongoing during project construction One-Time One-Time						

Mitigation Monitoring Plan and Reporting Program Checklist
Wet Weather Flow Equalization Basin Project
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City of Pacifica, California

Mitigation Measures and Applicant Proposed Measures	One-Time or Ongoing	Responsible for Implementation	Responsible for Verification	Form of Verification	Comments/ Special Instructions	Initials	Date
BIO-2: The City shall implement the following measures or designate implementation of these measures to the contractor:							
1. A qualified biologist shall assist with the placement of wildlife exclusion fencing, and verify that stormwater protection measures to protect adjacent undeveloped areas are in place prior to construction. The biologist shall be provided the contact information of the SWPPP Qualified SWPPP Developer (QSD), and vice versa.	One-Time						
2. Before the contractors, their employees, or any persons start any work onsite, each worker shall participate in an employee education program, consisting of a brief presentation to explain biological resources on the Project site, which shall be conducted by a qualified biologist. The program shall include the following: a. a description of relevant special-status species, nesting birds, and bats along with their habitat needs as they pertain to the BSA; b. a report of the occurrence of these species in the Project vicinity, as applicable; c. an explanation of the status of these species and their protection under the federal and state regulations; d. a list of measures being taken to reduce potential impacts to natural resources during project construction and implementation; e. instructions if a special-status species is found onsite; and f. a summary of the personal consequences of violating state and federal law related to these species. A fact sheet conveying this information shall be prepared and distributed to the above-mentioned people and anyone else who may enter the work areas within the BSA. Upon completion of training, employees shall sign a form stating that they attended the training and agree to all the conservation and protection measures. The training logs shall be provided to the City on a monthly basis.	Ongoing during project construction						
3. A qualified biologist shall conduct a pre-construction survey within the Project area for the presence of the California red-legged frog (CRLF) and/or the San Francisco garter snake (SFGS). The survey shall be conducted immediately prior to the initial onset of Project activities. If any special-status species are found, work shall not commence until the appropriate state and/or federal resource agencies are contacted and avoidance and mitigation measures are in place.	One-Time						
4. Within the disturbed areas of the BSA, all burrows that can be potentially occupied by CRLF and SFGS shall be hand-excavated by a qualified biologist who holds current permits to handle these species, prior to the start of construction activities. If CRLF or SFGS are found, the United States Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) shall be consulted to determine an appropriate course of action. Actions could include the relocation of the animal to nearby habitat, and compensatory mitigation for removal of occupied habitat.	Ongoing during project construction						
5. A wildlife exclusion/environmental fence (with escape routes, such as exit funnels) shall be erected around active construction areas to prevent the movement of animals into active construction areas under oversight by a qualified biologist. During construction, the fence shall be checked every day before construction activities commence for damage, breaks, or trapped wildlife. Any damage to the fence shall be repaired in a timely manner. The qualified biologist overseeing the placement of wildlife exclusion fencing shall ensure placement of the fence so that a minimum 3-foot-wide wildlife corridor remains open between the south end of the Skatepark parking lot and the residential fences.	Ongoing during project construction						

Mitigation Measures and Applicant Proposed Measures	One-Time or Ongoing	Responsible for Implementation	Responsible for Verification	Form of Verification	Comments/ Special Instructions	Initials	Date
6. A qualified biologist shall inspect the area inside of the fence for CRLF and SFGS every day before construction activities commence. If any special-status species are found, construction activities shall not be allowed to start and the USFWS and CDFW shall be consulted on an appropriate course of action. Such action could include leaving the animal alone to move away on its own or the relocation of the animal to an area outside of the BSA.	Ongoing during project construction						
7. When construction and construction-related activities (including, but not limited to, mobilization and staging, clearing, grubbing, vegetation removal, fence installation, demolition, and grading noise) occur during the avian nesting season (from February 1 to August 31 for passerines and January 1 to September 15 for raptors), all suitable habitats located within the Project's area of disturbance, including staging and storage areas plus a 250-foot (passerines) and 1,000-foot (raptor nests) buffer around these areas, shall be thoroughly surveyed, as feasible, for the presence of active nests by a qualified biologist no more than five days before commencement of any site disturbance activities and equipment mobilization. If project activities are delayed by more than five days, an additional nesting bird survey shall be performed. Active nesting is present if a bird is building a nest, sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys shall be documented and provided to the City's Planning Department. If pre-construction nesting bird surveys identify potential impacts to active nests, no site disturbance and mobilization of heavy equipment shall take place within a buffer determined by the biologist in consultation with a CDFW biologist. During that consultation, it can also be determined what low-impact construction activities are allowed within the buffer. The buffer shall be in place until the chicks have fledged. Monitoring shall be required to ensure compliance with the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. Monitoring dates and findings shall be documented and provided to the City's Planning Department.	One-Time						
8. A preconstruction survey of trees within the developed and disturbed areas of the BSA shall be conducted by a qualified biologist for colony bat roosts within 14 days prior to the onset of project activity, and the survey shall be documented and provided to the City's Planning Department. If an occupied maternity or colony roost is detected, the CDFW shall be consulted to determine appropriate measures, such as bat exclusion methods, if the roost cannot be avoided.	One-Time						
9. Food items may attract wild animals onto the construction site, which would expose them to construction-related hazards. The construction site shall be maintained in a clean condition. All trash (e.g., food scraps, cans, bottles, containers, wrappers, cigarette butts, and other discarded items) shall be placed in closed containers and properly disposed of.	Ongoing during project construction						
10. If an animal is found at the work site and is believed to be a protected species, work must be halted and the project biologist contacted for guidance. Care must be taken not to harm or harass the species. No wildlife species shall be handled and/or removed from the Project area by anyone except qualified biologists.	Ongoing during project construction						
11. The Project specifications, the contractor's work plan, and/or SWPPP shall include provisions to ensure that the use of monofilament netting, including its use in temporary and permanent erosion control materials, is avoided altogether. All holes greater than 1 foot deep must be sealed overnight to prevent the entrapment of wildlife. Where holes or trenches cannot be sealed, escape ramps that are no greater than 30% slope shall be positioned such that entrapped wildlife would be able to escape. The escape ramps should be at least 1 foot wide and covered/fitted with a material that provides traction.	One-Time						

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Wet Weather Flow Equalization Basin Project
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City of Pacifica, California

Mitigation Measures and Applicant Proposed Measures	One-Time or Ongoing	Responsible for Implementation	Responsible for Verification	Form of Verification	Comments/ Special Instructions	Initials	Date
CUL-1: In the event that any prehistoric, historic, or paleontological materials are discovered during ground-disturbing activities, ground work shall cease at the Project site and discovered materials and their surroundings shall not be altered or collected. A qualified archaeologist or paleontologist shall be consulted as to the significance of the find, and avoidance measures or appropriate mitigation shall be completed according to CEQA guidelines. Significant cultural materials recovered shall be subject to scientific analysis and/or professional museum curation, and a report shall be prepared by the qualified archaeologist according to current professional standards. Ground disturbance activities shall continue upon direction from the qualified archaeologist according to current professional standards.	Ongoing during project construction						
CUL-2: Prior to performing ground disturbance activities, all onsite workers shall be trained by a City-approved archaeologist in what cultural resources are, identifying cultural resources, the procedure if a cultural resource is found, and their legal responsibility to protect cultural resources. Training logs shall be provided to the City regularly.	Ongoing during project construction						
HAZ-1: The City shall ensure that: (a) The construction contractor (or designee) shall conduct a private utility survey for the presence of underground utilities, fill pipes, and underground storage tanks (USTs) prior to excavation within the Skatepark parking lot area, areas of the proposed jacking and receiving pits, and along the proposed locations of the influent and effluent conveyance pipelines. In the event that a UST is identified within the excavation boundaries, the City shall contact an environmental consultant, who shall perform and/or coordinate the investigation for the presence of contamination in accordance with applicable regulations. A report of the findings of the geophysical survey shall be submitted to the City's Construction Manager and City's Public Works Department liaison.	One-Time						
(b) The construction contractor shall require that site workers be trained in identifying contaminated soil and/or groundwater. In the event that contaminated soil or groundwater is encountered (either visually or through odor detection) during excavation activities, the construction contractor shall follow the procedures below: • Stop work in areas with suspected contamination; • Immediately report observations to the City's Construction Manager; • Contact an environmental consultant, who shall perform and/or coordinate the investigation of suspected contamination in accordance with applicable regulations.	Ongoing during project construction						
(c) If necessary, based on the findings of the environmental consultant, the City's Public Works Department shall notify San Mateo County Environmental Health Department, San Francisco Bay RWQCB, and/or the California Department of Toxic Substances Control (DTSC).	One-Time						
(d) If investigation confirms presence of contamination, the environmental consultant shall perform and/or coordinate appropriate site investigation and cleanup procedures in accordance with regulatory requirements, including the appropriate segregation and disposal of contaminated soil and groundwater. Once the extents of the contamination have been delineated and the contaminated materials (i.e., soil and/or groundwater) have been excavated or otherwise remediated (e.g., in-situ treatment), ground-disturbing activities shall continue.	One-Time						

Mitigation Measures and Applicant Proposed Measures	One-Time or Ongoing	Responsible for Implementation	Responsible for Verification	Form of Verification	Comments/ Special Instructions	Initials	Date
HAZ-2: The selected contractor shall be required to use BMPs to minimize the potential for releases of hazardous materials to groundwater, surface water, and soil. The BMPs shall be outlined in the contractor's Work Plan and provided to the City's Construction Manager, as well as the SWPPP, as required under the SWRCB Construction General Permit. The Work Plan shall include BMPs that accomplish the following: • Discussion of methodology and available technology for waste management and materials pollution control, as well as other construction-related activities. • Provisions for training the site workers on the proper storage and handling of hazardous substances, such as fuels, lubricants, paints, and solvents. Training logs shall be provided to the City regularly. • A process for responding to, and tracking, complaints pertaining to construction activity, including identification of the City's Construction Manager. The Construction Manager shall determine the cause of the complaints and shall take prompt action to correct the problem. The City's Planning and Zoning Department shall be informed who the City's Construction Manager is prior to the issuance of the first permit issued by Building Services. • Provision for accommodation of pedestrian flow and prevention of any unauthorized personnel from entering the construction zone or material and equipment storage areas. • Prior to construction, a portable toilet facility and a debris box shall be installed on the site and properly maintained through project completion.	Ongoing during project construction						
HYDRO-1: The general contractor shall develop a dewatering plan and obtain any necessary permits for performing dewatering. The dewatering plan shall include methods to manage the potential environmental impacts that dewatering activities might have. The dewatering plan shall include the following at a minimum: • a pre-dewatering topographic survey with a minimum vertical accuracy of 0.01 foot (if the existing site topographic survey already prepared for design purposes provides a minimum vertical accuracy of 0.01 foot, this survey can be utilized and an additional topographic survey would not be required); • a photographic survey of structures and flatwork in the surrounding area documenting any pre-dewatering damage to the structures or flatwork, including measurements of the widths and lengths of any significant cracks in the structures or flatwork; • pre-construction evaluation of required groundwater extraction rates and volumes, calculation of the radius of influence of the dewatering wells/sumps and anticipated settlements as a function of distance from the excavation; • measures to address situations where water resource impacts or excessive settlements are occurring. Monitoring of groundwater levels perpendicular to the proposed excavation zone shall be required to verify the assumptions used to calculate potential settlements.	Ongoing during project construction						

Mitigation Monitoring Plan and Reporting Program Checklist
Wet Weather Flow Equalization Basin Project
Draft Mitigated Negative Declaration/Initial Study
City of Pacifica, California

Mitigation Measures and Applicant Proposed Measures	One-Time or Ongoing	Responsible for Implementation	Responsible for Verification	Form of Verification	Comments/ Special Instructions	Initials	Date
NOISE-1: No construction activities shall be permitted on the weekends or at night. To reduce construction noise levels emanating from the site and minimize disruption and annoyance of existing noise-sensitive receptors in the Project vicinity, the City shall require the selected contractor to develop a Noise Control Plan. This noise control plan shall include, but not be limited to, the following construction BMPs: • All equipment driven by internal combustion engines shall be equipped with mufflers, which are in good condition and appropriate for the equipment. • The construction contractor shall utilize "quiet" models of air compressors and other stationary noise sources where technology exists. • Unnecessary idling of internal combustion engines shall be prohibited. • Construction staging areas shall be established at locations that would create the greatest distance between the construction-related noise sources and receptors nearest the Project site during all Project construction, as feasible. • Locate stationary noise sources as far from receptors as feasible. If they must be located near receptors, adequate muffling (with enclosures, where feasible and appropriate) would be used as necessary to comply with local noise ordinance and general plan limits. Any enclosure openings or venting would face away from receptors. • Locate material stockpiles, as well as maintenance/equipment staging and parking areas, as far as feasible from residential receptors. • Neighbors located adjacent to the construction site shall be notified of the construction schedule in writing. • Designate a project liaison who shall be responsible for responding to noise complaints during construction. The name and phone number of the liaison shall be conspicuously posted at construction areas and on all advance notifications. This person shall take steps to resolve complaints, including periodic noise monitoring, if necessary. Results of noise monitoring shall be presented at regular project meetings with the Project contractor, and the liaison shall coordinate with the contractor to modify any construction activities that generated excessive noise levels to the extent feasible. • Require a reporting program that documents complaints received, actions taken to resolve problems, and effectiveness of these actions. • Hold a preconstruction meeting with the job inspectors and the general contractor's onsite project manager to confirm that noise mitigation and practices (including construction hours, construction schedule, and noise coordinator) are completed.	Ongoing during project construction and operation						
PUB-1: At least 48 hours prior to road closures, the City's Public Works Department (or designee, such as the City's Consultant Construction Manager) shall notify local emergency service providers (Pacifica Police Department at 650-738-7314 and North County Fire Authority at 650-991-8138) of road closures and length of closure. The construction contractor shall obtain encroachment permits from the City's Engineering Department prior to construction-related lane or street parking closures.	Ongoing during project construction						

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TRANS-1: The selected contractor shall be required to prepare a Traffic Control Plan, which shall include, at minimum: • A set of comprehensive traffic control measures to maintain safety and Level of Service (LOS), including: - scheduling of major truck trips and deliveries to avoid peak traffic hours – deliveries and soil off-haul trucks shall not arrive onsite prior to 8 a.m. and shall not leave the site outside of the hours of 9 a.m. to 3 p.m., - requirements for posting of detour signs, - requirements for traffic control personnel such as flaggers during disruptions in the City rights-of-way, - lane closure procedures and signage requirements, - placement requirements for signs and cones for drivers, and - designated construction access routes; • Methods for maintaining the condition and LOS of city and state roadways; • Notification procedures for adjacent properties and public safety personnel regarding when major deliveries, detours, and lane closures would occur; • Location of construction staging areas for materials, equipment, and vehicles at an approved location; • Any heavy equipment brought to the construction site shall be transported by truck, where feasible.	Ongoing during project construction						
APM-1: During construction, the selected contractor shall use off-road equipment that would meet, at minimum, the following criteria: 1. All mobile diesel-powered off-road equipment larger than 25 horsepower (hp) and operating on the site for more than 20 hours shall meet, at a minimum, one of the following: a. Equipped with engines meeting U.S. Environmental Protection Agency (EPA) particulate matter emissions standards for Tier 2 engines or equivalent; b. All diesel-powered portable equipment (i.e., generators, concrete saws, and pumps) operating on the site for more than 20 hours shall be equipped with CARB-certified Level 3 Diesel Particulate Filters or meet U.S. EPA particulate matter emissions standards for Tier 4 engines or equivalent; c. Use alternatively fueled (i.e., non-diesel) equipment; or d. Other measures may be the use of added exhaust devices, or a combination of measures, provided that these measures are approved by the City and demonstrated to reduce community risk impacts to less than significant. 2. Line power shall be utilized as soon as feasible, limiting the use of all diesel-fueled generators, including any diesel-powered welders used for construction activities exceeding 20 days for each piece of equipment. Alternatively, prior to construction, the selected contractor may develop a plan, verified by a qualified air specialist and approved by the City, which ensures that the off-road equipment used onsite to construct the Project would achieve a fleet-wide average 75 percent reduction in PM10 exhaust emissions, compared to uncontrolled aggregate statewide emission rates for similar equipment.	Ongoing during project construction						

Mitigation Measures and Applicant Proposed Measures	One-Time or Ongoing	Responsible for Implementation	Responsible for Verification	Form of Verification	Comments/ Special Instructions	Initials	Date
APM-2: The contractor shall be required to construct temporary noise barriers to shield stationary noise sources (e.g., tunneling equipment) from nearby receptors. The barrier shall be a minimum of 16 feet in height and would provide approximately 8 to 10 A-weighted decibels (dBA) of attenuation at the first floor, and approximately 5 dBA of attenuation at second and third floors where, the line-of-sight to construction activities is interrupted by the barrier.	Ongoing during project construction						
APM-3: As noted in the Project Description, prior to the flushing and cleaning of the EQ basin, the City's Wastewater Treatment Plant Superintendent, or deputy thereof, shall contact both the North County Fire Department and the North Coast County Water District to alert them of anticipated water usage. If the water usage would impede water service for either of the agencies, the flushing and cleaning of the tank would be delayed until the demand could be met.	Prior to cleaning of EQ basin						