

APPENDICES



City of Milpitas Recycled Water Pipeline Extension Project Initial Study and Mitigated Negative Declaration

Prepared for:
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455 East Calaveras Boulevard
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Appendix A - Air Quality Emissions Model Results and General Conformity Report

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Technical Memorandum



Subject: General Conformity Air Quality Analysis
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A. Overview of the General Conformity Rule

The United States (U.S.) Congress adopted general conformity requirements as part of the Clean Air Act (CAA) Amendments in 1990 and the U.S. Environmental Protection Agency (USEPA) implemented those requirements in 1993 (Sec. 176 of the CAA (42 U.S.C. § 7506) and 40 CFR Part 93, Subpart B). The general conformity requirements are formally referred to as the General Conformity Rule, which requires that all federal actions “conform” with the State Implementation Plan (SIP) as approved or promulgated by USEPA. The purpose of the General Conformity Rule is to ensure that actions taken by the federal government do not undermine state or local efforts to achieve and maintain the National Ambient Air Quality Standards (NAAQS). Before a federal action is taken, the action must be evaluated for conformity with the SIP. All “reasonably foreseeable” emissions predicted to result from the action are taken into consideration; reasonably foreseeable emissions include direct and indirect emissions, and must be evaluated for their location and quantity. If it is found that the action would create emissions above de minimis threshold levels specified in USEPA regulations (40 CFR § 93.153(b)), or if the action is considered “regionally significant” because its emissions exceed 10% of an area’s total emissions, the action cannot proceed unless mitigation measures are specified that would bring the project into conformance.

General conformity applies in both federal nonattainment and federal air quality maintenance areas, including the Study Area for the city of Milpitas’s Recycled Water Pipeline Extension Project (proposed project). Within these federally designated areas, the General Conformity Rule applies to any “federal action” not specifically exempted by the CAA or USEPA regulations, i.e., any non-exempt activity by a federal governmental department, agency or instrumentality, or any activity that such an entity supports in any way, provides financial assistance for, or licenses, permits, or approves. This definition is broad enough to capture local agency approvals involving the receipt of federal funding. Emissions from construction activities are also included.

Methods Used for Determining Conformity

An action cannot be in compliance with the General Conformity Rule unless the total direct and indirect emissions from the action for criteria pollutants are in compliance with all relevant requirements contained in the applicable SIP. The USEPA provides several methods to determine if an action conforms to a SIP including a statewide emission budget, emission offsets, and/or air quality modeling. This Technical Memorandum uses a modeling approach to determine if the proposed project would cause or contribute to new air quality violations, or increase the frequency or severity of existing violations.

In addition to the use of modeling, USEPA has identified other methods of determining conformance with a SIP. One of these methods includes actions involving regional water and/or wastewater projects, as long as the projects are sized to meet only the needs of population projections that are in the applicable SIP.

All SIPs are based on local build-out projections from general planning documents; for the Study Area, the relevant SIP includes projections from local General Plans of applicable jurisdictions (City of Milpitas and the County of Santa Clara). Based on this factor, in conjunction with the low number of operational vehicle trips generated by the proposed project (e.g. less than 1 per day) over its long-term operational life, this assessment focuses on construction-related air quality effects that could result from the proposed project.

B. Project Description

The Study Area is located primarily in Milpitas, California, along the San Francisco Bay, with a small portion in unincorporated Santa Clara County. The Study Area is within the service area of the City of Milpitas with most construction occurring in a portion of the east half of the city generally bounded by I-680, Evans Road, Jacklin Road, Piedmont Road, and Landess Avenue; it will serve customers in that region, including the city of Milpitas, Milpitas Unified School District, Private School, Summit Pointe Golf Club, County of Santa Clara Parks, and Home Owners Associations.

The proposed project would expand on existing recycled water conveyance infrastructure. It will involve constructing and operating recycled water pipelines, pump stations, and a storage tank necessary to maximize delivery of recycled water within the Study Area, and to supply up to 750 acre-feet per year (AFY) of additional demands by 2021. The proposed project is exclusively recycled water.

This TM evaluates the proposed project at the project-level, complying with the California Environmental Quality Act (CEQA) and addressing National Environmental Policy Act (NEPA) components that would allow applicable federal agencies to make NEPA-related findings.

For the purposes of this TM, recycled water supplies would be utilized as non-potable water for irrigation and industrial use within the Study Area. The proposed project would connect customers in the area east of I-680 to recycled water through 5 distribution pipeline segments and laterals, one storage tank, and additional pumping capacity provided through four pump stations.

The proposed project will be fully operational in 2021.

Storage Tank Construction

The proposed project includes the construction of one new storage tank on the Cardoza Park parking lot. The new storage tank would have a pump station built adjacent to it and would be built with a capacity up to 1.5 million gallons to be completed by early 2018.

Pipelines

The proposed project proposes construction of approximately 50,560 linear feet (LF) of distribution pipelines to convey recycled water to end users. The proposed recycled water pipeline segments are listed below in **Table 1**.

Table 1: Proposed Project Recycled Water Pipelines

Segment #	Users	Pipe Diameter (inches)	Pipe Length (Linear Feet)	Related Road Names
1	Milpitas Unified School District, Milpitas Sports Center	12	10,260	Los Coches Street, Dempsey Road, North Park Victoria Drive and East Calaveras Boulevard, Kennedy Drive Edsel Drive
2	Cardoza Park	8	5,200	Jacklin Road, North Park Victoria Drive
3	Summitpointe Golf Club	8	7,700	Country Club Drive, Kennedy Drive, Old Calaveras Boulevard
4	Murphy Park Yellowstone Park Foothill Park Rancho Milpitas Unified School District, Hillcrest Terrace HOA	8	23,600	Edsel Drive, Roswell Drive, Yellowstone Avenue, Sequoia Drive, Everglades Drive, Landess Avenue, Olympic Drive, Cascade Street
5	Creighton Park	8	3,800	Ames Avenue, Sinclair Frontage Road, Olympic Drive
TOTALS			50,560	

Pump Stations

The proposed project includes the addition of four new pump stations necessary to convey recycled water to end users, which are listed below in **Table 2**. Three of these pump stations are stand-alone and identical in footprint. The air emissions resulting from the construction of these standalone pump stations were estimated using a disturbed area of 0.005 acres. The Cardoza Park pump station emissions were calculated along with the storage tank and fall under the same construction footprint. This is a conservative approximation given the overlap of pipe construction and storage tank construction. The pumps would be electrically driven, and no emergency standby power is currently planned for the sites.

Table 2: Proposed Project Pump Station Installations

Component	Pipeline Segment	Size (HP)	Number of Pumps ¹
Cardoza Park Pump Station	1	115	2
Country Club Drive Pump Station	3	35	2
Old Calaveras Boulevard Pump Station	3	35	2
Ben Rodgers Park	4	10	2
TOTAL		195	8

¹All pump stations have one duty pump and one standby pump.

Proposed Construction

Construction of the pipelines would generally be located within publicly -owned lands and roadway rights-of-way (ROWs) within the city of Milpitas, and a small portion in the County of Santa Clara. Pipeline installation for all portions of the proposed project would use standard open-cut trenching techniques or trenchless technology such as jack-and-bore to go avoid Berryessa Creek and other features as applicable.

Construction Equipment and Staging. Standard installation of the pipelines would proceed at the rate of approximately 150 feet per day. The disturbed area for each pipeline segment was calculated assuming a total of 45-feet of disturbed land perpendicular to the pipeline. Excavated trench materials would be redistributed over the completed pipeline area and/or transported off-site.

Construction of the advanced treatment plant and pump stations with adjacent chlorination/storage components would also require grading, site preparation, and facility installation.

Installation of the facilities for the proposed project would require, but is not limited to, the following equipment:

- Air Compressors
- Asphalt/Paver Truck
- Boom Truck/Small Crane
- Concrete/Industrial Saws
- Crane
- Excavator
- Forklifts
- Generator Set
- Pile Driver
- Plate Compactor
- Pumps
- Roller
- Skid Steer Loader
- Sweepers/Scrubbers
- Tractor/Loader/Backhoe
- Water Truck
- Welders

When feasible, equipment and vehicle staging would be accommodated either at each construction site (pipeline, storage tank and pump station site), or at a centralized staging area, such as the lot at the proposed tank and pump station site.

Surface Restoration. Where the pipelines are installed in a paved roadway, new asphalt or concrete pavement would be placed to match the surrounding road type. Temporary asphalt material may be installed to allow traffic to use the roadway immediately after construction. Final repaving would be done after pipeline installations and testing are complete. For unpaved surfaces, restoration would generally involve replanting with annual grasses or native vegetation.

Construction Schedule

Construction of the proposed project's pipeline Segments 1 and 2 and paired storage tank and pump station are scheduled to begin in 2017. The remaining three pump stations would be completed early 2020. Pipeline construction would be completed at the end of 2020.

C. Existing Air Quality Conditions

The Study Area is located in the County of Santa Clara, California. This area lies within the San Francisco Bay Area Air Basin (SFBAAB), a 5,340-square-mile area bounded including the 400-square-mile San Francisco Bay. It is bordered by the Pacific Ocean on the west, and the Coast Range Mountains from the northwest to the southeast. The SFBAAB includes all of Santa Clara County. The climate of the SFBAAB is determined primarily by the temperature interactions between the bay and the surrounding land, where temperature gradients between coastal and inland locations arise during the days in the summer and the nights in the winter. Due to the heavy industry, shipping, two large airports and a large population in the Basin, ozone (O₃) and PM_{2.5} levels are expected to continue to violate federal and State ambient air quality standards in spite of vigorous control measures. High levels of respirable particulate matter 10 microns or smaller (PM₁₀) also continue to violate State standards.

Criteria Air Pollutants

Criteria air pollutants of concern in the Study Area include ozone and particulate matter (PM). As required by the federal CAA, the USEPA has established National Ambient Air Quality Standards (NAAQS or national standards) to protect public health and welfare from these criteria pollutants. USEPA established standards for ozone¹, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead, and particulate matter equal to or less than 10 microns (PM₁₀) and less than 2.5 microns (PM_{2.5}). PM₁₀ is also commonly referred to as respirable particulate and PM_{2.5} is also known as fine particulate.

Local Air Attainment Status

The USEPA designates all areas of the United States as having air quality better than (attainment) or worse than (nonattainment) the NAAQS. A nonattainment designation generally means that a primary NAAQS has been exceeded more than once per year in a given area. The San Francisco Bay Area Air Basin is presently in “marginal” nonattainment for the 1997 and 2008 eight-hour ozone standards and “moderate” nonattainment for the 2006 PM_{2.5} standard.

Generally, concentrations of photochemical smog, or ozone, are highest during the summer months and coincide with the season of maximum solar radiation. Inert pollutant concentrations tend to be the greatest during the winter months and are a product of light wind conditions and surface-based temperature inversions that are more frequent during that time of year. These conditions limit atmospheric dispersion, trapping pollutants close to the ground. However, in the case of PM₁₀ impacts from fugitive dust sources, maximum dust impacts may occur during high wind events and/or in proximity to man-made ground-disturbing activities, such as vehicular activities on roads and earth moving during construction activities.

The Bay Area Air Quality Management District (BAAQMD) maintains 32 monitoring stations within the SFBAAB that monitor air quality compliance with ambient standards (BAAQMD 2015). Many of the stations are around the urban centers. Pollutants monitored include nitrogen oxides, carbon monoxide, sulfur dioxide, lead, black carbon, hydrogen sulfide, ultrafine particulate less than or equal to 0.1 microns and most importantly: O₃, PM₁₀, PM_{2.5}, and a number of toxic compounds.

Toxic Air Contaminants

Toxic Air Contaminants (TACs) are pollutants that are associated with acute, chronic, or carcinogenic effects but for which no ambient air quality standard has been established or, in the case of carcinogens, is appropriate. TAC impacts are evaluated by determining if a particular chemical poses a significant risk to human health and, if so, under what circumstances. The ambient background of TACs is the combined result of many diverse human activities, including gasoline stations, refineries, automobiles, industrial operations, and painting operations. In general, mobile sources contribute more significantly to health risks than stationary sources. Diesel PM is responsible for approximately 70 percent of the total toxic risk to Californians from air pollution.

In addition to diesel PM, emissions from diesel-fueled engines include over 40 other cancer-causing substances. Because diesel PM consists of more than one compound, monitoring is more difficult than for single TACs. However, based on a limited amount of data, the California Air Resources Board (CARB) has estimated the statewide, ambient, “population-weighted,” cancer risk due to essentially all TACs, based on year 2000 emissions, at 758 in 1 million; of this, CARB estimates that 540 in 1 million, or approximately 70 percent, is due to diesel particulate (CARB 2000).

¹ Ozone is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and nitrogen oxides (NOx). ROG and NOx are known as precursor compounds for ozone.

Certain serpentine formations contain asbestos fibers, which are considered a TAC when released into the atmosphere. Based on available geologic mapping, there is currently no documented evidence of serpentine rock in the Study Area (California Geological Survey 2000). Based on this circumstance, the potential for encountering asbestos-containing geologic formations is considered unlikely.

Federal Policies and Regulations

As previously indicated, the federal CAA requires the USEPA to identify criteria pollutants and establish NAAQS to protect public health and welfare. National standards have been established for ozone, CO, NO₂, SO₂, lead (Pb), PM₁₀, and PM_{2.5}. USEPA is responsible for implementing the myriad of programs established under the federal CAA, such as establishing and reviewing the NAAQS and judging the adequacy of SIPs, but has delegated the authority to implement many of the federal programs to the states while retaining an oversight role to ensure that the programs continue to be implemented.

Emission Standards for Nonroad Diesel Engines

The USEPA has established a series of cleaner emission standards for new off-road diesel engines culminating in the Tier 4 Final Rule of June 2004. The Tier 1, Tier 2, Tier 3, and Tier 4 standards require compliance with progressively stringent emission standards. Tier 1 standards were phased in from 1996 to 2000 (year of manufacture), depending on the engine horsepower category. Tier 2 standards were phased in from 2001 to 2006 and the Tier 3 standards were phased in from 2006 to 2008. The Tier 4 standards complement the latest 2007 on-road heavy-duty engine standards by requiring 90 percent reduction in PM and NO_x when compared against current emission levels. To meet these standards, engine manufacturers will produce new engines with advanced emissions control technologies similar to those already expected for on road heavy-duty diesel vehicles. Phasing in of Tier 4 standards started with smaller engines in 2008 until all but the very largest diesel engines meet NO_x and PM standards in 2015.

Emission Standards for On-Road Trucks

To reduce emissions from on-road, heavy-duty diesel trucks, USEPA established a series of cleaner emission standards for new engines starting in 1988. The final and cleanest Tier 4 standards apply to engines manufactured in year 2007.

Local Regulations

Through the attainment planning process, the BAAQMD has developed BAAQMD Rules and Regulations to regulate sources of air pollution in the SFBAAB. The most pertinent BAAQMD rules to the proposed project are listed below. The emission sources associated with the proposed project are considered mobile sources. Therefore, they are not subject to the BAAQMD rules that apply to stationary sources, namely Regulation 10 (Standards of Performance for New Stationary Sources). There will be an emergency generator on-site; however, it will operate very infrequently and will not produce significant emissions.

BAAQMD Rule 1-301 – Public Nuisance

Rule 1-301 prohibits discharge of air contaminants or other material that cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property

BAAQMD Rule 6-1-301, 305 – Ringelmann No. 1 Limitation and Visible Particles

The purpose of Rules 6-1-301 and 305 are to control the amount of PM entrained in the atmosphere from man-made sources of fugitive dust. The 301 rule prohibits emissions of visible emissions lasting a cumulative 3 minutes in any 60 minutes as dark as or darker than Ringelmann No. 1 or with an opacity to

obscure sight in an equivalent or greater manner. The 305 rule prohibits emissions of visible particles from any operation resulting in annoyance to any other person, visible on the individual particle level. During project construction, best available control measures identified in the rule would be required to minimize fugitive dust emissions from proposed earth-moving and grading activities. These measures would include site watering as necessary to maintain sufficient soil moisture content.

D. Impact Assessment

Methodology

As indicated in Section A of this TM, this analysis of the General Conformity Rule uses a modeling approach to determine if the proposed project would cause or contribute to new air quality violations, or increase the frequency or severity of existing violations. As part of this evaluation, emphasis is placed on the criteria air pollutants regulated by USEPA. In addition to criteria air pollutants, this analysis also addresses potential cumulative air quality impacts, potential sources of odor, impacts to sensitive receptors, and sources of greenhouse gases (GHGs) that would result from the proposed project.

This analysis involves the calculation of emission estimates using models widely used throughout BAAQMD and California and compares the model estimates to the General Conformity’s thresholds for NO_x, ROG, CO, and PM₁₀. The CalEEMod Model, Version 2013.2.2, was used to quantify construction and operational emissions associated with proposed storage tank and pump station facilities. Construction emissions from pipeline installation activities were estimated using the Road Construction Emissions Model, Version 7.1.5.1. Construction emissions related to electricity consumption of pumps and increased recycled water treatment were estimated.

Given that the County of Santa Clara is either in federal attainment or unclassified with respect to PM₁₀, CO, SO₂, sulfates, lead, and hydrogen sulfide, and the proposed project improvements would generate minimal to no emissions of these pollutants. Therefore, these pollutants require no further evaluation.

Threshold Exceedances

The BAAQMD has air quality screening-level thresholds (BAAQMD, 2010), which were published as updates to the CEQA Air Quality Handbook. While these thresholds are not enforced due to the ruling of the Alameda County Supreme Court in 2012, the merits of the threshold were not put into question and have been used as thresholds in other BAAQMD EIRs. They are also used as they are a conservative threshold of significance. The thresholds for criteria pollutants are presented in **Table 3**.

Table 3: BAAQMD Air Quality Screening-Level Thresholds

Pollutant	Emissions Rate ¹
Reactive Organic Gases (ROG)	54 lbs/day
Nitrogen Oxides (NO _x)	54 lbs/day
Particulate Matter <10 micron (PM ₁₀)	82 lbs/day
Particulate Matter <2.5 micron (PM _{2.5})	54 lbs/day

¹ Source: Revised Draft Options and Justification Report California Environmental Quality Act Thresholds of Significance (BAAQMD 2010).

Proposed project-related air quality impacts fall into two categories: 1) short-term impacts during construction and 2) long-term impacts during project operation. During project construction, construction activities would affect local particulate concentrations primarily because of fugitive dust emissions. Proposed project construction would also result in increased ROG and NO_x emissions from construction

equipment. During the project operations phase, project-related motor vehicle trips would also increase emissions of ozone precursors and particulates.

Table 4 provides a summary of the maximum daily air emissions generated for the proposed project components and evaluation of compliance with BAAQMD air quality significance thresholds, which are based on BAAQMD CEQA Significance Thresholds (2010). These maximum emissions take into consideration the proposed project’s phased construction schedule.

Table 4: Maximum Daily Air Emissions Generated for Proposed Project

Pollutant	Construction (lbs/day)				Significant Construction Emissions ³	Operation (lbs/day)	Significant Operation Emissions ³
	Pipeline Segment 1	Pipeline Segment 2	1 Pump Station & Storage Tank	Total			
Reactive Organic Gases (ROG)	1.94	2.22	1.57	5.73	No	0.1	No
Nitrogen Oxides (NOx)	14.30	22.36	14.11	52.52	No	0.4	No
Carbon Monoxide (CO)	13.16	14.69	13.21	41.06	No	0.0	No
Particulate Matter <10 micron (PM ₁₀)	0.89	4.35	1.51	7.76	No	0	No
Particulate Matter <2.5 micron (PM _{2.5})	0.79	1.70	0.88	3.51	No	0	No

1. The treatment plant and pump station emissions were calculated using CalEEMOD

2. Pipeline emissions were calculated using the Roadway Construction Emissions Model (SMAQMD 2013).

3. Thresholds from BAAQMD CEQA Significance Thresholds (BAAQMD 2010).

Based on maximum daily emissions for the proposed project, the air quality significance thresholds for emissions would be exceeded during construction if all components were constructed concurrently. For this reason as well as the logistics involved in a preliminary construction schedule, construction would be phased.

Construction Emissions. Project-related construction activities would occur in two distinct categories: pipeline and non-pipeline components. Depending on the phase, non-pipeline components would be constructed at the same time as one or more pipeline segments. For the non-pipeline components construction would involve site preparation, trenching, earthmoving, and stockpiling activities, followed by installing equipment, facility construction, on-site pipeline, concrete, and above ground improvements. Earthmoving activities include excavation, trenching, backfill, soil compaction, and grading. Installation of the pipelines and associated grading and roadway surface work would occur at the same time as the non-pipeline facility construction and would continue from 2017 to 2020 varying in intensity from one to two pipe segments at a time, while averaging one pipeline at a time. The emissions generated from these common construction activities include:

- Dust (including PM₁₀ and PM_{2.5}) primarily from fugitive sources such as soil disturbance and vehicle travel over unpaved surfaces;

- Combustion emissions of criteria air pollutants (including ROG, NO_x, PM₁₀) primarily from operation of heavy equipment construction machinery (primarily diesel operated), portable auxiliary equipment and construction worker automobile trips (primarily gasoline operated); and,
- Evaporative emissions (ROG) from asphalt paving and architectural coating applications.

Construction-related fugitive dust emissions would vary from day to day, depending on the level and type of activity and the weather. However, construction-related fugitive dust emissions would not exceed established thresholds.

Construction activities would also result in the emission of pollutants of concern, including ROG, NO_x, and PM₁₀, from construction equipment exhaust and construction worker automobile trips. Emission levels for construction activities would vary depending on the number and type of equipment, duration of use, operating schedules, and the number of construction workers. Construction-related ROG, NO_x and PM₁₀ emissions would not exceed established thresholds when a phased construction schedule is followed.

Construction emissions for pipeline installation were estimated using the Sacramento Metropolitan Air Quality Management District's Roadway Construction Model (SMAQMD 2013). Vehicle trips would be dispersed along the roadway network based on the location of construction activities. Estimated annual construction-related fugitive dust emissions, as well as exhaust emissions from construction equipment and worker trips are shown in **Table 5**. A summary of the model outputs is provided as part of **Attachment A**.

As shown in **Table 5**, General Conformity significance thresholds would not be exceeded for the proposed project.

Table 5: Proposed Project Estimated Pollutant Emissions

Pollutant	Carbon Monoxide (CO) (Tons/Yr)	Nitrogen Oxides (NO _x) (Tons/Yr)	Reactive Organic Gases (ROG) (Tons/Yr)	Particulate (PM ₁₀) (Tons/Yr)
Federal General Conformity Rule Threshold ¹	100	100	100	100
Construction Emissions ²	3.3	4.7	0.5	0.6
<i>Significant Emissions¹</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Operational Emissions ³	0.6	1.1	0.1	0.1
<i>Significant Emissions¹</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

1. Thresholds applied by Federal General Conformity Rule.

2. Calculations for construction were completed using Roadway Construction Emissions Model (Version 7.1.5.1, 2013) and CalEEMod model (Version 2013.2) and are included in Attachment A.

3. Calculations for operations were completed using CalEEMod (Version 2013.2) and are included in Attachment A. The emissions listed above are for a worst-case day.

Project Operations. The main operational components of the project include three new pumping facilities, a storage tank with an adjacent pump station, and maintenance-related vehicle trips. CalEEMod Version 2013.2, was used to quantify operational area and mobile source emissions associated with proposed storage and pump station facilities. A summary of the CalEEMod outputs are included in **Attachment A**.

Once operational, the proposed project would require minor maintenance activities of the pump stations, storage tank, and pipelines. Pump station operations would be driven by electricity and would not generate local emissions directly, but would result in emissions at a power plant within or outside of the BAAQMD. Power plant emissions, if located in California, are subject to the rules and regulations of the air district in which they are located and have been subject to their own regulatory review. Emissions from power generation to supply pumps would occur anywhere in the western U.S. power grid and emissions from motors to service the pumps would be regional. Energy would be supplied by permitted power sources,

such as sources permitted by the California Energy Commission's Application for Certification (CEQA equivalent) process.

Traffic generation during the long-term operation of the project improvements would average less than 1 one-way passenger vehicle trips per day, a negligible number of new trips. Operational emissions were estimated for the pump station or storage tank facilities using the CalEEMod 2013 Model. As provided in **Table 5** above, given an anticipated increase in vehicle trips of less than one per day, no trips were entered into the CalEEMod model. The CalEEMod outputs indicate that operational emissions for these facilities would be minor and would not exceed General Conformity thresholds or the BAAQMD thresholds meant to conform to the SIP. Based on the discussion presented above, operational air quality emissions associated with proposed project implementation are anticipated to be less than significant from a federal de minimis threshold perspective.

Cumulatively Considerable Net Increase of Criteria Pollutants

The proposed project is located within the BAAQMD, which does not meet state PM_{10} standards, the national $PM_{2.5}$, state $PM_{2.5}$ standard, and the state 1-hour, state 8-hour and the national 8-hour ozone standards. The BAAQMD is active in establishing and enforcing air pollution control rules and regulations in order to attain all state and federal ambient air quality standards and to minimize public exposure to airborne toxins and nuisance odors. As identified earlier, air emissions would be generated during construction of the proposed project. These construction-related emissions would not exceed the BAAQMD CEQA Significance Thresholds (2010).

Upon completion of construction activities, emission sources resulting from project operations would be associated with pump station and storage tank operations. **Table 5** shows that system operational emissions would be below BAAQMD thresholds and do not require further quantification. As such it is reasonable to conclude that the proposed project would not result in a cumulatively considerable net increase of criteria air pollutants as a result of operations for purposes of Federal Conformity reporting, and the impact would be de minimis.

Expose Sensitive Receptors to Substantial Pollutant Concentrations

Some receptors are considered more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions source, or duration of exposure to air pollutants. Land uses such as schools, children's day care centers, hospitals, and convalescent homes are considered to be more sensitive than the general public to poor air quality because the population groups associated with these uses are more susceptible to respiratory distress and other air quality-related health problems.

Within the Study Area, six sensitive receptors have been identified, all nearby schools. Construction of the proposed project would not emit hazardous air pollutants in significant quantity other than potentially from large, heavy-duty, diesel-powered equipment exhaust. The California Office of Environmental Health Hazard Assessment (OEHHA) currently describes the health risk from diesel exhaust entirely in terms of the amount of particulate, or PM_{10} , that is emitted. Currently, the health risk associated with diesel exhaust PM_{10} or diesel particulate matter is characterized as a carcinogenic and chronic effect; whereas no short-term acute effect is currently recognized. Construction of the proposed project improvements would be limited in duration and, therefore, no long-term chronic impact would be expected.

There is currently no documented evidence of serpentine rock in the Study Area, which could contain asbestos fibers, which are considered a TAC when released into the atmosphere (California Geological Survey 2000). Based on this circumstance, the potential for encountering asbestos-containing geologic formations during excavation is considered unlikely and no additional air contaminants would be released.

Based on the above discussion, the generation of significant emissions of TACs during construction activities is unlikely. However, based on the potential for close proximity of construction to sensitive receptors, the impact of construction-related dust and PM₁₀ and PM_{2.5} could potentially affect those sensitive receptors. The City of Milpitas is committed to implementing dust control measures per its standard construction specifications to reduce release of fugitive dust and associated impacts to sensitive receptors. With implementation of the standard construction specifications, the impact would be further reduced.

Over the longer term, operational emissions associated with the proposed pump stations would operate by electricity. The pumping facilities would operate year-round (24-hours a day, seven days a week). No backup generators are anticipated for this proposed project.

Creation of Objectionable Odors

Objectionable odors may be associated with a variety of pollutants. Common sources of odors include wastewater treatment plants, landfills, composting facilities, refineries, and chemical plants. Odors rarely directly affect health, but they can be very unpleasant and lead to distress and concern over possible health effects among the public, generating citizen complaints to local governments. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

The proposed project involves the expansion of the recycled water system. The recycled water would be supplied from the South Bay Water Recycling Program, which treats the recycled water to meet Title 22 standards, and is not anticipated to contribute to odorous emission. For this reason, no significant odorous emissions are anticipated. Further, pumping operations would be within fully enclosed structures and are not expected to result in the generation of objectionable odors during normal operation.

Directly or Indirectly Increase Generation of Greenhouse Gas Emissions

Some gases in the atmosphere affect the Earth's heat balance by absorbing infrared radiation. These layers of gas in the atmosphere can prevent the escape of heat much the same as glass in a greenhouse. Thus, climate change is often referred to as the "greenhouse effect". The gases most responsible for climate change are CO₂ and methane. Other greenhouse gases (GHG) include, but are not limited to, nitrous oxide (N₂O), sulfur hexafluoride, hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons. It is becoming more widely accepted that continued increases in GHG will contribute to climate change, although there is uncertainty concerning the magnitude and timing of the trend.

Energy-related CO₂ emissions, resulting from petroleum and natural gas, represent 82% of total U.S. human-made GHG emissions. Methane, a GHG that comes from landfills, coal mines, oil and gas operations, and agriculture, represents 9% of total emissions. Emitted from burning fossil fuels and through the use of certain fertilizers and industrial processes, N₂O totals about 5% of U.S. emissions. These gases collectively contribute to a project's total CO₂ equivalent per year (MTCO₂e/yr).

Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006, and Executive Order S-3-05, signed in June 2005, focus on reducing GHG emissions in California. The impacts of global climate change described in AB 32 include changing sea levels, changes in snow pack and availability of potable water, changes in storm flows and flood inundation zones, and other impacts. The list of impacts included in AB 32 is considered substantial evidence of the potential environmental impacts that could result as a consequence of continued GHG outputs.

At minimum, the proposed project would be required to comply with Title 24 energy efficiency standards, to the extent applicable; however, the extent to which these standards would help in achieving the goals outlined above is unknown. In response to this uncertainty and to provide clarification to lead agencies for

assessing GHG impacts, CARB has developed statewide interim thresholds of significance for common project types that, collectively, are responsible for substantial GHG emissions. In applying these interim thresholds, CARB developed a preliminary threshold of 7,000 MTCO₂e/yr for industrial projects. However, this applies to only operations and not construction. CARB is not establishing thresholds for construction projects, but rather is proposing mandatory performance standards. BAAQMD has set a threshold of 1,100 MTCO₂e/yr.

Quantification of GHG for the proposed project operations was based on the CO₂ outputs generated from CalEEMod combined with new electrical loads required for the operation of the proposed pumping facilities. GHG emissions generated by the collective proposed project operations are conservatively estimated at 853 MTCO₂e/yr for the construction and 193 MTCO₂e/yr for the operation. These assumptions lead to emission estimates less than either the CARB threshold or the BAAQMD threshold and, therefore, operational-related GHG emissions are *de minimis* and less than significant.

Mitigation Measures

No mitigation measures need to be implemented as a result of less than significant air quality pollutants or greenhouse gas emissions. Standard mitigation measure would be implemented based on BAAQMD regulations, including dust control measures and best available control technologies for construction equipment as needed and as available.

E. References

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- CARB. 2016. California Ambient Air Quality Standards. Website: <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>. Accessed 5/25/2016.
- Environ. 2014 CalEEMod Model, Version 2013.2. Available: <http://www.aqmd.gov/caleemod/download-model>
- SMAQMD. 2013. Roadway Construction Emissions Model, Version 7.1.5.1. August 2013. Available: www.airquality.org/ceqa/RoadConstructionEmissionsModelVer7_1_5_1.xls
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Attachment A
Air Quality Model Outputs

Milpitas Recycled Water Pipeline Extension - Cardoza Park Storage Tank and PS Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	0.34	User Defined Unit	0.34	14,764.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage of the site to be graded

Construction Phase - Schedule based on existing preliminary excel schedule

Off-road Equipment - Based on preliminary construction schedule - Bore/Drill Rigs assumed to have comparable emissions to pile driver

Off-road Equipment - Off-Highway Truck a surrogate for a water truck

Construction equipment based on phased equipment received in "Conveyance Construction Data.xlsx"

Off-road Equipment - Based on preliminary construction schedule

Off-road Equipment - Based on preliminary construction schedule

Trips and VMT - Estimate based on construction equipment, hauling based on 10 CY-sized truck

Demolition -

Grading - Based on anticipated dimensions of excavation site

Vehicle Trips - Based on anticipated increase in employment as a result of changes to operations. Trip length conservatively over-estimated.

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	22146	32670
tblConstructionPhase	NumDays	100.00	88.00
tblConstructionPhase	NumDays	5.00	21.00
tblConstructionPhase	NumDays	1.00	21.00
tblConstructionPhase	PhaseEndDate	3/1/2018	2/28/2018
tblConstructionPhase	PhaseStartDate	2/1/2018	1/31/2018
tblGrading	MaterialExported	0.00	11,279.00
tblGrading	MaterialImported	0.00	1,078.00
tblLandUse	LandUseSquareFeet	0.00	14,764.00
tblLandUse	LotAcreage	0.00	0.34
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	PhaseName		Construction
tblOffRoadEquipment	PhaseName		Construction
tblOffRoadEquipment	PhaseName		Site Prep
tblOffRoadEquipment	PhaseName		Construction
tblOffRoadEquipment	UsageHours	4.00	2.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripNumber	0.00	913.00
tblTripsAndVMT	VendorTripNumber	2.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	3.00
tblTripsAndVMT	WorkerTripNumber	6.00	20.00

2.0 Emissions Summary

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	0.0678	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0678	0.0000	0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005						

2.2 Overall Operational

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	0.0678	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0678	0.0000	0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005						

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Prep	Site Preparation	9/1/2017	9/29/2017	5	21	
2	Construction	Building Construction	9/30/2017	1/31/2018	5	88	
3	Restoration (final paving, cleaning)	Paving	1/31/2018	2/28/2018	5	21	

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
Site Prep	Cranes	1	6.00	226	0.29
Site Prep	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Construction	Air Compressors	1	2.00	78	0.48
Construction	Bore/Drill Rigs	1	1.00	205	0.50
Construction	Cranes	1	2.00	226	0.29
Construction	Excavators	1	6.00	162	0.38
Construction	Forklifts	1	2.00	89	0.20
Construction	Generator Sets	1	2.00	84	0.74
Construction	Plate Compactors	1	1.00	8	0.43
Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Construction	Welders	2	2.00	46	0.45
Restoration (final paving, cleaning)	Tractors/Loaders/Backhoes	1	6.00	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
Site Prep	2	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Construction	10	20.00	0.00	913.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Restoration (final paving, cleaning)	1	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Prep - 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					8.8000e-004	0.0000	8.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.6000e-003	0.0846	0.0406	7.0000e-005		4.5000e-003	4.5000e-003		4.1400e-003	4.1400e-003	0.0000	6.3975	6.3975	1.9600e-003	0.0000	6.4387
Total	7.6000e-003	0.0846	0.0406	7.0000e-005	8.8000e-004	4.5000e-003	5.3800e-003	1.3000e-004	4.1400e-003	4.2700e-003	0.0000	6.3975	6.3975	1.9600e-003	0.0000	6.4387

3.2 Site Prep - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	1.5000e-004	1.4300e-003	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2430	0.2430	1.0000e-005	0.0000	0.2433
Total	1.0000e-004	1.5000e-004	1.4300e-003	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2430	0.2430	1.0000e-005	0.0000	0.2433

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					8.8000e-004	0.0000	8.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.6000e-003	0.0846	0.0406	7.0000e-005		4.5000e-003	4.5000e-003		4.1400e-003	4.1400e-003	0.0000	6.3975	6.3975	1.9600e-003	0.0000	6.4387
Total	7.6000e-003	0.0846	0.0406	7.0000e-005	8.8000e-004	4.5000e-003	5.3800e-003	1.3000e-004	4.1400e-003	4.2700e-003	0.0000	6.3975	6.3975	1.9600e-003	0.0000	6.4387

3.2 Site Prep - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	1.5000e-004	1.4300e-003	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2430	0.2430	1.0000e-005	0.0000	0.2433
Total	1.0000e-004	1.5000e-004	1.4300e-003	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2430	0.2430	1.0000e-005	0.0000	0.2433

3.3 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	0.0413	0.3572	0.2652	4.3000e-004		0.0214	0.0214		0.0202	0.0202	0.0000	38.2491	38.2491	9.8300e-003	0.0000	38.4555
Total	0.0413	0.3572	0.2652	4.3000e-004		0.0214	0.0214		0.0202	0.0202	0.0000	38.2491	38.2491	9.8300e-003	0.0000	38.4555

3.3 Construction - 2017

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	6.5700e-003	0.0902	0.0734	2.5000e-004	7.2100e-003	1.1600e-003	8.3700e-003	1.9400e-003	1.0600e-003	3.0000e-003	0.0000	22.7075	22.7075	1.7000e-004	0.0000	22.7109
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	2.1700e-003	3.0500e-003	0.0295	7.0000e-005	5.9200e-003	5.0000e-005	5.9600e-003	1.5700e-003	4.0000e-005	1.6200e-003	0.0000	5.0152	5.0152	2.5000e-004	0.0000	5.0205
Total	8.7400e-003	0.0932	0.1030	3.2000e-004	0.0131	1.2100e-003	0.0143	3.5100e-003	1.1000e-003	4.6200e-003	0.0000	27.7226	27.7226	4.2000e-004	0.0000	27.7315

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	0.0413	0.3572	0.2652	4.3000e-004		0.0214	0.0214		0.0202	0.0202	0.0000	38.2490	38.2490	9.8300e-003	0.0000	38.4554
Total	0.0413	0.3572	0.2652	4.3000e-004		0.0214	0.0214		0.0202	0.0202	0.0000	38.2490	38.2490	9.8300e-003	0.0000	38.4554

3.3 Construction - 2017

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	6.5700e-003	0.0902	0.0734	2.5000e-004	7.2100e-003	1.1600e-003	8.3700e-003	1.9400e-003	1.0600e-003	3.0000e-003	0.0000	22.7075	22.7075	1.7000e-004	0.0000	22.7109
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	2.1700e-003	3.0500e-003	0.0295	7.0000e-005	5.9200e-003	5.0000e-005	5.9600e-003	1.5700e-003	4.0000e-005	1.6200e-003	0.0000	5.0152	5.0152	2.5000e-004	0.0000	5.0205
Total	8.7400e-003	0.0932	0.1030	3.2000e-004	0.0131	1.2100e-003	0.0143	3.5100e-003	1.1000e-003	4.6200e-003	0.0000	27.7226	27.7226	4.2000e-004	0.0000	27.7315

3.3 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	0.0126	0.1089	0.0914	1.5000e-004		6.2800e-003	6.2800e-003		5.9400e-003	5.9400e-003	0.0000	13.3716	13.3716	3.4200e-003	0.0000	13.4435
Total	0.0126	0.1089	0.0914	1.5000e-004		6.2800e-003	6.2800e-003		5.9400e-003	5.9400e-003	0.0000	13.3716	13.3716	3.4200e-003	0.0000	13.4435

3.3 Construction - 2018

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	0.0290	0.0250	9.0000e-005	6.3000e-003	4.0000e-004	6.7000e-003	1.6000e-003	3.7000e-004	1.9800e-003	0.0000	7.8969	7.8969	6.0000e-005	0.0000	7.8981
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	6.9000e-004	9.7000e-004	9.3800e-003	2.0000e-005	2.0900e-003	2.0000e-005	2.1100e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.7085	1.7085	8.0000e-005	0.0000	1.7103
Total	2.8800e-003	0.0300	0.0343	1.1000e-004	8.3900e-003	4.2000e-004	8.8100e-003	2.1600e-003	3.8000e-004	2.5500e-003	0.0000	9.6054	9.6054	1.4000e-004	0.0000	9.6084

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	0.0126	0.1089	0.0914	1.5000e-004		6.2800e-003	6.2800e-003		5.9400e-003	5.9400e-003	0.0000	13.3716	13.3716	3.4200e-003	0.0000	13.4435
Total	0.0126	0.1089	0.0914	1.5000e-004		6.2800e-003	6.2800e-003		5.9400e-003	5.9400e-003	0.0000	13.3716	13.3716	3.4200e-003	0.0000	13.4435

3.3 Construction - 2018**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	0.0290	0.0250	9.0000e-005	6.3000e-003	4.0000e-004	6.7000e-003	1.6000e-003	3.7000e-004	1.9800e-003	0.0000	7.8969	7.8969	6.0000e-005	0.0000	7.8981
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	6.9000e-004	9.7000e-004	9.3800e-003	2.0000e-005	2.0900e-003	2.0000e-005	2.1100e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.7085	1.7085	8.0000e-005	0.0000	1.7103
Total	2.8800e-003	0.0300	0.0343	1.1000e-004	8.3900e-003	4.2000e-004	8.8100e-003	2.1600e-003	3.8000e-004	2.5500e-003	0.0000	9.6054	9.6054	1.4000e-004	0.0000	9.6084

3.4 Restoration (final paving, cleaning) - 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	2.1000e-003	0.0207	0.0184	2.0000e-005		1.4700e-003	1.4700e-003		1.3500e-003	1.3500e-003	0.0000	2.2345	2.2345	7.0000e-004	0.0000	2.2491
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.1000e-003	0.0207	0.0184	2.0000e-005		1.4700e-003	1.4700e-003		1.3500e-003	1.3500e-003	0.0000	2.2345	2.2345	7.0000e-004	0.0000	2.2491

3.4 Restoration (final paving, cleaning) - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	1.3000e-004	1.2800e-003	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2340	0.2340	1.0000e-005	0.0000	0.2342
Total	9.0000e-005	1.3000e-004	1.2800e-003	0.0000	2.9000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2340	0.2340	1.0000e-005	0.0000	0.2342

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	2.1000e-003	0.0207	0.0184	2.0000e-005		1.4700e-003	1.4700e-003		1.3500e-003	1.3500e-003	0.0000	2.2345	2.2345	7.0000e-004	0.0000	2.2491
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.1000e-003	0.0207	0.0184	2.0000e-005		1.4700e-003	1.4700e-003		1.3500e-003	1.3500e-003	0.0000	2.2345	2.2345	7.0000e-004	0.0000	2.2491

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.551461	0.058468	0.185554	0.123211	0.029507	0.004440	0.012712	0.023230	0.001775	0.001270	0.006089	0.000516	0.001766

5.0 Energy Detail

~~4.4 Fleet Mix~~

Historical Energy Use: N

5.1 Mitigation Measures Energy

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	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	
Land Use	kBTU/yr	tons/yr										MT/yr						
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000								

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	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					
Mitigated	0.0678	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Unmitigated	0.0678	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005

6.2 Area by SubCategory

Unmitigated

	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
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0101					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0577					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	0.0678	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005

Mitigated

	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
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0101					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0577					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	0.0678	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Milpitas Recycled Water Pipeline Extension - Cardoza Park Storage Tank and PS Santa Clara County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	0.34	User Defined Unit	0.34	14,764.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage of the site to be graded

Construction Phase - Schedule based on existing preliminary excel schedule

Off-road Equipment - Based on preliminary construction schedule - Bore/Drill Rigs assumed to have comparable emissions to pile driver

Off-road Equipment - Off-Highway Truck a surrogate for a water truck

Construction equipment based on phased equipment received in "Conveyance Construction Data.xlsx"

Off-road Equipment - Based on preliminary construction schedule

Off-road Equipment - Based on preliminary construction schedule

Trips and VMT - Estimate based on construction equipment, hauling based on 10 CY-sized truck

Demolition -

Grading - Based on anticipated dimensions of excavation site

Vehicle Trips - Based on anticipated increase in employment as a result of changes to operations. Trip length conservatively over-estimated.

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	22146	32670
tblConstructionPhase	NumDays	100.00	88.00
tblConstructionPhase	NumDays	5.00	21.00
tblConstructionPhase	NumDays	1.00	21.00
tblConstructionPhase	PhaseEndDate	3/1/2018	2/28/2018
tblConstructionPhase	PhaseStartDate	2/1/2018	1/31/2018
tblGrading	MaterialExported	0.00	11,279.00
tblGrading	MaterialImported	0.00	1,078.00
tblLandUse	LandUseSquareFeet	0.00	14,764.00
tblLandUse	LotAcreage	0.00	0.34
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	PhaseName		Construction
tblOffRoadEquipment	PhaseName		Construction
tblOffRoadEquipment	PhaseName		Site Prep
tblOffRoadEquipment	PhaseName		Construction
tblOffRoadEquipment	UsageHours	4.00	2.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripNumber	0.00	913.00
tblTripsAndVMT	VendorTripNumber	2.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	3.00
tblTripsAndVMT	WorkerTripNumber	6.00	20.00

2.0 Emissions Summary

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	lb/day										lb/day					
Area	0.3715	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		8.0000e-005
Energy	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
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.3715	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005

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	lb/day										lb/day					
Area	0.3715	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		8.0000e-005
Energy	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
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.3715	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Prep	Site Preparation	9/1/2017	9/29/2017	5	21	
2	Construction	Building Construction	9/30/2017	1/31/2018	5	88	
3	Restoration (final paving, cleaning)	Paving	1/31/2018	2/28/2018	5	21	

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
Site Prep	Cranes	1	6.00	226	0.29
Site Prep	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Construction	Air Compressors	1	2.00	78	0.48
Construction	Bore/Drill Rigs	1	1.00	205	0.50
Construction	Cranes	1	2.00	226	0.29
Construction	Excavators	1	6.00	162	0.38
Construction	Forklifts	1	2.00	89	0.20
Construction	Generator Sets	1	2.00	84	0.74
Construction	Plate Compactors	1	1.00	8	0.43
Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Construction	Welders	2	2.00	46	0.45
Restoration (final paving, cleaning)	Tractors/Loaders/Backhoes	1	6.00	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
Site Prep	2	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Construction	10	20.00	0.00	913.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Restoration (final paving, cleaning)	1	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Prep - 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	lb/day										lb/day					
Fugitive Dust					0.0837	0.0000	0.0837	0.0119	0.0000	0.0119			0.0000			0.0000
Off-Road	0.7236	8.0527	3.8626	6.5600e-003		0.4289	0.4289		0.3946	0.3946		671.6272	671.6272	0.2058		675.9487
Total	0.7236	8.0527	3.8626	6.5600e-003	0.0837	0.4289	0.5126	0.0119	0.3946	0.4065		671.6272	671.6272	0.2058		675.9487

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	lb/day										lb/day					
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
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
Worker	0.0107	0.0154	0.1403	3.1000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.7000e-003		25.2023	25.2023	1.3000e-003		25.2295
Total	0.0107	0.0154	0.1403	3.1000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.7000e-003		25.2023	25.2023	1.3000e-003		25.2295

3.2 Site Prep - 2017

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	lb/day										lb/day					
Fugitive Dust					0.0837	0.0000	0.0837	0.0119	0.0000	0.0119			0.0000			0.0000
Off-Road	0.7236	8.0527	3.8626	6.5600e-003		0.4289	0.4289		0.3946	0.3946	0.0000	671.6272	671.6272	0.2058		675.9487
Total	0.7236	8.0527	3.8626	6.5600e-003	0.0837	0.4289	0.5126	0.0119	0.3946	0.4065	0.0000	671.6272	671.6272	0.2058		675.9487

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	lb/day										lb/day					
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
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
Worker	0.0107	0.0154	0.1403	3.1000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.7000e-003		25.2023	25.2023	1.3000e-003		25.2295
Total	0.0107	0.0154	0.1403	3.1000e-004	0.0283	2.1000e-004	0.0285	7.5000e-003	1.9000e-004	7.7000e-003		25.2023	25.2023	1.3000e-003		25.2295

3.3 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	lb/day										lb/day					
Off-Road	1.2719	10.9914	8.1603	0.0132		0.6577	0.6577		0.6209	0.6209		1,297.3040	1,297.3040	0.3333		1,304.3039
Total	1.2719	10.9914	8.1603	0.0132		0.6577	0.6577		0.6209	0.6209		1,297.3040	1,297.3040	0.3333		1,304.3039

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	lb/day										lb/day					
Hauling	0.2165	2.8173	2.6358	7.7600e-003	0.2293	0.0356	0.2649	0.0614	0.0328	0.0942		769.1278	769.1278	5.6400e-003		769.2463
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
Worker	0.0716	0.1023	0.9353	2.0800e-003	0.1886	1.3900e-003	0.1900	0.0500	1.2800e-003	0.0513		168.0152	168.0152	8.6400e-003		168.1965
Total	0.2881	2.9196	3.5711	9.8400e-003	0.4179	0.0370	0.4549	0.1114	0.0340	0.1455		937.1429	937.1429	0.0143		937.4428

3.3 Construction - 2017

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	lb/day										lb/day					
Off-Road	1.2719	10.9914	8.1603	0.0132		0.6577	0.6577		0.6209	0.6209	0.0000	1,297.3040	1,297.3040	0.3333		1,304.3039
Total	1.2719	10.9914	8.1603	0.0132		0.6577	0.6577		0.6209	0.6209	0.0000	1,297.3040	1,297.3040	0.3333		1,304.3039

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	lb/day										lb/day					
Hauling	0.2165	2.8173	2.6358	7.7600e-003	0.2293	0.0356	0.2649	0.0614	0.0328	0.0942		769.1278	769.1278	5.6400e-003		769.2463
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
Worker	0.0716	0.1023	0.9353	2.0800e-003	0.1886	1.3900e-003	0.1900	0.0500	1.2800e-003	0.0513		168.0152	168.0152	8.6400e-003		168.1965
Total	0.2881	2.9196	3.5711	9.8400e-003	0.4179	0.0370	0.4549	0.1114	0.0340	0.1455		937.1429	937.1429	0.0143		937.4428

3.3 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	lb/day										lb/day					
Off-Road	1.0928	9.4708	7.9443	0.0132		0.5462	0.5462		0.5164	0.5164		1,281.7125	1,281.7125	0.3282		1,288.6043
Total	1.0928	9.4708	7.9443	0.0132		0.5462	0.5462		0.5164	0.5164		1,281.7125	1,281.7125	0.3282		1,288.6043

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	lb/day										lb/day					
Hauling	0.2018	2.5603	2.5492	7.7500e-003	0.5684	0.0352	0.6036	0.1446	0.0324	0.1770		755.9094	755.9094	5.6700e-003		756.0286
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
Worker	0.0642	0.0921	0.8362	2.0800e-003	0.1886	1.3500e-003	0.1900	0.0500	1.2400e-003	0.0513		161.7569	161.7569	7.9400e-003		161.9236
Total	0.2660	2.6524	3.3854	9.8300e-003	0.7570	0.0366	0.7936	0.1947	0.0336	0.2283		917.6663	917.6663	0.0136		917.9521

3.3 Construction - 2018

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	lb/day										lb/day					
Off-Road	1.0928	9.4708	7.9443	0.0132		0.5462	0.5462		0.5164	0.5164	0.0000	1,281.7125	1,281.7125	0.3282		1,288.6043
Total	1.0928	9.4708	7.9443	0.0132		0.5462	0.5462		0.5164	0.5164	0.0000	1,281.7125	1,281.7125	0.3282		1,288.6043

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	lb/day										lb/day					
Hauling	0.2018	2.5603	2.5492	7.7500e-003	0.5684	0.0352	0.6036	0.1446	0.0324	0.1770		755.9094	755.9094	5.6700e-003		756.0286
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
Worker	0.0642	0.0921	0.8362	2.0800e-003	0.1886	1.3500e-003	0.1900	0.0500	1.2400e-003	0.0513		161.7569	161.7569	7.9400e-003		161.9236
Total	0.2660	2.6524	3.3854	9.8300e-003	0.7570	0.0366	0.7936	0.1947	0.0336	0.2283		917.6663	917.6663	0.0136		917.9521

3.4 Restoration (final paving, cleaning) - 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	lb/day										lb/day					
Off-Road	0.1996	1.9723	1.7525	2.3300e-003		0.1397	0.1397		0.1286	0.1286		234.5820	234.5820	0.0730		236.1156
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.1996	1.9723	1.7525	2.3300e-003		0.1397	0.1397		0.1286	0.1286		234.5820	234.5820	0.0730		236.1156

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	lb/day										lb/day					
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
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
Worker	9.6200e-003	0.0138	0.1254	3.1000e-004	0.0283	2.0000e-004	0.0285	7.5000e-003	1.9000e-004	7.6900e-003		24.2635	24.2635	1.1900e-003		24.2885
Total	9.6200e-003	0.0138	0.1254	3.1000e-004	0.0283	2.0000e-004	0.0285	7.5000e-003	1.9000e-004	7.6900e-003		24.2635	24.2635	1.1900e-003		24.2885

3.4 Restoration (final paving, cleaning) - 2018

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	lb/day										lb/day					
Off-Road	0.1996	1.9723	1.7525	2.3300e-003		0.1397	0.1397		0.1286	0.1286	0.0000	234.5820	234.5820	0.0730		236.1156
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.1996	1.9723	1.7525	2.3300e-003		0.1397	0.1397		0.1286	0.1286	0.0000	234.5820	234.5820	0.0730		236.1156

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	lb/day										lb/day					
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
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
Worker	9.6200e-003	0.0138	0.1254	3.1000e-004	0.0283	2.0000e-004	0.0285	7.5000e-003	1.9000e-004	7.6900e-003		24.2635	24.2635	1.1900e-003		24.2885
Total	9.6200e-003	0.0138	0.1254	3.1000e-004	0.0283	2.0000e-004	0.0285	7.5000e-003	1.9000e-004	7.6900e-003		24.2635	24.2635	1.1900e-003		24.2885

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	lb/day										lb/day					
Mitigated	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
Unmitigated	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

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.551461	0.058468	0.185554	0.123211	0.029507	0.004440	0.012712	0.023230	0.001775	0.001270	0.006089	0.000516	0.001766

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	lb/day										lb/day					
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	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	lb/day										lb/day					
Mitigated	0.3715	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		8.0000e-005
Unmitigated	0.3715	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		8.0000e-005

6.2 Area by SubCategory

Unmitigated

	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
SubCategory	lb/day										lb/day					
Consumer Products	0.3160					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		8.0000e-005
Architectural Coating	0.0556					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.3715	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		8.0000e-005

Mitigated

	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
SubCategory	lb/day										lb/day					
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		8.0000e-005
Architectural Coating	0.0556					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3160					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.3715	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		7.0000e-005	7.0000e-005	0.0000		8.0000e-005

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Milpitas Recycled Water Pipeline Extension - Generic PS (1 of 3)
Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	0.01	User Defined Unit	0.01	200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage of the site to be graded

Construction Phase - Schedule based on existing preliminary excel schedule

Off-road Equipment - Based on preliminary construction schedule - Bore/Drill Rigs assumed to have comparable emissions to pile driver

Off-road Equipment - Off-Highway Truck a surrogate for a water truck

Construction equipment based on phased equipment received in "Conveyance Construction Data.xlsx"

Off-road Equipment - Based on preliminary construction schedule

Off-road Equipment - Based on preliminary construction schedule

Trips and VMT - Estimate based on construction equipment, hauling based on 10 CY-sized truck

Demolition -

Grading - Based on anticipated dimensions of excavation site

Vehicle Trips - Based on anticipated increase in employment as a result of changes to operations. Trip length conservatively over-estimated.

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	300	32670
tblConstructionPhase	NumDays	100.00	40.00
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	NumDays	1.00	10.00
tblGrading	MaterialExported	0.00	15.00
tblGrading	MaterialImported	0.00	7.50
tblLandUse	LandUseSquareFeet	0.00	200.00
tblLandUse	LotAcreage	0.00	0.01
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Construction
tblOffRoadEquipment	PhaseName		Construction
tblOffRoadEquipment	PhaseName		Site Prep
tblOffRoadEquipment	PhaseName		Construction
tblOffRoadEquipment	PhaseName		Restoration (final paving, cleaning)
tblOffRoadEquipment	PhaseName		Construction
tblOffRoadEquipment	PhaseName		Construction
tblOffRoadEquipment	PhaseName		Construction
tblOffRoadEquipment	UsageHours	4.00	6.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripNumber	0.00	913.00
tblTripsAndVMT	WorkerTripNumber	0.00	15.00
tblTripsAndVMT	WorkerTripNumber	5.00	3.00

2.0 Emissions Summary

2.2 Overall Operational

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	8.3900e-003	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
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	8.3900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Prep	Site Preparation	11/1/2018	11/14/2018	5	10	
2	Construction	Building Construction	11/15/2018	1/9/2019	5	40	
3	Restoration (final paving, cleaning)	Paving	1/10/2019	1/23/2019	5	10	

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
Site Prep	Cranes	1	4.00	226	0.29
Site Prep	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Construction	Air Compressors	1	2.00	78	0.48
Construction	Bore/Drill Rigs	1	1.00	205	0.50
Construction	Cranes	1	6.00	226	0.29
Construction	Excavators	1	2.00	162	0.38
Construction	Forklifts	1	2.00	89	0.20
Construction	Generator Sets	1	2.00	84	0.74
Construction	Plate Compactors	1	2.00	8	0.43
Construction	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Construction	Welders	1	2.00	46	0.45
Restoration (final paving, cleaning)	Excavators	1	4.00	162	0.38
Restoration (final paving, cleaning)	Tractors/Loaders/Backhoes	1	4.00	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
Site Prep	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Construction	9	15.00	0.00	913.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Restoration (final paving, cleaning)	2	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Prep - 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					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	2.0600e-003	0.0233	0.0120	2.0000e-005		1.1900e-003	1.1900e-003		1.0900e-003	1.0900e-003	0.0000	1.9976	1.9976	6.2000e-004	0.0000	2.0107
Total	2.0600e-003	0.0233	0.0120	2.0000e-005	0.0000	1.1900e-003	1.1900e-003	0.0000	1.0900e-003	1.0900e-003	0.0000	1.9976	1.9976	6.2000e-004	0.0000	2.0107

3.2 Site Prep - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	1.1000e-004	1.0200e-003	0.0000	2.3000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1857	0.1857	1.0000e-005	0.0000	0.1859
Total	7.0000e-005	1.1000e-004	1.0200e-003	0.0000	2.3000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1857	0.1857	1.0000e-005	0.0000	0.1859

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	2.0600e-003	0.0233	0.0120	2.0000e-005		1.1900e-003	1.1900e-003		1.0900e-003	1.0900e-003	0.0000	1.9976	1.9976	6.2000e-004	0.0000	2.0107
Total	2.0600e-003	0.0233	0.0120	2.0000e-005	0.0000	1.1900e-003	1.1900e-003	0.0000	1.0900e-003	1.0900e-003	0.0000	1.9976	1.9976	6.2000e-004	0.0000	2.0107

3.2 Site Prep - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	1.1000e-004	1.0200e-003	0.0000	2.3000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1857	0.1857	1.0000e-005	0.0000	0.1859
Total	7.0000e-005	1.1000e-004	1.0200e-003	0.0000	2.3000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1857	0.1857	1.0000e-005	0.0000	0.1859

3.3 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	0.0163	0.1570	0.0972	1.8000e-004		8.1400e-003	8.1400e-003		7.6800e-003	7.6800e-003	0.0000	16.3967	16.3967	4.1200e-003	0.0000	16.4833
Total	0.0163	0.1570	0.0972	1.8000e-004		8.1400e-003	8.1400e-003		7.6800e-003	7.6800e-003	0.0000	16.3967	16.3967	4.1200e-003	0.0000	16.4833

3.3 Construction - 2018

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	6.9000e-003	0.0915	0.0788	2.8000e-004	7.3800e-003	1.2800e-003	8.6500e-003	2.0000e-003	1.1700e-003	3.1700e-003	0.0000	24.9266	24.9266	1.9000e-004	0.0000	24.9305
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	7.4000e-004	1.0500e-003	0.0101	3.0000e-005	2.2500e-003	2.0000e-005	2.2700e-003	6.0000e-004	2.0000e-005	6.1000e-004	0.0000	1.8385	1.8385	9.0000e-005	0.0000	1.8404
Total	7.6400e-003	0.0926	0.0889	3.1000e-004	9.6300e-003	1.3000e-003	0.0109	2.6000e-003	1.1900e-003	3.7800e-003	0.0000	26.7652	26.7652	2.8000e-004	0.0000	26.7709

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	0.0163	0.1570	0.0972	1.8000e-004		8.1400e-003	8.1400e-003		7.6800e-003	7.6800e-003	0.0000	16.3967	16.3967	4.1200e-003	0.0000	16.4833
Total	0.0163	0.1570	0.0972	1.8000e-004		8.1400e-003	8.1400e-003		7.6800e-003	7.6800e-003	0.0000	16.3967	16.3967	4.1200e-003	0.0000	16.4833

3.3 Construction - 2018

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	6.9000e-003	0.0915	0.0788	2.8000e-004	7.3800e-003	1.2800e-003	8.6500e-003	2.0000e-003	1.1700e-003	3.1700e-003	0.0000	24.9266	24.9266	1.9000e-004	0.0000	24.9305
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	7.4000e-004	1.0500e-003	0.0101	3.0000e-005	2.2500e-003	2.0000e-005	2.2700e-003	6.0000e-004	2.0000e-005	6.1000e-004	0.0000	1.8385	1.8385	9.0000e-005	0.0000	1.8404
Total	7.6400e-003	0.0926	0.0889	3.1000e-004	9.6300e-003	1.3000e-003	0.0109	2.6000e-003	1.1900e-003	3.7800e-003	0.0000	26.7652	26.7652	2.8000e-004	0.0000	26.7709

3.3 Construction - 2019

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	3.0600e-003	0.0297	0.0199	4.0000e-005		1.4900e-003	1.4900e-003		1.4100e-003	1.4100e-003	0.0000	3.4369	3.4369	8.6000e-004	0.0000	3.4551
Total	3.0600e-003	0.0297	0.0199	4.0000e-005		1.4900e-003	1.4900e-003		1.4100e-003	1.4100e-003	0.0000	3.4369	3.4369	8.6000e-004	0.0000	3.4551

3.3 Construction - 2019

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	1.3700e-003	0.0179	0.0161	6.0000e-005	6.1300e-003	2.7000e-004	6.4000e-003	1.5400e-003	2.5000e-004	1.7900e-003	0.0000	5.1972	5.1972	4.0000e-005	0.0000	5.1980
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	2.0000e-004	1.9500e-003	1.0000e-005	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3759	0.3759	2.0000e-005	0.0000	0.3763
Total	1.5100e-003	0.0181	0.0181	7.0000e-005	6.6100e-003	2.7000e-004	6.8800e-003	1.6700e-003	2.5000e-004	1.9200e-003	0.0000	5.5731	5.5731	6.0000e-005	0.0000	5.5743

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	3.0600e-003	0.0297	0.0199	4.0000e-005		1.4900e-003	1.4900e-003		1.4100e-003	1.4100e-003	0.0000	3.4369	3.4369	8.6000e-004	0.0000	3.4550
Total	3.0600e-003	0.0297	0.0199	4.0000e-005		1.4900e-003	1.4900e-003		1.4100e-003	1.4100e-003	0.0000	3.4369	3.4369	8.6000e-004	0.0000	3.4550

3.3 Construction - 2019

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	1.3700e-003	0.0179	0.0161	6.0000e-005	6.1300e-003	2.7000e-004	6.4000e-003	1.5400e-003	2.5000e-004	1.7900e-003	0.0000	5.1972	5.1972	4.0000e-005	0.0000	5.1980
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	2.0000e-004	1.9500e-003	1.0000e-005	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3759	0.3759	2.0000e-005	0.0000	0.3763
Total	1.5100e-003	0.0181	0.0181	7.0000e-005	6.6100e-003	2.7000e-004	6.8800e-003	1.6700e-003	2.5000e-004	1.9200e-003	0.0000	5.5731	5.5731	6.0000e-005	0.0000	5.5743

3.4 Restoration (final paving, cleaning) - 2019

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	1.2500e-003	0.0127	0.0141	2.0000e-005		7.2000e-004	7.2000e-004		6.6000e-004	6.6000e-004	0.0000	1.8861	1.8861	6.0000e-004	0.0000	1.8986
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.2500e-003	0.0127	0.0141	2.0000e-005		7.2000e-004	7.2000e-004		6.6000e-004	6.6000e-004	0.0000	1.8861	1.8861	6.0000e-004	0.0000	1.8986

3.4 Restoration (final paving, cleaning) - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	6.0000e-005	5.6000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1074	0.1074	1.0000e-005	0.0000	0.1075
Total	4.0000e-005	6.0000e-005	5.6000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1074	0.1074	1.0000e-005	0.0000	0.1075

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	1.2500e-003	0.0127	0.0141	2.0000e-005		7.2000e-004	7.2000e-004		6.6000e-004	6.6000e-004	0.0000	1.8861	1.8861	6.0000e-004	0.0000	1.8986
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	1.2500e-003	0.0127	0.0141	2.0000e-005		7.2000e-004	7.2000e-004		6.6000e-004	6.6000e-004	0.0000	1.8861	1.8861	6.0000e-004	0.0000	1.8986

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.551461	0.058468	0.185554	0.123211	0.029507	0.004440	0.012712	0.023230	0.001775	0.001270	0.006089	0.000516	0.001766

5.0 Energy Detail

~~4.4 Fleet Mix~~

Historical Energy Use: N

5.1 Mitigation Measures Energy

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000							

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	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
SubCategory	tons/yr										MT/yr					
Architectural Coating	7.6100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	8.3900e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000							

Mitigated

	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
SubCategory	tons/yr										MT/yr					
Architectural Coating	7.6100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	8.3900e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000							

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Milpitas Recycled Water Pipeline Extension - Generic PS (1 of 3)
Santa Clara County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	0.01	User Defined Unit	0.01	200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage of the site to be graded

Construction Phase - Schedule based on existing preliminary excel schedule

Off-road Equipment - Based on preliminary construction schedule - Bore/Drill Rigs assumed to have comparable emissions to pile driver

Off-road Equipment - Off-Highway Truck a surrogate for a water truck

Construction equipment based on phased equipment received in "Conveyance Construction Data.xlsx"

Off-road Equipment - Based on preliminary construction schedule

Off-road Equipment - Based on preliminary construction schedule

Trips and VMT - Estimate based on construction equipment, hauling based on 10 CY-sized truck

Demolition -

Grading - Based on anticipated dimensions of excavation site

Vehicle Trips - Based on anticipated increase in employment as a result of changes to operations. Trip length conservatively over-estimated.

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	300	32670
tblConstructionPhase	NumDays	100.00	40.00
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	NumDays	1.00	10.00
tblGrading	MaterialExported	0.00	15.00
tblGrading	MaterialImported	0.00	7.50
tblLandUse	LandUseSquareFeet	0.00	200.00
tblLandUse	LotAcreage	0.00	0.01
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Construction
tblOffRoadEquipment	PhaseName		Construction
tblOffRoadEquipment	PhaseName		Site Prep
tblOffRoadEquipment	PhaseName		Construction
tblOffRoadEquipment	PhaseName		Restoration (final paving, cleaning)
tblOffRoadEquipment	PhaseName		Construction
tblOffRoadEquipment	PhaseName		Construction
tblOffRoadEquipment	PhaseName		Construction
tblOffRoadEquipment	UsageHours	4.00	6.00
tblOffRoadEquipment	UsageHours	6.00	2.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripNumber	0.00	913.00
tblTripsAndVMT	WorkerTripNumber	0.00	15.00
tblTripsAndVMT	WorkerTripNumber	5.00	3.00

2.0 Emissions Summary

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	lb/day										lb/day					
Area	0.0460	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	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
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0460	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000						

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	lb/day										lb/day					
Area	0.0460	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	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
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0460	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000						

	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
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Prep	Site Preparation	11/1/2018	11/14/2018	5	10	
2	Construction	Building Construction	11/15/2018	1/9/2019	5	40	
3	Restoration (final paving, cleaning)	Paving	1/10/2019	1/23/2019	5	10	

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
Site Prep	Cranes	1	4.00	226	0.29
Site Prep	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Construction	Air Compressors	1	2.00	78	0.48
Construction	Bore/Drill Rigs	1	1.00	205	0.50
Construction	Cranes	1	6.00	226	0.29
Construction	Excavators	1	2.00	162	0.38
Construction	Forklifts	1	2.00	89	0.20
Construction	Generator Sets	1	2.00	84	0.74
Construction	Plate Compactors	1	2.00	8	0.43
Construction	Tractors/Loaders/Backhoes	1	2.00	97	0.37
Construction	Welders	1	2.00	46	0.45
Restoration (final paving, cleaning)	Excavators	1	4.00	162	0.38
Restoration (final paving, cleaning)	Tractors/Loaders/Backhoes	1	4.00	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
Site Prep	2	5.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Construction	9	15.00	0.00	913.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Restoration (final paving, cleaning)	2	3.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Prep - 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	lb/day										lb/day					
Fugitive Dust					7.8000e-004	0.0000	7.8000e-004	1.0000e-004	0.0000	1.0000e-004			0.0000			0.0000
Off-Road	0.4122	4.6514	2.4020	4.3700e-003		0.2376	0.2376		0.2186	0.2186		440.4034	440.4034	0.1371		443.2826
Total	0.4122	4.6514	2.4020	4.3700e-003	7.8000e-004	0.2376	0.2383	1.0000e-004	0.2186	0.2187		440.4034	440.4034	0.1371		443.2826

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	lb/day										lb/day					
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
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
Worker	0.0160	0.0230	0.2091	5.2000e-004	0.0472	3.4000e-004	0.0475	0.0125	3.1000e-004	0.0128		40.4392	40.4392	1.9800e-003		40.4809
Total	0.0160	0.0230	0.2091	5.2000e-004	0.0472	3.4000e-004	0.0475	0.0125	3.1000e-004	0.0128		40.4392	40.4392	1.9800e-003		40.4809

3.2 Site Prep - 2018

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	lb/day										lb/day					
Fugitive Dust					7.8000e-004	0.0000	7.8000e-004	1.0000e-004	0.0000	1.0000e-004			0.0000			0.0000
Off-Road	0.4122	4.6514	2.4020	4.3700e-003		0.2376	0.2376		0.2186	0.2186	0.0000	440.4034	440.4034	0.1371		443.2826
Total	0.4122	4.6514	2.4020	4.3700e-003	7.8000e-004	0.2376	0.2383	1.0000e-004	0.2186	0.2187	0.0000	440.4034	440.4034	0.1371		443.2826

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	lb/day										lb/day					
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
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
Worker	0.0160	0.0230	0.2091	5.2000e-004	0.0472	3.4000e-004	0.0475	0.0125	3.1000e-004	0.0128		40.4392	40.4392	1.9800e-003		40.4809
Total	0.0160	0.0230	0.2091	5.2000e-004	0.0472	3.4000e-004	0.0475	0.0125	3.1000e-004	0.0128		40.4392	40.4392	1.9800e-003		40.4809

3.3 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	lb/day										lb/day					
Off-Road	0.9852	9.5163	5.8919	0.0112		0.4934	0.4934		0.4656	0.4656		1,095.4109	1,095.4109	0.2755		1,101.1961
Total	0.9852	9.5163	5.8919	0.0112		0.4934	0.4934		0.4656	0.4656		1,095.4109	1,095.4109	0.2755		1,101.1961

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	lb/day										lb/day					
Hauling	0.4440	5.6327	5.6081	0.0171	0.4616	0.0775	0.5391	0.1246	0.0713	0.1959		1,663.0008	1,663.0008	0.0125		1,663.2629
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
Worker	0.0481	0.0691	0.6272	1.5600e-003	0.1415	1.0100e-003	0.1425	0.0375	9.3000e-004	0.0385		121.3177	121.3177	5.9500e-003		121.4427
Total	0.4922	5.7018	6.2353	0.0186	0.6031	0.0785	0.6816	0.1621	0.0722	0.2343		1,784.3184	1,784.3184	0.0184		1,784.7055

3.3 Construction - 2018

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	lb/day										lb/day					
Off-Road	0.9852	9.5163	5.8919	0.0112		0.4934	0.4934		0.4656	0.4656	0.0000	1,095.4109	1,095.4109	0.2755		1,101.1961
Total	0.9852	9.5163	5.8919	0.0112		0.4934	0.4934		0.4656	0.4656	0.0000	1,095.4109	1,095.4109	0.2755		1,101.1961

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	lb/day										lb/day					
Hauling	0.4440	5.6327	5.6081	0.0171	0.4616	0.0775	0.5391	0.1246	0.0713	0.1959		1,663.0008	1,663.0008	0.0125		1,663.2629
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
Worker	0.0481	0.0691	0.6272	1.5600e-003	0.1415	1.0100e-003	0.1425	0.0375	9.3000e-004	0.0385		121.3177	121.3177	5.9500e-003		121.4427
Total	0.4922	5.7018	6.2353	0.0186	0.6031	0.0785	0.6816	0.1621	0.0722	0.2343		1,784.3184	1,784.3184	0.0184		1,784.7055

3.3 Construction - 2019**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	lb/day										lb/day					
Off-Road	0.8734	8.4898	5.6819	0.0112		0.4256	0.4256		0.4016	0.4016		1,082.4469	1,082.4469	0.2717		1,088.1532
Total	0.8734	8.4898	5.6819	0.0112		0.4256	0.4256		0.4016	0.4016		1,082.4469	1,082.4469	0.2717		1,088.1532

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	lb/day										lb/day					
Hauling	0.4137	5.1856	5.4543	0.0170	1.8203	0.0765	1.8967	0.4581	0.0704	0.5284		1,634.6068	1,634.6068	0.0124		1,634.8678
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
Worker	0.0439	0.0629	0.5684	1.5600e-003	0.1415	9.9000e-004	0.1424	0.0375	9.2000e-004	0.0384		116.9463	116.9463	5.5300e-003		117.0624
Total	0.4576	5.2485	6.0227	0.0186	1.9617	0.0775	2.0392	0.4956	0.0713	0.5668		1,751.5531	1,751.5531	0.0180		1,751.9303

3.3 Construction - 2019

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	lb/day										lb/day					
Off-Road	0.8734	8.4898	5.6819	0.0112		0.4256	0.4256		0.4016	0.4016	0.0000	1,082.4469	1,082.4469	0.2717		1,088.1532
Total	0.8734	8.4898	5.6819	0.0112		0.4256	0.4256		0.4016	0.4016	0.0000	1,082.4469	1,082.4469	0.2717		1,088.1532

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	lb/day										lb/day					
Hauling	0.4137	5.1856	5.4543	0.0170	1.8203	0.0765	1.8967	0.4581	0.0704	0.5284		1,634.6068	1,634.6068	0.0124		1,634.8678
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
Worker	0.0439	0.0629	0.5684	1.5600e-003	0.1415	9.9000e-004	0.1424	0.0375	9.2000e-004	0.0384		116.9463	116.9463	5.5300e-003		117.0624
Total	0.4576	5.2485	6.0227	0.0186	1.9617	0.0775	2.0392	0.4956	0.0713	0.5668		1,751.5531	1,751.5531	0.0180		1,751.9303

3.4 Restoration (final paving, cleaning) - 2019

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	lb/day										lb/day					
Off-Road	0.2501	2.5436	2.8243	4.2000e-003		0.1443	0.1443		0.1328	0.1328		415.8037	415.8037	0.1316		418.5663
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2501	2.5436	2.8243	4.2000e-003		0.1443	0.1443		0.1328	0.1328		415.8037	415.8037	0.1316		418.5663

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	lb/day										lb/day					
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
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
Worker	8.7800e-003	0.0126	0.1137	3.1000e-004	0.0283	2.0000e-004	0.0285	7.5000e-003	1.8000e-004	7.6900e-003		23.3893	23.3893	1.1100e-003		23.4125
Total	8.7800e-003	0.0126	0.1137	3.1000e-004	0.0283	2.0000e-004	0.0285	7.5000e-003	1.8000e-004	7.6900e-003		23.3893	23.3893	1.1100e-003		23.4125

3.4 Restoration (final paving, cleaning) - 2019

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	lb/day										lb/day					
Off-Road	0.2501	2.5436	2.8243	4.2000e-003		0.1443	0.1443		0.1328	0.1328	0.0000	415.8037	415.8037	0.1316		418.5663
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.2501	2.5436	2.8243	4.2000e-003		0.1443	0.1443		0.1328	0.1328	0.0000	415.8037	415.8037	0.1316		418.5663

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	lb/day										lb/day					
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
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
Worker	8.7800e-003	0.0126	0.1137	3.1000e-004	0.0283	2.0000e-004	0.0285	7.5000e-003	1.8000e-004	7.6900e-003		23.3893	23.3893	1.1100e-003		23.4125
Total	8.7800e-003	0.0126	0.1137	3.1000e-004	0.0283	2.0000e-004	0.0285	7.5000e-003	1.8000e-004	7.6900e-003		23.3893	23.3893	1.1100e-003		23.4125

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	lb/day										lb/day					
Mitigated	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
Unmitigated	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

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.551461	0.058468	0.185554	0.123211	0.029507	0.004440	0.012712	0.023230	0.001775	0.001270	0.006089	0.000516	0.001766

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	lb/day										lb/day					
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	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	lb/day										lb/day					
Mitigated	0.0460	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0460	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

6.2 Area by SubCategory

Unmitigated

	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
SubCategory	lb/day										lb/day					
Architectural Coating	0.0417					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.2800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0460	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Mitigated

	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
SubCategory	lb/day										lb/day					
Architectural Coating	0.0417					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.2800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0460	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Milpitas WaterReuse Pipeline Segment1				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	CO2 (lbs/day)
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	0.5	2.9	4.6	3.3	0.2	3.1	0.8	0.2	0.6	792.3
Grading/Excavation	2.3	15.2	23.7	4.4	1.3	3.1	1.7	1.1	0.6	4,714.0
Drainage/Utilities/Sub-Grade	-	-	-	-	-	-	-	-	-	-
Paving	1.9	13.2	14.3	0.9	0.9	-	0.8	0.8	-	2,333.3
Maximum (pounds/day)	2.3	15.2	23.7	4.4	1.3	3.1	1.7	1.1	0.6	4,714.0
Total (tons/construction project)	0.3	1.8	2.7	0.4	0.1	0.2	0.2	0.1	0.1	509.3

Notes: Project Start Year -> 2017
 Project Length (months) -> 13
 Total Project Area (acres) -> 11
 Maximum Area Disturbed/Day (acres) -> 0
 Total Soil Imported/Exported (yd³/day)-> 112

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Milpitas WaterReuse Pipeline Segment1				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	CO2 (kgs/day)
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	0.2	1.3	2.1	1.5	0.1	1.4	0.4	0.1	0.3	360.1
Grading/Excavation	1.0	6.9	10.8	2.0	0.6	1.4	0.8	0.5	0.3	2,142.7
Drainage/Utilities/Sub-Grade	-	-	-	-	-	-	-	-	-	-
Paving	0.9	6.0	6.5	0.4	0.4	-	0.4	0.4	-	1,060.6
Maximum (kilograms/day)	1.0	6.9	10.8	2.0	0.6	1.4	0.8	0.5	0.3	2,142.7
Total (megagrams/construction project)	0.2	1.7	2.4	0.4	0.1	0.2	0.2	0.1	0.0	461.9

Notes: Project Start Year -> 2017
 Project Length (months) -> 13
 Total Project Area (hectares) -> 4
 Maximum Area Disturbed/Day (hectares) -> 0
 Total Soil Imported/Exported (meters³/day)-> 85

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Milpitas WaterReuse Pipeline Segment2				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	CO2 (lbs/day)
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	0.4	2.5	4.6	3.3	0.2	3.1	0.8	0.2	0.6	693.5
Grading/Excavation	2.2	14.7	22.4	4.4	1.3	3.1	1.7	1.1	0.6	4,324.0
Drainage/Utilities/Sub-Grade	-	-	-	-	-	-	-	-	-	-
Paving	2.0	12.9	14.9	0.9	0.9	-	0.8	0.8	-	2,234.6
Maximum (pounds/day)	2.2	14.7	22.4	4.4	1.3	3.1	1.7	1.1	0.6	4,324.0
Total (tons/construction project)	0.2	1.4	2.1	0.3	0.1	0.2	0.1	0.1	0.0	389.7

Notes: Project Start Year -> 2017
 Project Length (months) -> 10
 Total Project Area (acres) -> 5
 Maximum Area Disturbed/Day (acres) -> 0
 Total Soil Imported/Exported (yd³/day)-> 94

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Milpitas WaterReuse Pipeline Segment2				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	CO2 (kgs/day)
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	0.2	1.1	2.1	1.5	0.1	1.4	0.4	0.1	0.3	315.2
Grading/Excavation	1.0	6.7	10.2	2.0	0.6	1.4	0.8	0.5	0.3	1,965.5
Drainage/Utilities/Sub-Grade	-	-	-	-	-	-	-	-	-	-
Paving	0.9	5.9	6.8	0.4	0.4	-	0.4	0.4	-	1,015.7
Maximum (kilograms/day)	1.0	6.7	10.2	2.0	0.6	1.4	0.8	0.5	0.3	1,965.5
Total (megagrams/construction project)	0.2	1.3	1.9	0.3	0.1	0.2	0.1	0.1	0.0	353.5

Notes: Project Start Year -> 2017
 Project Length (months) -> 10
 Total Project Area (hectares) -> 2
 Maximum Area Disturbed/Day (hectares) -> 0
 Total Soil Imported/Exported (meters³/day)-> 72

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Milpitas WaterReuse Pipeline Segment3				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	CO2 (lbs/day)
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	0.5	2.7	4.6	3.3	0.2	3.1	0.8	0.2	0.6	742.9
Grading/Excavation	2.2	14.9	22.4	4.4	1.3	3.1	1.7	1.1	0.6	4,373.4
Drainage/Utilities/Sub-Grade	-	-	-	-	-	-	-	-	-	-
Paving	2.0	13.1	14.9	0.9	0.9	-	0.8	0.8	-	2,284.0
Maximum (pounds/day)	2.2	14.9	22.4	4.4	1.3	3.1	1.7	1.1	0.6	4,373.4
Total (tons/construction project)	0.2	1.5	2.1	0.3	0.1	0.2	0.1	0.1	0.0	395.2

Notes: Project Start Year -> 2017
 Project Length (months) -> 10
 Total Project Area (acres) -> 8
 Maximum Area Disturbed/Day (acres) -> 0
 Total Soil Imported/Exported (yd³/day)-> 94

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Milpitas WaterReuse Pipeline Segment3				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	CO2 (kgs/day)
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	0.2	1.2	2.1	1.5	0.1	1.4	0.4	0.1	0.3	337.7
Grading/Excavation	1.0	6.8	10.2	2.0	0.6	1.4	0.8	0.5	0.3	1,987.9
Drainage/Utilities/Sub-Grade	-	-	-	-	-	-	-	-	-	-
Paving	0.9	5.9	6.8	0.4	0.4	-	0.4	0.4	-	1,038.2
Maximum (kilograms/day)	1.0	6.8	10.2	2.0	0.6	1.4	0.8	0.5	0.3	1,987.9
Total (megagrams/construction project)	0.2	1.3	1.9	0.3	0.1	0.2	0.1	0.1	0.0	358.4

Notes: Project Start Year -> 2017
 Project Length (months) -> 10
 Total Project Area (hectares) -> 3
 Maximum Area Disturbed/Day (hectares) -> 0
 Total Soil Imported/Exported (meters³/day)-> 72

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Milpitas WaterReuse Pipeline Segment4				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	CO2 (lbs/day)
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	0.4	3.5	3.6	3.3	0.2	3.1	0.8	0.1	0.6	1,031.6
Grading/Excavation	1.9	15.2	17.9	4.1	1.0	3.1	1.5	0.8	0.6	4,609.4
Drainage/Utilities/Sub-Grade	-	-	-	-	-	-	-	-	-	-
Paving	1.6	13.5	11.4	0.7	0.7	-	0.6	0.6	-	2,576.1
Maximum (pounds/day)	1.9	15.2	17.9	4.1	1.0	3.1	1.5	0.8	0.6	4,609.4
Total (tons/construction project)	0.2	1.9	2.0	0.4	0.1	0.2	0.1	0.1	0.1	513.3

Notes: Project Start Year -> 2019
 Project Length (months) -> 13
 Total Project Area (acres) -> 24
 Maximum Area Disturbed/Day (acres) -> 0
 Total Soil Imported/Exported (yd³/day)-> 107

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Milpitas WaterReuse Pipeline Segment4				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	CO2 (kgs/day)
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	0.2	1.6	1.7	1.5	0.1	1.4	0.4	0.1	0.3	468.9
Grading/Excavation	0.9	6.9	8.1	1.9	0.5	1.4	0.7	0.4	0.3	2,095.2
Drainage/Utilities/Sub-Grade	-	-	-	-	-	-	-	-	-	-
Paving	0.7	6.1	5.2	0.3	0.3	-	0.3	0.3	-	1,170.9
Maximum (kilograms/day)	0.9	6.9	8.1	1.9	0.5	1.4	0.7	0.4	0.3	2,095.2
Total (megagrams/construction project)	0.2	1.7	1.8	0.3	0.1	0.2	0.1	0.1	0.0	465.6

Notes: Project Start Year -> 2019
 Project Length (months) -> 13
 Total Project Area (hectares) -> 10
 Maximum Area Disturbed/Day (hectares) -> 0
 Total Soil Imported/Exported (meters³/day)-> 82

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Milpitas WaterReuse Pipeline Segment5				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	CO2 (lbs/day)
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	0.3	2.3	3.1	3.2	0.1	3.1	0.8	0.1	0.6	684.1
Grading/Excavation	1.7	13.9	15.6	4.0	0.9	3.1	1.4	0.7	0.6	4,228.7
Drainage/Utilities/Sub-Grade	-	-	-	-	-	-	-	-	-	-
Paving	1.4	12.3	10.8	0.6	0.6	-	0.5	0.5	-	2,231.7
Maximum (pounds/day)	1.7	13.9	15.6	4.0	0.9	3.1	1.4	0.7	0.6	4,228.7
Total (tons/construction project)	0.2	1.4	1.5	0.3	0.1	0.2	0.1	0.1	0.0	404.2

Notes: Project Start Year -> 2020
 Project Length (months) -> 10
 Total Project Area (acres) -> 4
 Maximum Area Disturbed/Day (acres) -> 0
 Total Soil Imported/Exported (yd³/day)-> 93

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Milpitas WaterReuse Pipeline Segment5				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	CO2 (kgs/day)
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	0.1	1.0	1.4	1.5	0.1	1.4	0.3	0.1	0.3	311.0
Grading/Excavation	0.8	6.3	7.1	1.8	0.4	1.4	0.6	0.3	0.3	1,922.2
Drainage/Utilities/Sub-Grade	-	-	-	-	-	-	-	-	-	-
Paving	0.6	5.6	4.9	0.3	0.3	-	0.2	0.2	-	1,014.4
Maximum (kilograms/day)	0.8	6.3	7.1	1.8	0.4	1.4	0.6	0.3	0.3	1,922.2
Total (megagrams/construction project)	0.2	1.3	1.4	0.2	0.1	0.2	0.1	0.1	0.0	366.6

Notes: Project Start Year -> 2020
 Project Length (months) -> 10
 Total Project Area (hectares) -> 2
 Maximum Area Disturbed/Day (hectares) -> 0
 Total Soil Imported/Exported (meters³/day)-> 71

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Appendix B - Biological Resources Technical Report

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RMC WATER AND ENVIRONMENT

Milpitas Recycled Water Pipeline Extension Project

Biological Resources Assessment

March 2016

BIOLOGICAL RESOURCES ASSESSMENT

**MILPITAS RECYCLED WATER PIPELINE EXTENSION
PROJECT**

MILPITAS, SANTA CLARA COUNTY, CALIFORNIA

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March 2016

Rincon Consultants, Inc. 2016 (March). Biological Resources Assessment, Milpitas Recycled Water Pipeline Extension Project. Milpitas, Santa Clara County, California. Prepared for RMC Water and Environment. 50+ pgs.

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- Appendix E: Wildlife Species Observed in the Vicinity of the Project Area



EXECUTIVE SUMMARY

This Biological Resources Assessment evaluates the proposed Milpitas Recycled Water Pipeline Extension Project located primarily within the City of Milpitas, California, and in part within unincorporated Santa Clara County. Rincon Consultants, Inc. (Rincon) conducted reconnaissance-level biological surveys to document the existing site conditions and to evaluate the potential for adverse impacts to biological resources from project development. Most of the proposed pipeline alignments (Segments 1, 2, 4 and 5 and their associated alternatives) are located in or adjacent to existing roads in an urban setting and portions of the pipeline alignment traverse City parks and the Summitpointe Golf Club. Undeveloped areas that the pipeline traverses (Segment 3 and its alternatives) are limited and include non-native grasslands at the Summitpointe Golf Club, Ed Levin County Park, and Mission Monument Peak Regional Preserve. Several ponds, oak (*Quercus* sp.) and riparian woodlands, occur along Segment 3 and its alternative alignments. Berryessa Creek is a channelized creek that flows north and south through the City of Milpitas and crosses Segment 1 at Los Coches Street and Segment 5 at Ames Avenue.

Based on field studies and review of literature and sensitive species records, Rincon determined that Segment 3 and its alternatives contain suitable habitat for two special status plant species and several special status wildlife species. Special status plants with potential to occur onsite include fragrant fritillary (*Fritillaria liliacea*) and arcuate bush-mallow (*Malacothamnus arcuatus*). Special status amphibian and reptile species with potential to occur within the project area include California tiger salamander (*Ambystoma californiense*), western pond turtle (*Emys marmorata*), California red-legged frog (*Rana draytonii*), foothill yellow-legged frog (*Rana boylei*) and Alameda whipsnake (*Masticophis lateralis euryxanthus*). Special status avian species with potential to occur within the project area include golden eagle (*Aquila chrysaetos*), white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), tri-colored blackbird (*Agelaius tricolor*), and burrowing owl (*Athene cunicularia*). White-tailed kite and northern harrier were observed foraging in the project area. The entirety of the proposed project contains habitat suitable for nesting birds protected by the Migratory Bird Treaty Act and California Fish and Game Code. Pallid bat (*Antrozous pallidus*) potentially roosts in trees or rock outcrops in the project area and may forage in grasslands in the project area. In general, habitat for special status species in the proposed project area is limited because the narrow and linear project area is located predominantly along existing paved roads, and only occurs in areas of natural habitat in very restricted and narrow areas.

Alignments utilizing existing pipes are not expected to have a significant impact to biological resources because these occur in previously disturbed areas. Staging of equipment in previously developed areas and roadways will further reduce potential impacts to special status species. Installation of new pipes, pump stations and water tanks would result in ground disturbance and these proposed activities have the potential to result in impacts to biological resources; however, these impacts would be avoided and/or minimized when sited in existing roadways and other previously disturbed or developed areas. Due to the potential for special status biological resources in general to occur in the project area some additional surveys are recommended to determine if the proposed project has the potential to significantly impact



these resources. The following surveys are recommended for work that will not be completely restricted to existing roads and previously developed areas:

- Vegetation mapping of the project alignment for special status communities;
- Focused rare plant surveys in areas with suitable habitat (Portions of Segment 3 and its alternatives);
- Habitat assessments and possibly protocol-level surveys for California tiger salamander, California red legged frog, and Alameda whipsnake in areas with suitable habitat (Portions of Segment 3 and its alternatives);
- Jurisdictional delineation (where project area crosses potentially jurisdictional drainages or other wetlands); and
- Protected tree survey.

If findings of focused surveys identify potential impacts to biological resources, then agency consultations, regulatory permits and/or mitigation may be required to offset impacts to one or more types of biological resources (i.e. special status species, vegetation communities, trees and jurisdictional waters) to reduce project impacts to less than significant levels.



1 INTRODUCTION

This report documents the findings of a Biological Resources Assessment (BRA) conducted by Rincon Consultants, Inc. (Rincon) for the Milpitas Recycled Water Pipeline Extension Project (project). The purpose of this report is to document the existing conditions within the proposed project area and to evaluate the potential for project-related impacts to special status or otherwise regulated biological resources under the California Environmental Quality Act (CEQA) review process.

1.1 PROJECT LOCATION

The majority of the proposed project is located east of Interstate 680 (I-680) within the City of Milpitas, Santa Clara County, California, with one segment (Segment 3, Alternative 3c and Alternative 3d) extending northeast into the unincorporated Santa Clara County (Figure 1). The approximate center of the proposed project area occurs at latitude 37.44 N and longitude 121.87 W (WGS-84 datum) and is depicted on the Milpitas and Calaveras Reservoir, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles T05S R01E S32, T05S R01E S33, T05S R01E S34, T06S R01E S03, T06S R01E S04, T06S R01E S05, T06S R01E S08, T06S R01E S09, T06S R01E S16, T06S R01E S17. Most of the proposed pipeline alignments are located in or adjacent to existing paved roads in residential and commercial areas. Project activities will also include the installation of a water tank and pump station at the Summitpointe Golf Club and at Cardoza Park. A temporary staging area for vehicles, equipment and materials will be located in the parking lot adjacent to Sandy Wool Lake at the Ed Levin County Park.

1.2 PROJECT DESCRIPTION

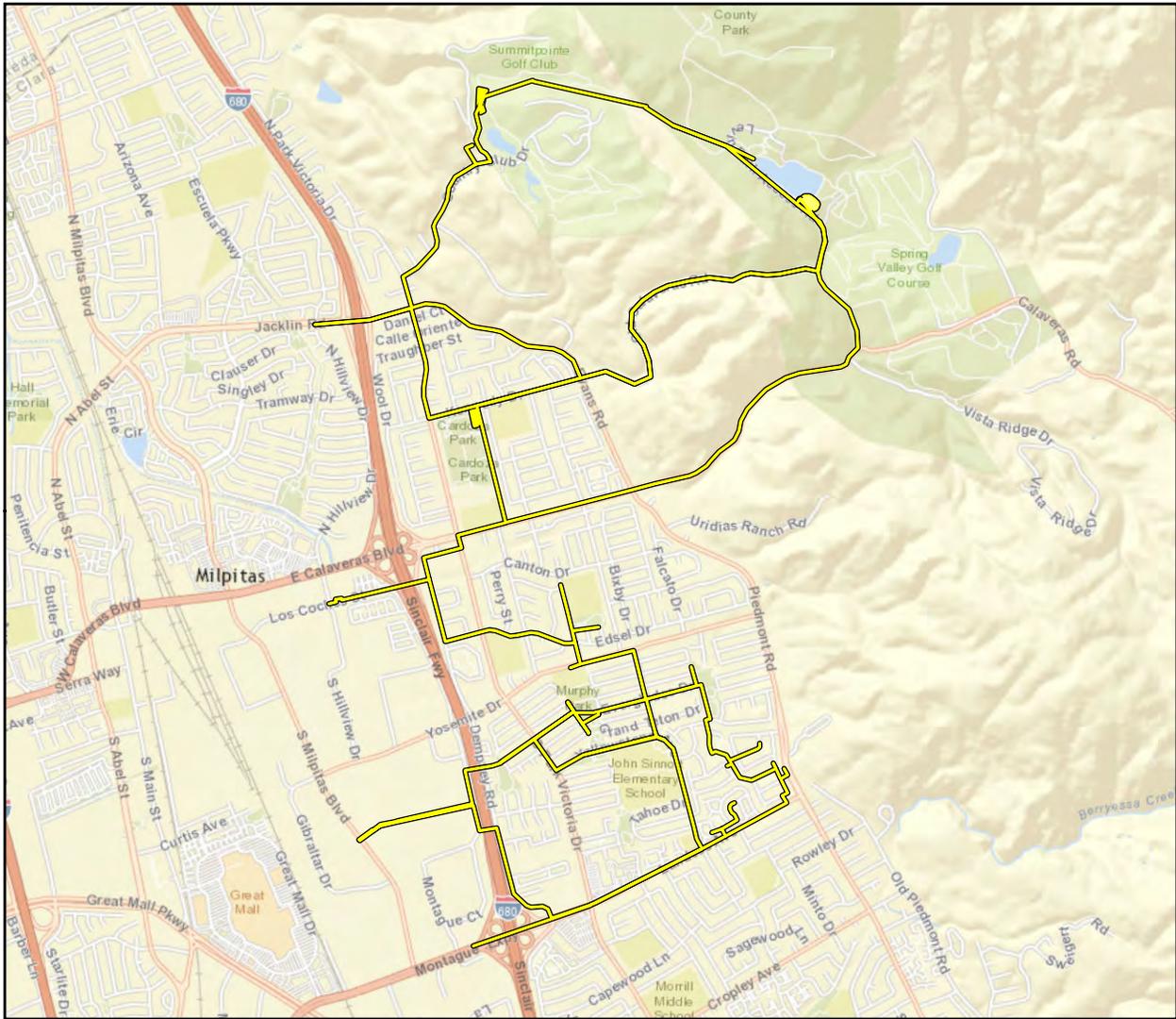
In response to the historic drought in California, several golf courses in the Milpitas foothills that are currently served with raw water have been notified that they will no longer receive these deliveries. In order to serve these golf courses and other customers, such as parks and schools, the City of Milpitas is planning a multi-phased design and construction approach to meet recycled water demands. The existing recycled water system is located entirely west of I-680. All five segments and alternatives thereof described below will be analyzed as part of the CEQA environmental review process (Figure 2).

Segment 1

The purpose of the new 12-inch recycled water (RW) main is to provide a RW distribution network to the east side of Interstate 680 (I-680). Segment 1 connects to the existing South Bay Water Recycling (SBWR) pipeline at the intersection of South Hillview Drive and Los Coches Street. After crossing I-680, Segment 1 splits into a northern and a southern branch at Dempsey Road. The northern branch stays within the roadway along Dempsey Road, North Park Victoria Drive and East Calaveras Boulevard, then follows the eastern edge of the Milpitas Sports Complex and Cardoza Park and ends within the roadway on Kennedy Drive by Burnett Elementary School. The southern branch follows Dempsey Road and then Edsel Drive ending by Randall Elementary School.

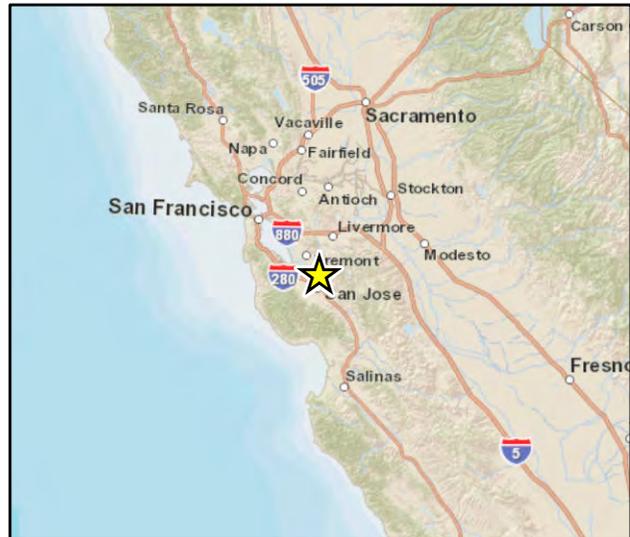
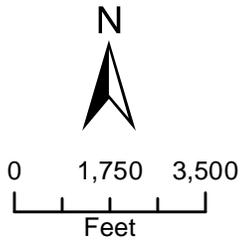


Milpitas Recycled Water Pipeline Extension Project
Biological Resources Assessment



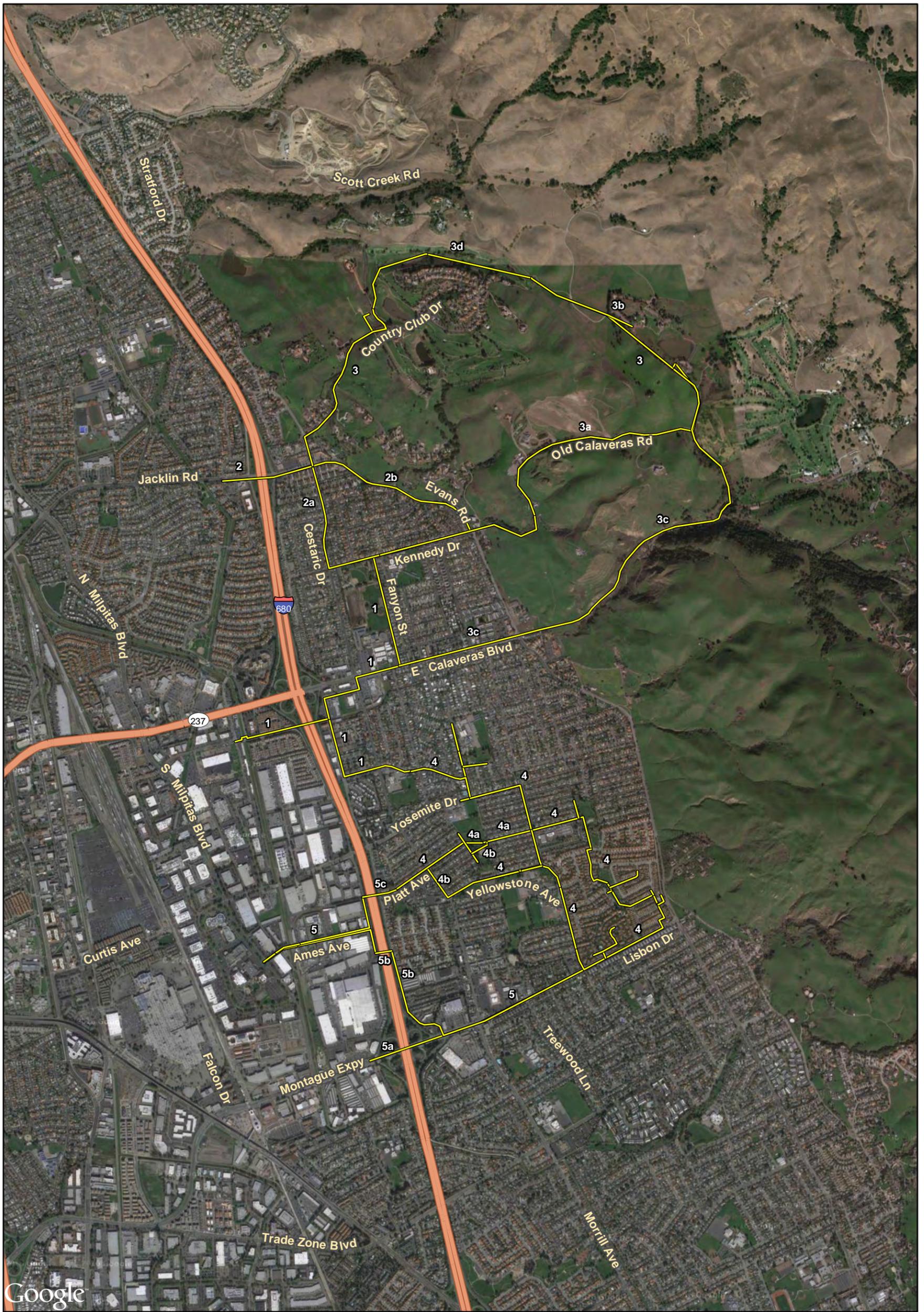
Imagery provided by National Geographic Society, ESRI and its licensors © 2015. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

 Project Location



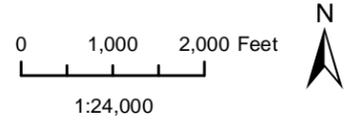
Project Location

Figure 1



Imagery provided by Google and its licensors © 2016.

— Proposed Alignments



Area of Potential Effects

Figure 2

Segment 2

The main purpose of Segment 2 is to loop the RW system by providing another path across I-680. A secondary purpose of Segment 2 may be to serve Cardoza Park. Originally Cardoza Park was intended to be served by Segment 1, which is being constructed as part of the Dempsey Utility Improvements Project. However, the irrigation meter for Cardoza Park has been determined to be along Kennedy Drive and not along the pre-defined alignment for Segment 1.

As of February 17, 2016, a decision has yet to be made on whether to include Cardoza Park on Segment 1 or 2.

Both Segment 2 alignments cross I-680 at Jacklin Road which goes under the Interstate. Construction vehicle height limitations under the Interstate overpass should be considered – there is a posted 14’-9” clearance.

Segment 2 Alternative Alignment A

- This alignment connects to Segment 1 on Kennedy Drive and to the existing SBWR system on Jacklin Road.
- It is independent of the alignment chosen for Segment 3.
- Cardoza Park could be served by this alignment.
- Provides a connection point for the proposed tank and pump station at Cardoza Park that would serve the City of Milpitas customers.
- This alignment is approximately 5,200 linear feet (LF).

Segment 2 Alternative Alignment B

- This alignment connects to Segment 3 on Old Calaveras Road and to the existing SBWR system on Jacklin Road.
- It is dependent on selecting an alignment for Segment 3 that provides a connection point along Old Calaveras Road (i.e. Segment 3 Alignments A and B).
- Cardoza Park would not be served by this alignment. The park would need to be served by Segment 1.
- Proposed tank and pump station at Cardoza Park would connect to Segment 1.
- This alternative may be easier to construct because it avoids construction on a busy residential street by using the less traveled Evans Road.
- This alignment is approximately 5,700 LF.

Segment 3

The purpose of Segment 3 is to serve the hillside customers. A secondary purpose that has been considered for Segment 3 is to serve as a transmission line for a regional storage tank located on the hillside.

Segment 3 Alternative Alignment A

- This option consists of two distinct sections of pipeline. One pipeline connects to Segment 2 on Jacklin Road and travels along Country Club Drive to serve Summitpointe Golf Club. The other pipeline connects to Segment 1 on Kennedy Drive and travels along Old Calaveras Road to serve Ed Levin Park, Spring Valley



Golf Course and a proposed CalFire/Spring Valley Volunteer Fire Department truck fill station.

- The County's existing raw water distribution line has the potential to be repurposed for RW in this alternative.
- This alternative requires three pump stations to serve the hillside customers. One will boost RW up to Summitpointe, and two are needed to boost RW to Ed Levin Park/Spring Valley.
- This alternative does not include storage tanks for the hillside customers.
- This alignment is approximately 14,100 LF.

Segment 3 Alternative Alignment B

- This alignment connects to Segment 1 where it ends by Burnett Elementary School on Kennedy Drive and travels along Old Calaveras Road to Downing Road to serve Ed Levin Park and Spring Valley Golf Course. The alignment then continues down Downing Road and turns onto Monument Peak Road to serve Summitpointe.
- The County's existing raw water distribution line has the potential to be repurposed for RW in this alternative.
- This alternative will require Summitpointe to accept RW at a different location than where it receives raw water. This alternate delivery point has been discussed with Summitpointe, and they would be responsible for reworking their on-site system.
- This alternative requires two pump stations to serve the hillside customers. There will be two to boost up to Ed Levin Park/Spring Valley and then Summitpointe can be gravity fed.
- This alignment is approximately 14,400 LF.

Segment 3 Alternative Alignment C

- This alignment connects to Segment 1 on Calaveras Road and continues on Downing Road to serve Ed Levin Park/Spring Valley and then continues to Monument Peak Road to serve Summitpointe.
- This alternative would require Summitpointe to accept RW at a different location than where it receives raw water.
- This alternative requires two pump stations to serve the hillside customers. There will be two to boost up to Ed Levin Park/Spring Valley and then Summitpointe can be gravity fed.
- This alignment is approximately 15,400 LF.

Segment 3 Alternative Alignment D

- This alignment connects to Segment 1 on Jacklin Road and travels along Country Club Drive to serve Summitpointe and then continues through Summitpointe and Monument Peak Road to serve Ed Levin Park/Spring Valley.
- This alternative requires only two pump stations to serve the hillside customers. There will be one to boost to Summitpointe and one to pump from storage at Summitpointe to Ed Levin Park/Spring Valley.
- This alternative includes the option for an underground or partially buried storage tank at Summitpointe. A storage tank is included in the alternative as opposed to



using the irrigation pond for storage because of concerns about protecting RW quality and the City's preference for closed storage.

- This alignment is approximately 11,600 LF.

Segment 4

The purpose of Segment 4 is to serve the numerous customers located to the south and east of Segment 1. Segment 4 will not directly connect to any storage tanks or pump stations.

Segment 4 Alternative Alignment A

- This alignment connects to Segment 1 where it ends by Randall Elementary School on Edsel Drive and can connect to Segment 5 either at the intersection of Yellowstone Avenue and Landess Avenue or off of Olympic Drive at Creighton Park.
- It serves the 29 identified, potential customers in this area of the city.
- This alignment is approximately 16,000 LF.

Segment 4 Alternative Alignment B

- This alignment connects to Segment 1 where it ends by Randall Elementary School on Edsel Drive and can connect to Segment 5 either at the intersection of Yellowstone Avenue and Landess Avenue or off of Olympic Drive at Creighton Park.
- It varies from Segment 4 Alignment A in that the recycled water main travels along Yellowstone Ave instead of crossing through Murphy Park.
- It serves the 29 identified potential customers in this area of the city.
- This alignment is approximately 16,000 LF.

Segment 5

The main purpose of Segment 5 is to loop of the recycled water system by connecting to Segment 4 and providing another path across I-680 in order to connect to the City's Transit Area Specific Plan extensions or the SBWR system. Segment 5 will not directly connect to any storage tanks or pump stations.

Segment 5 Alternative Alignment A

- This alignment crosses I-680 at Landess Avenue to connect to the future Transit Area Specific Plan extensions.
- This alignment crosses approximately 1,750 LF of Caltrans right-of-way, which lies below Landess Avenue and would require a deep and long trenchless crossing.
- This alignment is approximately 4,800 LF.

Segment 5 Alternative Alignment B

- This alignment turns north from Landess Avenue at Dempsey Road in order to cross I-680 at a narrow location to connect to the existing SBWR at South Milpitas Boulevard at Ames Avenue.
- The alignment requires a relatively short trenchless crossing of approximately 300 LF across Caltrans right-of-way at Creighton Court.
- This alignment is approximately 8,700 LF.



Segment 5 Alternative Alignment C

- This alignment connects to Segment 4 off of Olympic Drive at Creighton Park.
- It connects to the existing SBWR at at South Milpitas Boulevard at Ames Avenue.
- The alignment requires a relatively short trenchless crossing of approximately 300 LF across Caltrans right-of-way at Creighton Court.
- This alignment is approximately 3,700 LF.



2 METHODOLOGY

2.1 REGULATORY OVERVIEW

The City of Milpitas is the responsible lead agency for this project under CEQA. This BRA was prepared to support CEQA environmental review, and for compliance with the National Environmental Policy Act (NEPA) in the event that a Federal nexus with the project is established (e.g., Federal funding or permit/approval). If a Federal nexus is established, the project would need to meet CEQA-Plus regulatory standards (CEQA and NEPA). The State Water Resources Control Board would have the responsibility for CEQA-Plus review which applies federal standards to the CEQA process.

This section provides a general summary of the applicable federal, state, and local regulations related to biological resources that could occur within the project area and immediate vicinity. Regulated or sensitive biological resources considered and evaluated in this BRA include special status plant and wildlife species, nesting birds and raptors, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement corridors, and other biological resources afforded protection under local and regional jurisdictions, such as protected trees.

2.1.1 Environmental Statutes

For the purposes of this BRA, potential project-related impacts to biological resources were analyzed on the basis of the following regulatory statutes and guiding documents:

- California Environmental Quality Act (CEQA);
- Federal Endangered Species Act (FESA);
- California Endangered Species Act (CESA);
- Federal Clean Water Act (CWA);
- California Fish and Game Code (CFGC);
- Migratory Bird Treaty Act (MBTA);
- The Bald and Golden Eagle Protection Act; and
- Porter-Cologne Water Quality Control Act.

A more detailed account of the current regulatory framework applicable to the proposed project is presented as Appendix A.

2.1.2 Guidelines for Determining CEQA Significance

The following significance threshold as defined within the *CEQA Guidelines, Appendix G – Initial Study Checklist*, were used to evaluate potential environmental effects. Based on these criteria, a proposed project would have a significant effect on biological resources if it would:

- a. Have substantial adverse effects, 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.*
- 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.*

2.2 DATABASE AND LITERATURE REVIEW

The project area, or project area, is defined as the proposed pipeline alignments, a staging area, and two pump stations with water tanks. Rincon biologists evaluated a Biological Study Area (BSA) that consisted of a 75-foot buffer along both sides of the centerline of the pipeline alignments, and a 50-foot buffer around the footprint of the two pump station and water tank sites, and staging area.

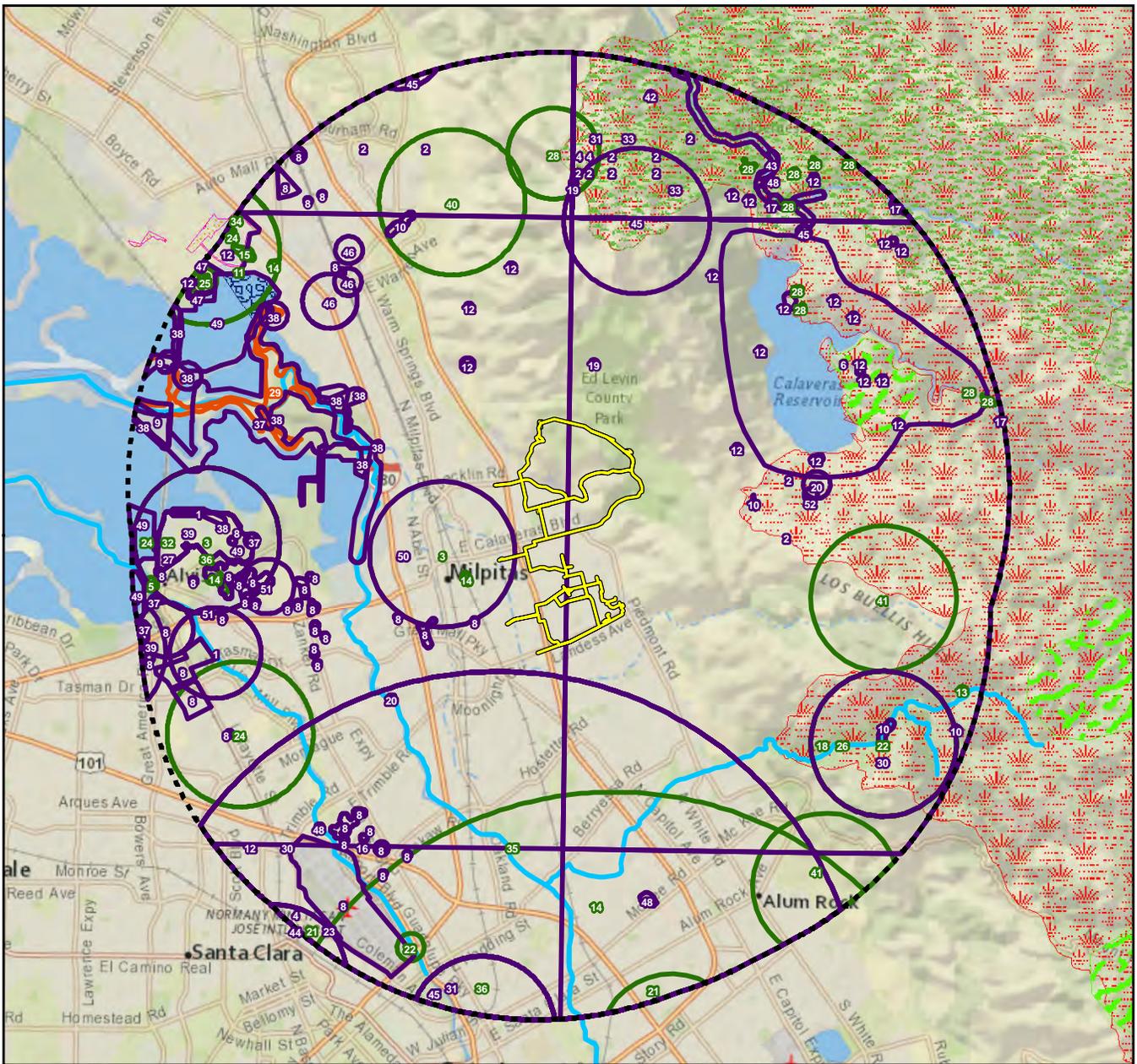
Rincon reviewed literature to obtain baseline information about biological resources with potential to occur in the BSA, vicinity of the proposed project, and the region. The literature review included information from peer reviewed scientific publications, standard biological reference materials, and regionally applicable regulatory guidance documents. These included: Baldwin et al., 2012; Bowers et al., 2004; Holland, 1986; Sawyer et al., 2009; CDFW, 2010; Stebbins, 2003; Zeiner et al., 1988; and Zeiner et al., 1990. In addition, Rincon conducted queries of several relevant scientific databases that provide information about occurrences of sensitive biological resources: the California Department of Fish and Wildlife (CDFW; formerly the California Department of Fish and Game) California Natural Diversity Data Base (CNDDB) (CDFW, 2015a) and Biogeographic Information and Observation System (CDFW, 2015b) as shown in Figure 3.

Other resources included; the U.S. Fish and Wildlife Service (USFWS) Critical Habitat Portal (USFWS, 2015a) and Information, Planning, and Conservation System Query (USFWS, 2015b); the United States Department of Agriculture, Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA NRCS, 2015); and the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants of California (CNPS, 2015). The queries included the Milpitas and Calaveras Reservoir, California USGS 7.5-minute topographic quadrangles and the other ten USGS quadrangles that surround these two quadrangles (Mountain View, Newark, Niles, La Costa Valley, Mendenhall Springs, Mt. Day, Lick Observatory, San Jose East, San Jose West, and Cupertino); as well as aerial photographs, topographic maps, geologic maps, climatic data, and general project plans.

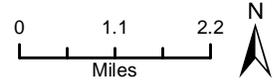
A complete list of the regionally occurring special status species reported from the scientific literature review and database queries was compiled for the BSA (Appendix B). Then an analysis to determine which of these special status species have the potential to occur within the BSA was conducted. Conclusions regarding which species have the potential to occur onsite



Milpitas Recycled Water Pipeline Extension Project
 Biological Resource Assessment



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 Additional data provided by the: California Natural Diversity Database, December, 2015.



- Project Location
- 5-Mile Radius

CNDDDB

- Animals
- Plants
- Natural Communities

Critical Habitat

- Alameda whipsnake (=striped racer)
- California red-legged frog
- California tiger Salamander
- Contra Costa goldfields
- Vernal pool tadpole shrimp
- Western snowy plover
- Steelhead

- | | | |
|----------------------------------|--|-----------------------------------|
| 1 - Alameda song sparrow | 24 - Hoover's button-celery | 47 - vernal pool tadpole shrimp |
| 2 - Alameda whipsnake | 25 - lesser saltscale | 48 - western pond turtle |
| 3 - alkali milk-vetch | 26 - maple-leaved checkerbloom | 49 - western snowy plover |
| 4 - American peregrine falcon | 27 - mimic tryonia (=California brackishwater snail) | 50 - western yellow-billed cuckoo |
| 5 - arcuate bush-mallow | 28 - most beautiful jewelflower | 51 - white-tailed kite |
| 6 - Berkeley kangaroo rat | 29 - Northern Coastal Salt Marsh | 52 - Yuma myotis |
| 7 - brittscale | 30 - obscure bumble bee | |
| 8 - burrowing owl | 31 - pallid bat | |
| 9 - California clapper rail | 32 - Point Reyes salty bird's-beak | |
| 10 - California red-legged frog | 33 - prairie falcon | |
| 11 - California seabite | 34 - prostrate vernal pool navaretia | |
| 12 - California tiger salamander | 35 - robust spineflower | |
| 13 - chaparral harebell | 36 - saline clover | |
| 14 - Congdon's tarplant | 37 - saltmarsh common yellowthroat | |
| 15 - Contra Costa goldfields | 38 - salt-marsh harvest mouse | |
| 16 - Croch bumble bee | 39 - salt-marsh wandering shrew | |
| 17 - foothill yellow-legged frog | 40 - San Joaquin spearscale | |
| 18 - fragrant fritillary | 41 - Santa Clara red ribbons | |
| 19 - golden eagle | 42 - sharp-shinned hawk | |
| 20 - great blue heron | 43 - steelhead - central California coast DPS | |
| 21 - hairless popcottonflower | 44 - Swainson's hawk | |
| 22 - Hall's bush-mallow | 45 - Townsend's big-eared bat | |
| 23 - hoary bat | 46 - tricolored blackbird | |

Special Status Species Occurrences,
 Sensitive Communities, and Critical Habitat

Figure 3

were based not only on background research and literature review previously mentioned; but also on the data collected in the field during the site surveys.

Several regionally occurring special status species were eliminated due to lack of suitable habitat within the BSA, range in elevation, and/or geographic distribution. Special status species determined to have the potential to occur within the BSA are discussed in Section 4.1. Special status species that were determined not to have potential to occur within the BSA are not discussed.

2.3 RECONNAISSANCE FIELD SURVEY

Rincon Botanist/Biologist Michele Lee conducted two reconnaissance surveys on December 2 and 18, 2015. A reconnaissance-level field survey of the BSA at the Summitpointe Golf Club was conducted on December 2, 2015 and a reconnaissance-level field survey of the remaining portions of the BSA was conducted on December 18, 2015. The reconnaissance surveys were conducted in order to document the existing site conditions, identify vegetation communities, document wildlife habitats, and to assess the overall potential for the habitats observed in the BSA to support special status species. The survey consisted of a combined pedestrian/vehicular survey, and all of the BSA was observed by walking or driving.

Weather conditions were mild and generally favorable for the detection of wildlife species typically active during the day. On December 2nd, it was cloudy throughout the duration of the site visit, the temperature ranged from approximately 51-60 degrees Fahrenheit, and winds were mild at approximately 0-7 miles per hour (mph) out of the west. On December 18th, it was partly cloudy throughout the duration of the site visit, the temperature ranged from approximately 56-62 degrees Fahrenheit, and winds were at approximately 0-18 mph out of the south-southeast.

2.3.1 Vegetation Classification

Rincon classified vegetation communities broadly following CDFW's List of Vegetation Alliances and Associations (CDFW, 2010) (note: the CDFW system has recently superseded the system in *The Manual of California Vegetation*, second edition [Sawyer et al., 2009]). However, vegetation communities observed within the BSA were mostly dominated by species associated with urbanized areas, or consisted largely of ornamental and non-native species. These plant types are not always categorized in the List of Vegetation Alliances and Associations, therefore nomenclature was modified as needed to accurately describe the existing habitats observed onsite.

2.3.2 Flora and Fauna

During the field surveys, incidental observations of plant and animal species were recorded, and these observations were compiled and appended to this report (see appendices D and E). Rincon evaluated the habitat requirements for each regionally occurring species and compared those requirements to the type and quality of habitats observed in the BSA during the field reconnaissance surveys. Plant species nomenclature and taxonomy followed *The Jepson Manual: Vascular Plants of California*, second edition (Baldwin et al., 2012), and Supplement I



(The Jepson Herbarium, 2013) and Supplement II (The Jepson Herbarium, 2014) of that publication. All plant species encountered were noted and identified to the lowest possible taxonomic level necessary to determine rarity (see Appendix E). Nomenclature for avian species based on the American Ornithologists' Union (AOU) Check-list of North and Middle American Birds, 7th edition and the 56th supplement (AOU, 2015).

2.3.3 Jurisdictional Waters

The reconnaissance-level field survey also evaluated the BSA for the presence of potentially jurisdictional aquatic features. The reconnaissance survey was based solely on visual inspection of the BSA and a formal jurisdictional delineation of waters and wetlands was not conducted.



3 EXISTING CONDITIONS

This section summarizes the existing biological conditions in the project area based on the results of the reconnaissance-level field surveys and literature review. Discussions regarding the general environmental setting, vegetation communities, plants and wildlife, and aquatic features are presented below. Representative photographs of the project area and vicinity are provided in Appendix C. A complete list of all plant species observed in the BSA and vicinity during the field surveys is presented as Appendix D. A complete list of all wildlife species observed in the BSA and vicinity during field surveys is presented as Appendix E.

3.1 ENVIRONMENTAL SETTING

Most of the proposed pipeline alignments (Segments 1, 2, 4, 5 and their alternatives) are located in existing paved roads in residential and commercial areas, landscaped city parks, including Ben Rodgers Park, Cardoza Park, Ed Levin County Park, Foothill Park, Hillcrest Park, Murphy Park, and Yellowstone Park, with portions of the pipeline (Segment 3 and its alternatives) that traverse the Summitpointe Golf Club. Elevations in the project area range from approximately 26 feet (8 meters) above mean sea level at the northwestern end along Jacklin Road to 631 feet (192 meters) above mean sea level in the northwestern portion along Downing Road at the Ed Levin County Park. Land uses immediately adjacent to the BSA include land developed for residential and commercial purposes and for recreation. Undeveloped areas include range and grazing land as well as protected open space. The project area is located in northeastern Santa Clara County. The climate within Santa Clara County is moderate and typifies a Mediterranean coastal climate throughout the year. The majority of rainfall occurs during the winter months and the summers are dry and warm.

3.1.1 SOILS

According to the NRCS Web Soil Survey of Santa Clara County (western part), the following soil map units occur within the project area: Alo-Altamont complex, 15 to 30 percent slopes (305); Urbanland-Hangerone complex, 0 to 2 percent slopes, drained (145); Urbanland-Embarcadero complex, 0 to 2 percent slopes, drained (150); Urbanland-Cropley complex, 0 to 2 percent slopes (317); Urban land-Cropley complex, 2 to 9 percent slopes (318); Urban land-Flaskan complex, 2 to 9 percent slopes (141); Kawenga-Alo complex, 20 to 40 percent slopes (307); Cropley clay, 2 to 9 percent slopes, MLRA 14 (316); Argixerolls, 20 to 50 percent slopes (345); Urbanland-Campbell complex, 0 to 2 percent slopes, protected (165); Urbanland-Clear Lake complex, 0 to 2 percent slopes (160); Urban land-Flaskan complex, 0 to 2 percent slopes (140); and Urbanland-Landelspark complex, 0 to 2 percent slopes (170) (USDA NRCS, 2015).

3.2 VEGETATION COMMUNITIES AND HABITATS

Most of the proposed pipeline segments are located in or adjacent to existing paved roads in residential and commercial areas, with portions that traverse the Summitpointe Golf Club and landscaped city parks, including Ben Rodgers Park, Cardoza Park, Ed Levin County Park, Foothill Park, Hillcrest Park, Murphy Park, and Yellowstone Park. Undeveloped areas that the pipeline alignment traverses include non-native grassland, remnant valley oak woodland, and coast live oak woodland (Figures 4a and 4b).



3.2.1 Developed

Segments 1, 2, 4, 5 and their alternatives are located within the City of Milpitas and the alignments follow existing paved roads. Vegetation in these areas is typical of urban areas and includes ornamental trees, shrubs, and turf adjacent to existing roadways, sidewalks and buildings. Golf course greens and residential areas along Segment 3 and its alternatives are also considered developed lands as they are regularly maintained and dominated by ornamental species.

3.2.2 Non-native Grassland

This habitat is dominated by grass species, including wild oat (*Avena* sp.), ripgut brome (*Bromus diandrus*), Harding grass (*Phalaris aquatica*), foxtail barley (*Hordeum murinum* ssp. *leporinum*), and Medusa head (*Elymus caput-medusae*). Associated non-native forbs include rose clover (*Trifolium hirtum*), redstem filaree (*Erodium cicutarium*), dove's foot geranium (*Geranium molle*), vetch (*Vicia* sp.), and prickly lettuce (*Lactuca serriola*). Few native plant species were observed in this habitat, although not many native annuals would be expected in December. In some of the more disturbed areas, a higher abundance of invasive plant species, such as fennel (*Foeniculum vulgare*), Italian thistle (*Carduus pycnocephalus*), artichoke thistle (*Cynara cardunculus*), and black mustard (*Brassica nigra*) were present. Native species observed included coyote brush (*Baccharis pilularis*) and fireweed (*Epilobium brachycarpum*), a native forb common in disturbed areas. Native species were very sparsely scattered throughout non-native grassland areas.

Non-native grassland areas occur along Segment 3 and its alternative alignments. Specifically, portions of the alignment at the Ed Levin County Park and Mission Peak Regional Preserve (East Bay Regional Park District) Bay Area Ridge Trail at the northeastern portion of the BSA cross through non-native grasslands.

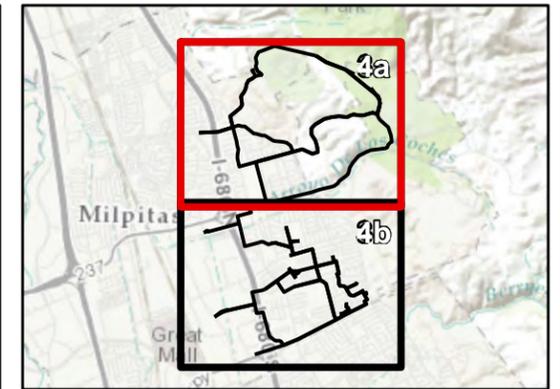
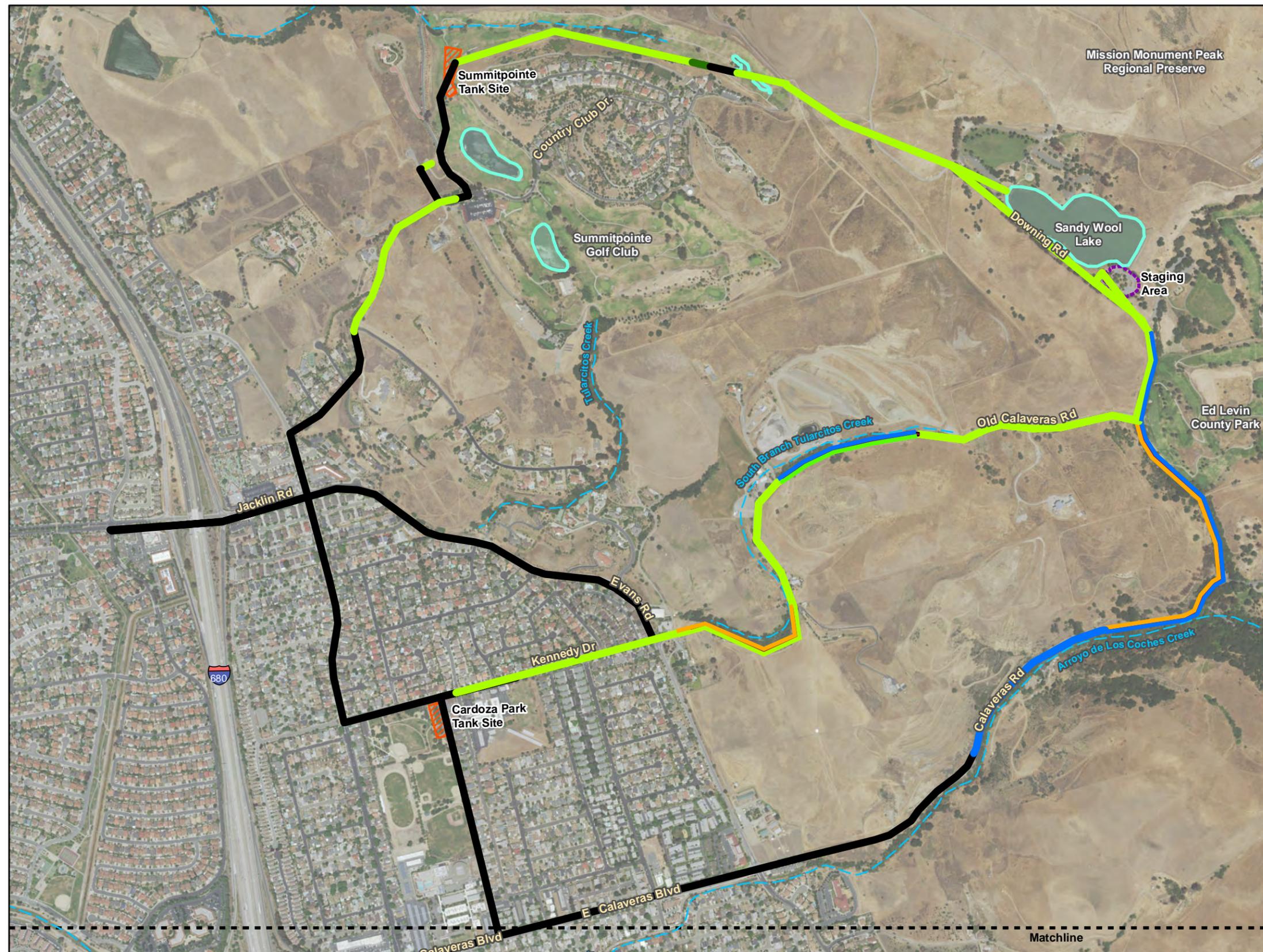
3.2.3 Coast Live Oak Woodland (*Quercus agrifolia* Alliance)

Individual coast live oaks can be found throughout the project area; however, an oak woodland is defined as a grouping of trees on a unit of land or project area where oak trees encompass 10 percent or greater of the canopy cover. The 10 percent canopy cover applies to the individual woodland and not the entire project area, which can contain one or more oak woodlands. Coast live oak woodlands occur along the proposed project in Segments 3, 3a, 3b, and 3c along Calaveras Road and Old Calaveras Road. These stands primarily occur on north-facing slopes and in drainages along the roadside, and are surrounded by non-native grasslands. Stands can be dominated by coast live oak with few understory species, or in mixed woodlands with western sycamore (*Platanus occidentalis*) and California sagebrush (*Artemisia californica*), and/ or ornamental species.

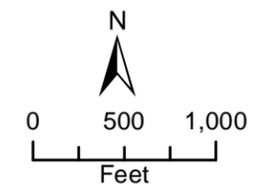
3.2.4 Valley Oak Woodland (*Quercus lobata* Alliance)

A small stand of valley oak, consisting of four valley oaks, is located on the Summitpointe Golf Club in Segment 3d. This stand occurs on a steep north-facing slope and it supports and an understory of soap plant (*Chlorogalum pomeridianum*), poison oak (*Toxicodendron diversilobum*), and snowberry (*Symphoricarpos albus* var. *laevigatus*). Invasive Himalayan blackberry (*Rubus*





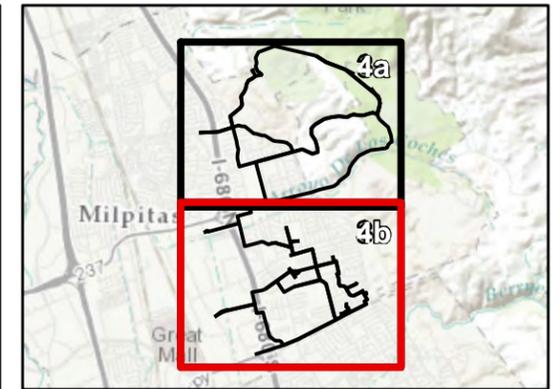
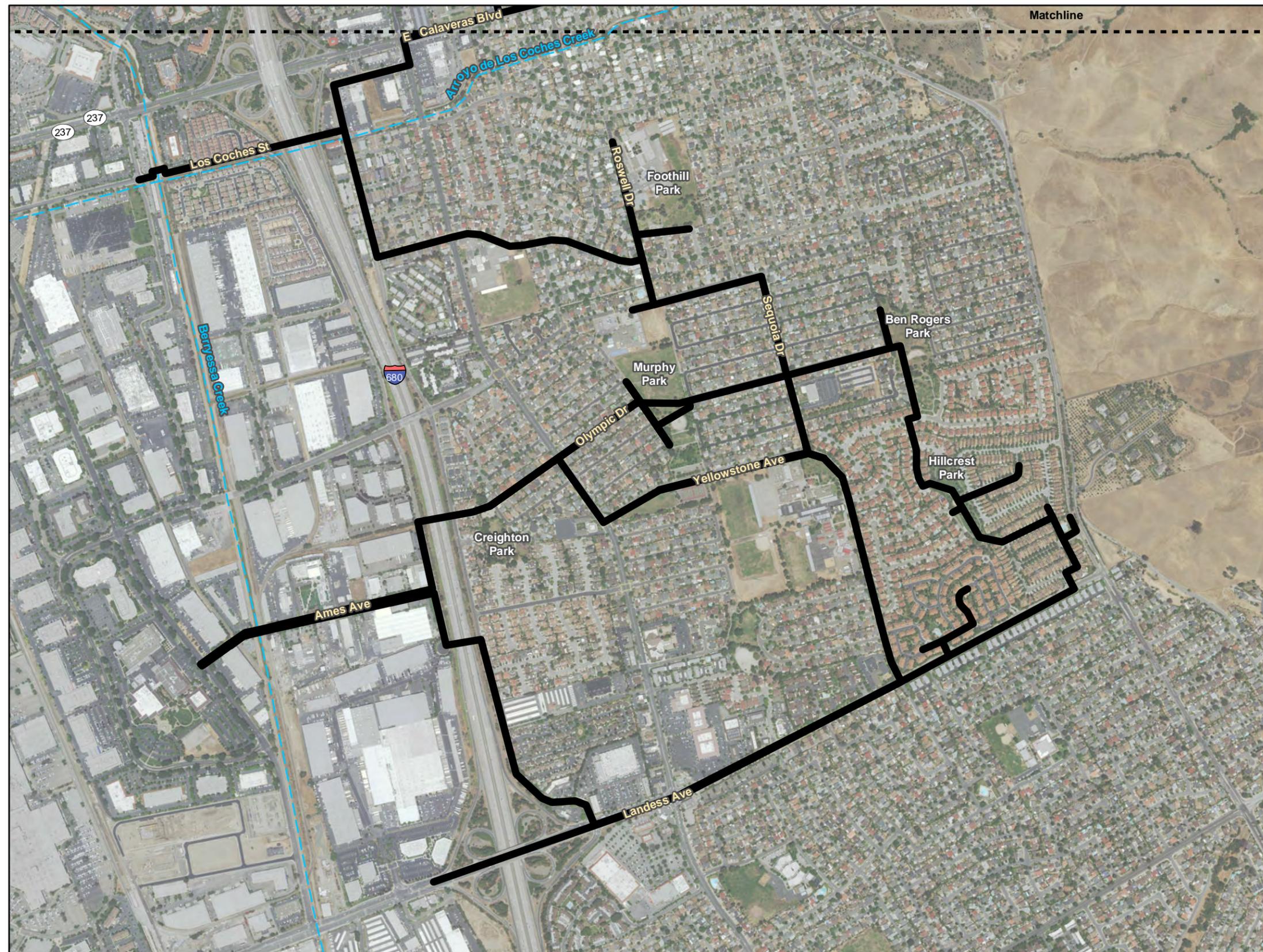
-  Tank Site
-  Staging Area
- Habitat Types**
-  Developed
-  Non-Native Grassland
-  Coast Live Oak Woodland
-  Valley Oak Woodland
-  Riparian / Oak Woodland
- Waters**
-  Creeks
-  Freshwater Pond



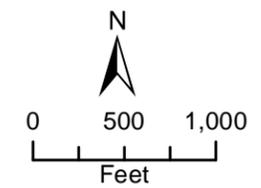
Vegetation Communities
and Habitats

Imagery provided by Google and its licensors © 2015.

Figure 4a



-  Tank Site
-  Staging Area
- Habitat Types**
-  Developed
-  Non-Native Grassland
-  Coast Live Oak Woodland
-  Valley Oak Woodland
-  Riparian
- Waters**
-  Creek
-  Freshwater Pond



Vegetation Communities
and Habitats

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Figure 4b

armeniacus) was also observed in the understory, as well as a bunch grass that could potentially be a native fescue.

3.2.5 Riparian Woodlands

Coast live oak riparian forest, as well as mixed riparian woodlands occur immediately adjacent and in the vicinity of Segments 3a, 3b, and 3c following drainage ditches, South Branch Tularcitos Creek and Arroyo De Los Coches Creek. These stands include native species such as blue elderberry (*Sambucus nigra* ssp. *caerulea*), northern California black walnut (*Juglans hindsii*), western sycamore, narrow-leaved willow (*Salix exigua*), red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), and California buckeye (*Aesculus californica*).

3.2.6 California Sagebrush Scrub

Small communities of fragmented and isolated California sagebrush scrub (*Artemisia californica* Alliance) are located along Segment 3d in Summitpointe Golf Course north, downslope from Pebble Beach Court, and along the north side (south facing slope) of Calaveras Road on Segment 3c.

3.3 WATERSHED AND DRAINAGES

The project area is located within the Coyote Watershed (Hydrologic Unit Code # 18050003) (USGS, 1978) which drains directly to the San Francisco Bay. Aquatic and wetland habitats adjacent to the project area include ponds, seasonal wetland, creeks, and mixed riparian woodlands. Creeks adjacent to the project area include the South Branch Tularcitos Creek adjacent to Old Calaveras Road, Tularcitos Creek, Arroyo de los Coches adjacent to Calaveras Road, an unnamed drainage along Downing Road at the Ed Levin County Park that drains into Arroyo de los Coches near Calaveras Road, and Berryessa Creek which runs north/south through the City of Milpitas. Tularcitos Creek, Arroyo de los Coches and South Branch Tularcitos Creek all contain areas with dense mixed riparian woodlands (Figure 4).

Segment 1 of the pipeline alignment crosses over Berryessa Creek at Los Coches Street and Segment 5 crosses at Ames Avenue (Figure 4b). At both locations, the creek is channelized and was inundated during the December 18, 2015 site visit. The channel is approximately 20 feet wide at the Los Coches crossing and approximately 6 feet wide at the Ames Avenue crossing. The channel was not accessible, but horsetail (*Equisetum* sp.) and potentially other hydrophytic vegetation were observed along the channel. The channel drains directly to the San Francisco Bay.

Lakes and Ponds

Several freshwater ponds occur along the northern most project alignment (Segments 3a, 3b, 3c, and 3d) including Sandy Wool Lake and ponds within Summitpointe Golf Course. Sandy Wool Lake is a perennial lake and supports recreational fishing. The pond nearest Calaveras Creek Drive and Country Club Drive was inundated during the December 2, 2015 reconnaissance survey. A small fringe of hydrophytic vegetation occurs along the edges of the pond. Hydrophytic vegetation includes brass buttons (*Cotula coronopifolia*), tall flatsedge (*Cyperus eragrostis*), rabbitsfoots grass (*Polypogon monspeliensis*), Dallis grass (*Paspalum dilatatum*),



watercress (*Nasturtium officinale*), and rush (*Juncus* sp.). Small willow (*Salix* sp.) saplings were present in low numbers along this pond. This pond is hydrologically connected to adjacent ponds on the golf club by an unnamed drainage that flows west through the golf club and is a tributary to Calera Creek. Segment 3d traverses a pond on the golf course that occurs along a tributary to Calera Creek that flows through the golf course and connects several golf course ponds. One of the ponds has dense patches of broad-leaved cattail (*Typha latifolia*) and California bulrush (*Schoenoplectus californicus*) and it includes watercress and tall flatsedge. A pond with a similar floristic composition is located at the northwestern corner of the golf course property along this same drainage. There are two larger, isolated ponds on the golf course property with sporadic patches of California bulrush. These ponds are perennial and support fish.

Seasonal Wetland

Segment 3d crosses through the outer edge of a seasonal wetland at the Summitpointe Golf Club. This wetland is hydrologically connected to a pond by culverts. It was dry during the December 2, 2015 site visit with the exception of some moist surface patches. Algal mats and hydrophytic vegetation were observed here including tall flatsedge, Bermuda grass (*Cynodon dactylon*), hyssop loosestrife (*Lythrum hyssopifolia*), and rabbitsfoot grass, with sparse willow seedlings.

3.4 GENERAL WILDLIFE

Wildlife was observed throughout the proposed project area and vicinity during the field surveys. All observed wildlife was consistent with the typical wildlife that would be expected in mixed urban/suburban residential areas, golf course developments, or otherwise associated with urbanized areas. Appendix E provides a list of animal species that were observed in the proposed project area and in the vicinity during the December 2 and 18, 2015 site surveys. Mammals observed include black-tailed jackrabbit (*Lepus californicus*) and black-tailed deer (*Odocoileus hemionus*). Several small mammal burrows were observed in non-native grasslands in the project area at the Summitpointe Golf Club and at the Ed Levin County Park. California ground squirrels (*Otospermophilus beecheyi*) were observed in close proximity to these burrows at the Ed Levin County Park paragliding area. These burrows were examined and did not show sign of burrowing owl use. Common bird species that are adapted to urban environments were also observed and included American crow (*Corvus brachyrhynchos*), American robin (*Turdus migratorius*), and western scrub-jay (*Aphelocoma californica*). Other birds that were observed include ruby-crowned kinglet (*Regulus calendula*) and red-tailed hawk (*Buteo jamaicensis*). Two special status birds were observed during surveys: a northern harrier (*Circus cyaneus*) was observed perching and preening in an ornamental tree near Sandy Wool Lake at the staging area; and a white-tailed kite (*Elanus leucurus*) was observed foraging in non-native grasslands adjacent to the northern end of the Summitpointe Golf Club on December 2, 2015. Two white-tailed kites were also observed in this vicinity of the project area on December 18, 2015.



4 SENSITIVE BIOLOGICAL RESOURCES

This section discusses the potential for special status species to occur within the proposed project area. 'Potential to occur' is based on the presence or absence of suitable habitat for each special status species reported in the scientific database queries and literature review that was conducted for the proposed project. The CNDDDB documents 52 special status species within a five-mile radius of the proposed project. Several scientific databases were queried, multiple sources of pertinent scientific literature were reviewed, and the technical expertise of Rincon's staff was utilized to determine the habitat requirements, ecology, and distribution of the special status species potentially affected by the proposed project. All occurrences of special status species, sensitive vegetation communities, and USFWS designated critical habitats that have been reported by the resource agencies within a five-mile radius of the project area were plotted on a map using Geographic Information System (GIS) software (Figure 3). As discussed in Section 2.2, an analysis was conducted to determine which of the regionally occurring special status species have potential to occur within the project area (Appendix B).

4.1 SPECIAL STATUS SPECIES

Fifty two special status plants, animals, and vegetation communities were evaluated for their potential to occur in the proposed project area (Appendix B). Figure 3 shows the CNDDDB records of special status species within five miles of the proposed project area. Rincon staff determined that the project area contains suitable habitat for two special status plant species and 12 special status animal species. Three of these animals are listed either under FESA, CESA, or both.

Most of the project area is developed with patches of ruderal habitat and lacks suitable habitat for many special status species. However, Segment 3 and its alternatives will traverse several undeveloped areas including non-native grasslands, remnant oak woodlands, creeks and associated riparian woodlands, and fragmented patches of California sagebrush scrub. Breeding habitat for California tiger salamander, California red-legged frog, foothill yellow-legged frog, and western pond turtle are not present in the project area; however, potential breeding habitats are present adjacent to the project area. In addition, there are CNDDDB records of these species within five miles of the project area. Trees in and adjacent to the project area provide potential suitable nesting habitat for special status raptors, such as golden eagles and white-tailed kites, as well as birds protected under the MBTA and CFGC. Special status species with potential to occur within the project area are discussed in greater detail below.

4.1.1 Special Status Plant Species

For the purpose of this report, special status species are those plants and animals listed, proposed for listing, or candidates for listing as Threatened or Endangered by the USFWS or National Marine Fisheries Service under the FESA; those listed or proposed for listing as Rare, Threatened, or Endangered by the CDFW under the CESA; and those recognized as Species of Special Concern (SSC) by the CDFW. In addition, plant species are ranked by the CDFW California Rare Plant Rank (CRPR) system, as follows, with species occurring on lists 1 and 2 considered special status:



- List 1A = Plants presumed extinct in California
- List 1B.1 = Rare or endangered in California and elsewhere; seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)
- List 1B.2 = Rare or endangered in California and elsewhere; fairly endangered in California (20-80% occurrences threatened)
- List 1B.3 = Rare or endangered in California and elsewhere, not very endangered in California (<20% of occurrences threatened or no current threats known)
- List 2 = Rare, threatened or endangered in California, but more common elsewhere.
- List 3=Need more information (a Review List)
- List 4=Plants of Limited Distribution (a Watch List)

Furthermore, biological resources, including vegetation communities, are ranked globally (G) and State-wide (S) 1 through 5 based on NatureServe's (2010) methodologies, as follows, with those alliances ranked G or S as 1 through 3 considered special status:

- G1 or S1 - Critically Imperiled Globally or State-wide
- G2 or S2 - Imperiled Globally or State-wide
- G3 or S3 - Vulnerable to extirpation or extinction Globally or State-wide
- G4 or S4 - Apparently secure Globally or State-wide
- G5 or S5 - Secure Globally or State-wide.

There are two CNDDDB records of two special status plant species that overlap the proposed project area (Figure 3); Congdon's tarplant (*Astragalus tener* var. *tener*) and alkali milk vetch (*Centromadia parryi* ssp. *congdonii*). However, the proposed project area lacks alkaline seasonal wetland habitats that these species typically inhabit; therefore these species are not expected to occur. The following two special status plants have potential to occur on the proposed project area:

Fragrant fritillary (*Fritillaria liliacea*) - CRPR 1B.2. There is one CNDDDB record of fragrant fritillary within five miles of the proposed project area (Figure 3). This record is located at Alum Rock Park in the City of San Jose and is approximately 2.9 miles southeast of the proposed project area. This occurrence is presumed extant but is based on a 1941 herbarium specimen and was not relocated in a survey for it in 1994. Fragrant fritillary could potentially occur on the project area in oak woodlands and grasslands.

Arcuate bush-mallow (*Malacothamnus arcuatus*) - CRPR 1B.2. There is one record of arcuate bush mallow within five miles of the project area (Figure 3). It was recorded along Alviso Slough in 1955 and is presumed extant. This occurrence is located approximately 4.6 miles west of the proposed project area. Arcuate bush mallow could potentially occur on the project area in oak woodlands.

4.1.2 Special Status Animal Species

Special status animal species were evaluated for their potential to occur in the project area (Appendix B). Twelve special status animal species have the potential to occur based on the presence of suitable habitat in the project area or adjacent to the project area. Three of these



species are listed under the FESA and/or CESA. Habitat for special status species in the project area is limited because the project area is narrow and linear and most of it is in existing paved roads. The project area lacks breeding habitat for most of these special status species except for California tiger salamander and western pond turtle, and five special status birds. Mature trees in oak woodlands and adjacent riparian woodlands that overhang the project area potentially provide breeding habitat for white-tailed kite and grasslands provide nesting and foraging habitat for northern harriers. White-tailed kite and northern harrier were observed on the project area. Pallid bats could roost in hollow trees on the project area and forage in oak woodlands and grasslands on the project area. California red-legged frog, California tiger salamander, foothill yellow-legged frog, northern western pond turtle, and Alameda whipsnake could potentially breed in the vicinity of the project area and use the uplands on the project area or disperse through habitats on the project area. The following discussions provide more detail about special status animal species that have the potential to occur on the project area:

California tiger salamander (*Ambystoma californiense*) - FT, ST. California tiger salamander (CTS) is a lowland species found primarily in grasslands and low foothill and oak woodland habitats located within approximately 2,200 ft (671 meters [m]) of breeding pools (Trenham and Shaffer, 2005). CTS breed in long-lasting rain pools (e.g., seasonal ponds, vernal pools, slow moving streams) that are often turbid, and occasionally in permanent ponds lacking fish predators. During the non-breeding season, adults occur in upland habitats and occupy ground squirrel or pocket gopher burrows. They migrate nocturnally to aquatic sites to breed during relatively warm winter or spring rains. CTS has been documented to migrate up to 1.0 mile from breeding sites to refugia sites (Austin and Shaffer, 1992). Following breeding, adults move 9 to 518 ft (3 to 158 m) away from breeding ponds within the first night (Loredo et al., 1996; Trenham, 2001). Most salamanders continue to move to different burrow systems further from the pond over the next one to four months, with an average distance of 374 ft (114 m) from the pond (Trenham, 2001). Trenham and Shaffer (2005) estimated that conserving upland habitats within 2,200 ft (671 m) of breeding ponds would protect 95 percent of CTS at their study location in Solano County.

There are eighteen CNDDDB occurrences within a 5-mile radius of the project area (Figure 3). The closest CNDDDB record to the project area is an extirpated record from 1895 that is located approximately 0.28 mile south of the project area. The next closet CNDDDB record to the project area is located in the City of Fremont approximately 1.2 miles northwest of the project area. This occurrence consists of three juvenile larvae that were captured and released in 1995. Another record is approximately 1.4 miles east of the project area in the vicinity of Calaveras Road at a pond where egg masses were observed in 2010. Suitable breeding habitat for this species does not occur in the project area, but is documented within 1.2 miles of the project area. CTS have been documented migrating up to 1.0 mile from breeding sites to refugia sites, and California ground squirrels and small mammal burrows adjacent to the project area could provide refugia for dispersing CTS during the non-breeding migration periods.

California red-legged frog (*Rana draytonii*) - FT, SSC. The California red-legged frog (CRLF) inhabits quiet pools of streams, marshes, and ponds. All life history stages are most likely to be encountered in and around breeding sites, which include coastal lagoons, marshes, springs, permanent and semi-permanent natural ponds, and ponded and backwater portions of streams, as well as artificial impoundments such as stock ponds, irrigation ponds, and siltation ponds. Essential breeding should hold water for a minimum of 20 weeks in all but the driest of years



(USFWS, 2010). Eggs are typically deposited in permanent pools, attached to emergent vegetation.

CRLF generally prefer to remain close to water, but disperse along streams and in uplands. During rainy periods CRLF disperse through uplands for distances up to 2.0 miles (USFWS, 2002) and have been documented dispersing along stream systems up to 1.7 miles from breeding sites (Fellers and Kleeman, 2007). During the summer, they disperse in response to drying breeding habitats, to forage, and to seek moist habitats. They seek refuge in rodent burrows, boulders, logs, trees, organic debris, drains, watering troughs, abandoned sheds, and hay-ricks (Fellers and Kleeman, 2007; USFWS, 2002). CRLF will also move from breeding sites to forage in riparian vegetation (USFWS, 2002).

There are five CNDDDB occurrences within a 5-mile radius of the project area (Figure 3). The closest CNDDDB record to the project area is approximately 1.67 miles east where 2 adults were observed in a reservoir in 1994. The other records are located between 3.24 and 4.78 miles from the project. The project area is not within federally designated critical habitat for CRLF (Figure 3; USFWS 2015a).

The ponds on Summitpointe Golf Course and Sandy Wool Lake are not likely to provide breeding habitat for CRLF, but grasslands on-site potentially provides upland refugia habitat and estivation habitat in on-site burrows. Creeks adjacent to the project area also could provide suitable breeding habitat and migration corridors for CRLF. CRLF have been documented migrating up to 2.0 miles from breeding sites to refugia sites and may cross the alignment while dispersing to breeding or foraging habitat.

Foothill yellow-legged frog (*Rana boylei*) – State Species of Special Concern (SSC). Foothill yellow-legged frog inhabits partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats, including chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, riparian forest, and riparian woodland. They need at least some cobble-sized substrate for egg-laying and at least 15 weeks to attain metamorphosis.

There are three CNDDDB occurrences within a 5-mile radius of the project area (Figure 3). The closest record is approximately 3.8 miles northeast of the project area in Alameda Creek, and a second record in Alameda Creek is 4.9 miles northeast of the project area. The third record is approximately 5.0 miles east of the project area Arroyo Hondo near Calaveras Reservoir.

The project area does not provide breeding habitat for this species, but creeks adjacent to the area could provide breeding habitat and foothill yellow-legged frogs, could be distributed throughout upland grasslands on the project area.

Western pond turtle (*Emys marmorata*) – SSC. Western pond turtle (WPT) is an aquatic turtle that occurs in ponds, marshes, rivers, streams and irrigation ditches that typically support aquatic vegetation. It requires downed logs, rocks, mats of vegetation, or exposed banks for basking. Western pond turtle lay their eggs in nests that are dug along the banks of streams or other uplands in sandy, friable soils. Northern western pond turtles, especially those that reside in creeks are also known to over winter in upland habitats. Upland movements can be quite extensive and individuals have been recorded nesting or overwintering hundreds of feet from



aquatic habitats. The typical nesting season is usually from April through August; however, variation exists depending upon geographic location.

There are three CNDDDB occurrences within a 5-mile radius of the project area (Figure 3). The closest record is approximately 3.6 miles southeast of the project area at the Overfelt Gardens pond in San Jose. Another record is at the Guadalupe River in San Jose, approximately 3.8 miles southwest of the project area. The third record is approximately 4.0 miles northeast of the project area at Alameda Creek. The project area is not within federally designated critical habitat for this species (Figure 3; USFWS 2015a).

Though the larger ponds and Sandy Wool Lake could potentially provide suitable aquatic habitat for western pond turtles, it is unlikely that the species would be found there due to the level of human disturbance and lack of observation records within 3 miles of the project. Creeks in the vicinity of the project can provide suitable habitat for this species, depending on water levels throughout the year.

Alameda whipsnake (*Masticophis lateralis euryxanthus*) -FT, ST. This species is typically found in chaparral and scrub habitats but will also use adjacent grassland, oak savanna and woodland habitats. It is typically found mostly on south-facing slopes and ravines, with rock outcrops, deep crevices or abundant rodent burrows, where shrubs form a vegetative mosaic with oak trees and grasslands. They shelter in rocks, outcrops, or small mammal burrows.

There are eleven CNDDDB occurrences within a 5-mile radius of the project area (Figure 3). The locations for these records are broadly mapped by 7.5-minute USGS quadrangle. There is one record in the *Calaveras Reservoir* quadrangle and other records are in surrounding quadrangles.

The project area does not provide core chaparral habitat for this species, but California sagebrush scrub occurs adjacent to the project area on south-facing slopes along Calaveras Road which could be occupied by Alameda whipsnake. They could disperse throughout the project area or use grassland or oak woodland habitat within the project area. Rodent burrows in the project area could provide shelter for this species.

Golden eagle (*Aquila chrysaetos*) -FP. Golden eagles occur in broadleaved upland forest, cismontane woodland, coastal prairie, Great Basin grassland, Great Basin scrub, lower montane coniferous forest, pinon and juniper woodlands, upper montane coniferous forest, and valley and foothill grassland. Cliff-walled canyons provide nesting habitat in most parts of range and they will nest in large trees in open areas.

There are two CNDDDB breeding records of this species within a 5-mile radius of the project area (Figure 3). The closest record is approximately 0.86 mile north of the project area at Calera Creek. The other record is approximately 3.27 miles north of the project area at the Mission Peak Regional Preserve.

Large undeveloped grasslands are present adjacent to the northern portions of the project area that are suitable foraging habitat for this species.



Burrowing owl (*Athene cunicularia*) - SSC. Burrowing owls occur in open dry grasslands, desert habitats and in open areas within pinyon-juniper shrublands. They typically prefer habitats with low growing vegetation in open areas, which a perch site nearby for hunting. They are subterranean nesters that are dependent upon burrowing mammals, most notably, the California ground squirrel.

There are thirty-three CNDDDB occurrences within 5 miles of the project area (Figure 3). The closet record is an extirpated record approximately 0.4 mile west of the project area. The next closest record is approximately 1.41 miles west of the project area and it is possibly extirpated. Most of the other records are west of the project area, with the closet record located approximately 2.43 miles away.

Mammal burrows that were the appropriate size for burrowing owls were observed in the project area during the December reconnaissance surveys. Though a formal survey was not conducted, the burrows were evaluated for the presence of burrowing owl sign (pellets, white wash, etc.) but no sign was observed. A complex of burrows is located at the Summitpointe Golf Course on a slope with non-native grasses that is adjacent to a small coast live oak stand. Another burrow complex was observed near the project area in grasslands at the Ed Levin County Park paragliding area in Segment 3a and 3b. Other burrows were present at the Summitpointe Golf Course and in other non-native grassland locations throughout the project area.

White-tailed kite (*Elanus leucurus*) - FP. This species occurs in grasslands, meadows, marshes, dry farmed agricultural fields, savannahs, relatively open oak woodlands, and other relatively open lowland scrublands. It uses dense-topped trees in riparian corridors for nesting and perching.

Mature trees in the project area potentially provide nesting habitat for this species. The remnant coast live oak and valley oak woodlands, and mixed riparian habitats in the project area provide nesting habitat and grasslands in the project area provide foraging habitat. A white-tailed kite was observed foraging in the project area in the grasslands adjacent to the golf course on December 2, 2015. Two white-tailed kites were observed foraging in the vicinity of this area on December 18, 2015. There are two CNNDDB records of this species within five miles of the project area (Figure 3). White-tailed kites are fairly adapted to urban environments and could be present either nesting or foraging in and immediately adjacent to the project area.

Northern harrier (*Circus cyaneus*) -SSC. Northern harriers occur in open areas, particularly in grasslands, wet meadows and marshes, and require larger areas for foraging. It nests and forages in grasslands, from salt grass in desert sink to mountain cienagas. Nests are typically on ground in tall grasses or shrubby vegetation.

There are no CNNDDB records of this species within five miles of the project area (Figure 3); however, this species was observed perched and preening in an ornamental tree at the Sandy Wool Lake parking lot staging area. Nesting and foraging habitat occur in the vicinity of Segment 3 and its alternatives.



Tricolored blackbird (*Agelaius tricolor*) – Federal Candidate Endangered, SSC.

In 1991, the USFWS included this species as a candidate (Category 2) for federal listing as either threatened or endangered (59 Federal Register [219]:58990). After decline of population numbers in the 1980s, CDFW added the Tricolored blackbird to its list of Bird Species of Special Concern in 1990. Tricolored Blackbirds are permanent residents of California, though they can migrate extensive distances within their range during the breeding season and in winter (DeHaven et al. 1975a, Hamilton 1998). With the diminishing natural flooding cycle and loss of most native wetland and upland habitats in the Central Valley, Tricolored Blackbirds now forage primarily in artificial habitats in Central and Southern California. Ideal foraging conditions for this species are created when shallow flood irrigation, mowing, or grazing keeps the vegetation at an optimal height. The Tricolored blackbird relies on vegetation associated with ponds (cattails and bulrush) for nesting (Beedy and Hamilton 1999) and they have been documented using seasonal wetlands for foraging and breeding habitat. They are a colonial species and will form large nesting colonies if enough suitable habitat is present (Shuford, W. D., 2008).

Even though the nearest documented occurrence of this species in CNDDDB is approximately 3.5 miles northwest of the project area, suitable foraging habitat for this species occurs adjacent to Segment 3 and its alternatives, and marginal breeding habitat may be present in restricted areas along Segment 3c. The portions of the project area within unincorporated Santa Clara County fall within the Santa Clara County Habitat Conservation Plan (HCP) area. The Santa Clara Valley HCP includes required tricolored blackbird surveys in some of parts of the project area.

Pallid bat (*Antrozous pallidus*) – SSC. Pallid bats typically inhabit deserts, grasslands, shrublands, woodlands and forests in arid to semi-arid areas. They are most common in open, dry habitats with rocky areas for roosting. They prefer rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Their day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings. Pallid bats are very sensitive to disturbance of roosting sites.

There are two CNDDDB records of this species within five miles of the project area (Figure 3). The closet record is approximately 2.8 miles north of the project area. The other record is from 1943 and is generally mapped in the San Jose area. This record is approximately 4.49 miles southwest of the project area.

Pallid bats may potentially roost in rock outcrops or trees on the project area. Non-native grasslands on the project area potentially provide limited foraging habitat.

Nesting Birds

Nesting birds, in addition to those mentioned above, are afforded protection under the CFGC and/or MBTA and have the potential to occur within the project area. Landscaped areas with mature trees and shrubs, ruderal areas with grassland vegetation or cleared areas, and oak woodland and grassland immediately adjacent to the project area all provide suitable nesting habitat for a wide variety of birds.



4.2 SENSITIVE PLANT COMMUNITIES

Valley oak woodland (*Quercus lobata* alliance) is a sensitive plant community that is recognized by the CDFW (2010). The valley oak stand on-site is a remnant of a larger stand. An unidentified fescue grass was observed in the understory of this woodland. Fescue grasslands such as Idaho fescue grassland (*Festuca idahoensis* Alliance) or red fescue (*Festuca rubra* Alliance) are also considered a sensitive vegetation community.

Segments 3a, 3b, and 3c are located within a Santa Clara County mapped oak woodland area (ICF, 2012). Coast live oak and blue oak (*Quercus douglasii*) woodlands are considered sensitive by Santa Clara County and evaluation of impacts to oak woodlands may be required as part of the environmental analysis conducted in compliance with CEQA.

4.3 JURISDICTIONAL WATERS AND WETLANDS

The BSA is located within the Coyote Watershed (Hydrologic Unit Code # 18050003) (USGS, 1978) which drains directly to the San Francisco Bay. Blue line streams in the project vicinity include Berryessa Creek, Tularcitos Creek, South Branch Tularcitos Creek and Arroyo De Los Coches Creek are expected to be subject to the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB) and the U.S. Army Corps of Engineers (USACE). Segment 1 crosses over Berryessa Creek at Los Coches Street and Segment 5 crosses the creek at Ames Avenue (Figure 4b). At both locations, the creek is channelized.

Other water features including, freshwater ponds, seasonal wetlands, and riparian woodlands traversing and adjacent to the BSA are potentially subject to the jurisdiction of the RWQCB, USACE, and CDFW pursuant to Section 1600 et. seq. of the California Fish and Game Code (CFGF).

4.4 WILDLIFE MOVEMENT

Segment 3 and its alternatives follow existing roads within undeveloped areas, the entirety of which is within a mapped California Essential Habitat Connectivity (CEHC) area. Woodlands and riparian corridors along creeks are also expected to be used as migration corridors by local wildlife. Project activities may temporarily displace wildlife during construction; however, the proposed project would involve the installation of pipes underground along existing roads, and would not change the function of the area to serve as wildlife movement corridors. All other segments are proposed within developed areas that are not expected to serve as wildlife movement corridors; therefore, no further analysis of wildlife movement is included within this report.



4.5 RESOURCES PROTECTED BY LOCAL POLICIES AND ORDINANCES

4.5.1 City of Milpitas Protected Trees

The *Tree Maintenance and Protection Ordinance of the City of Milpitas (Ord. 201.5 (1) (part), 10/16/07)* regulates removing and pruning trees in or adjacent to streets and within easements, in rights-of-way and other public places within the City of Milpitas and on private property.

This ordinance defines protected trees as:

- All trees which have a fifty-six-inch (56") or greater circumference of any trunk measured 4 ½ feet from the ground and located on developed residential property.
- All trees which have a thirty-seven-inch (37") or greater circumference of any trunk measured 4 ½ feet from the ground and located on developed commercial or industrial property.
- All trees which have a thirty-seven-inch (37") or greater circumference of any trunk measured 4 ½ feet from the ground, when removal relates to any transaction for which zoning approval or subdivision approval is required.
- Any tree existing at the time of a zoning or subdivision approval and was a specific subject of such approval or otherwise covered under the second bullet above.
- All trees which have a thirty-seven-inch (37") or greater circumference of any trunk measured 4 ½ feet from the ground and located on a vacant, undeveloped or underdeveloped property.
- All heritage trees or groves. A heritage tree or grove has historical significance, special character or community benefit, and is specifically designated by resolution of the City Council.
- An oak tree (*Quercus* spp.) which is native to California and has a trunk with a circumference of 31.4 inches (diameter of ten [10] inches) or more, measured at fifty-four (54) inches above natural grade. Trees with more than one trunk shall be measured at the point where the trunks divide, with the exception of trees that are under twelve (12) feet in height, which will be exempt from this section.
- All trees other than oaks which have a trunk with a circumference of 47.1 inches (diameter of fifteen (15) inches) or more, measured fifty-four (54) inches above natural grade. Trees with more than one trunk shall be measured at the point where the trunks divide, with the exception of trees that are less than twelve (12) feet in height, which will be exempt from this section. (Ord. 928 Section 1 (part), 2004).

A permit is required from the City Public Works Department for the removal or pruning of a protected tree. A permit is not required for removing less than 10 percent of the tree canopy, sucker growth, watersprouts, and low hanging branches less than 4" in diameter causing obstructions.

Compensation for removing protected trees consists of the following:

- Reimbursement to the City for the full costs of time and materials to prune, remove and/or replace trees within the public right-of-way or tree planting easements;



- Reimbursement to the City for the value of the removed or damaged tree as determined by an arborist certified by the International Society of Arboriculture utilizing the current edition of the "*Guide for Plant Appraisal, International Society of Arboriculture*"; or
- A combination of the above terms as determined by the Public Works Director.

4.5.2 Santa Clara County Protected Trees and Heritage Trees

In accordance with Santa Clara County's Municipal Code for *Tree Preservation and Removal (Division C-16)*, a permit is required from the County Planning Office or the Department of Roads and Airports for the removal or adverse pruning of protected trees. Removal of any tree, regardless of size, located within a County road right-of-way shall require an encroachment permit from the Department of Roads and Airports not less than 60 days prior to planned removal.

A protected tree consists of any of the following:

- Any tree having a main trunk or stem measuring 37.7 inches or greater in circumference (12 inches or more in diameter) at a height of 4½ feet above ground level, or in the case of multi-trunk trees a total of 75.4 inches in circumference (24 inches or more of the diameter) of all trunks in the following areas of the County: Parcels zoned "Hillsides" (three acres or less); Parcels within a "-d" (Design Review) combining zoning district; Parcels within the Los Gatos Hillside Specific Plan Area.
- Any tree within the "-h1" Historic Preservation zoning district for New Almaden having a main trunk or stem measuring six inches or more in diameter (18.8 inches or greater in circumference) at a height of 4.5 feet above ground level, or in the case of multi-trunk trees, a total of 12 inches in diameter (37.7 inches in circumference) of all trunks at 4.5 feet above ground. For parcels having a base zoning district of "HS, Hillside" within the "-h1" combining zoning district, this provision supersedes C16-3(a)(1).
- Any heritage tree, as that term is defined in Section C16-2.
- Any tree required to be planted as a replacement for an unlawfully removed tree, pursuant to Section C16-17(e) of this division.
- Any tree that was required to be planted or retained by the conditions of approval for any use permit, building site approval, grading permit, architectural and site approval (ASA), design review, special permit or subdivision.
- On any property owned or leased by the County, any tree which measures over 37.7 inches in circumference (12 inches or more in diameter) measured 4.5 feet above the ground, or which exceeds 20 feet in height.
- Any tree, regardless of size, within road rights-of-way and easements of the County, whether within or without the unincorporated territory of the County.

Heritage trees include any tree which, because of its history, girth, height, species, or other unique quality, has been recommended for inclusion on the heritage resource inventory by the Historical Heritage Commission and found by the Board of Supervisors to have special significance to the community, and which has therefore been included in the heritage resource



inventory adopted by resolution of the Board of Supervisors. The removal of a heritage tree requires that the Planning Office submit the permit to County Historical Heritage Commission (HHC). A written evaluation of the status of the tree may be required at the expense of the applicant and the Commission will conduct a hearing to approve or deny the permit application. A tree survey and replanting plan that describes tree replacement details is required as part of the permit application. Replacement trees should be in-kind if the removed tree is a native species, or an appropriate species as determined by the Planning Office. Replacement trees should be at least a five-gallon size. The ratio of trees removed to trees planted shall be determined by the Planning Department. An erosion control plan may also be required where deemed appropriate by the County.

4.6 HABITAT CONSERVATION PLANS

4.6.1 Santa Clara Valley Habitat Conservation Plan (HCP)

A majority of Segment 3 and its alternatives occurs within the Santa Clara Valley Habitat Conservation Plan (HCP) area. The HCP, which was finalized in 2012 and was developed by the Santa Clara Valley Transportation Agency, Santa Clara Valley Water District, County of Santa Clara, and the Cities of Gilroy, Morgan Hill, and San Jose covers a majority of Santa Clara County. The Habitat Plan provides streamlined state and federal permitting for public and private projects, while offering a comprehensive and effective way to address impacts of those projects on endangered and threatened species and their habitats, as well as acquire and manage a Reserve System that will serve as mitigation for project impacts and contribute to the recovery of the species covered by the HCP (ICF, 2012). The project area in part (Segment 3) includes areas defined in the Santa Clara Valley HCP as tri-colored blackbird survey areas, and falls within Fee Zone A.

Public or quasi-public entities, such as special districts or entities not subject to the jurisdiction of the Co-Permittees, may conduct or initiate projects or ongoing activities within the permit area that could affect listed species and that may require take authorization from USFWS and/or CDFW. However, municipalities that are not a Co-Permittee are not eligible to participate using this status, therefore the City of Milpitas is not expected to be eligible to seek coverage under the HCP (ICF, 2012) for impacts within the City boundaries. However, for impacts within unincorporated Santa Clara County, the City of Milpitas, as a Participating Special Entity, would be required to go through the Santa Clara Valley HCP review process, meet HCP conditions for surveys and reporting, pay required fees, and comply with pertinent HCP impact avoidance measures. The City would proceed as if they were a typical private developer, and submit the Private Application Form to the Habitat agency for review.

No other adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan overlaps the proposed project so HCPs and other conservation plans are therefore not discussed further in this report.



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5 IMPACT ANALYSIS AND MITIGATION MEASURES

This section discusses the possible significant impacts (CEQA) and adverse effects (NEPA) to biological resources that may occur from implementation of the proposed project and proposes appropriate mitigation measures that would reduce potential impacts/adverse effects to less than significant levels. The criteria used to evaluate potential project-related impacts to biological resources are presented in Section 2.1.2.

The proposed project has the potential to impact protected trees, nesting birds and jurisdictional waters. Alignments utilizing existing pipes are not expected to have a significant impact to biological resources, especially if staging of equipment and crews is conducted within previously developed areas and roadways. Installation of new pipelines, and the pump station and water tank at Summitpointe Golf Course, would cause ground disturbance potentially in areas where sensitive biological resources may be present. These activities have the potential to have a significant impact or adverse effect on biological resources; however, impacts/effects would be reduced or eliminated if development is sited in roadways and previously disturbed or developed areas. Potential impacts/adverse effects to special status biological resources, as well as avoidance and mitigation measures for the proposed project are discussed in greater detail below.

Impact BIO-1 Special Status Plants

There is no suitable habitat for special status plants in Segments 1, 2, 4 and 5 or their alternative alignments, therefore no impacts to special status plant species are expected to occur in these segments as a result of the proposed project.

Proposed project activities associated with Segment 3 and its alternatives have the potential to result in direct impacts/ adverse effects to two special status (but non-listed) plant species through direct removal, and/ or as a result of vehicle activity. Therefore, the following avoidance, minimization, and mitigation measures are recommended for Segment 3 and its alternatives to reduce potential impacts to special status plants to less than significant levels.

- Prior to the commencement of any ground-disturbing activities, surveys for special status plants shall be conducted in suitable habitats within the proposed project impact area. The surveys shall be conducted in general accordance with CDFW (CDFG, 2009), California Native Plant Society (CNPS, 2001), and U.S. Fish and Wildlife Service (USFWS, 2000) protocols for special status plant surveys. The survey area shall be traversed on foot by walking meandering transects to ensure thorough coverage of the area; surveys shall be timed to ensure adequate coverage of the spring and summer bloom periods; and the surveys shall be floristic in nature (meaning all plant species observed shall be identified to a sufficient level to determine rarity). If no special status plant species are observed during the focused surveys, no further action shall be required.
 - If special status plants are observed, all special status plant species identified on-site shall be mapped onto a site-specific aerial photograph and their location shall be recorded with a Global Positioning System (GPS). Field data shall be recorded on the population size, cover, and associated species. The results shall be evaluated in the context of known local populations (the definition of local



population should be determined by a qualified botanist on a species by species basis) for any non-listed special status plant species to determine the extent of impacts to the local population. If impacts are determined to affect less than 10% of the local population of any non-listed special status plant species, no further measures are necessary. If impacts are determined to affect more than 10% of the local population of any non-listed special status plant species the following measure should be implemented.

- If feasible, measures shall be implemented to avoid special status plants within the limits of disturbance. If special status plants cannot be avoided, a qualified biologist shall prepare a mitigation and monitoring plan in consultation with wildlife agencies. If a state-listed plant species would be impacted, the restoration plan shall be submitted to CDFW for review and approval. If a federally listed plant species would be impacted, the restoration plan shall be submitted to USFWS for review and approval. The Special Status Plant Mitigation and Monitoring Plan (Plan) shall be developed by a qualified biologist. The Plan shall include at a minimum the following: the species and number of individuals to be relocated; a map depicting the relocation planting area; replanting site preparation methods; irrigation and weed control methods; schedule of replanting and monitoring activities; success criteria; reporting requirements; and a list of suitable contingency measures in the event of relocation failure.

Impact BIO-2 **Special Status Animals**

There is no suitable habitat for special status animals in segments 1, 2, 4 and 5 or their alternative alignments (excluding birds which is discussed further under Impact BIO-3 Nesting Birds), therefore no impacts to special status wildlife is expected to occur in these segments as a result of the proposed project.

Segment 3 and its alternative alignments, as well as the proposed pump station and water tank at Summitpointe Golf Course have the potential to result in direct impacts to special status animals which as discussed in further detail below. Therefore following avoidance, minimization, and mitigation measures are recommended for these areas to reduce potential impacts/adverse effects to special status animals.

California Red-legged Frog (CRLF), Alameda Whipsnake, and California Tiger Salamander (CTS) - Recommended Measures

Proposed project activities associated with Segment 3 and its alternative alignments have the potential to impact federal and/or state listed species such as California Red-legged Frog (CRLF), Alameda Whipsnake, and California Tiger Salamander (CTS). Therefore, the following measures are recommended to avoid take of these species and reduce impacts to less than significant levels. Projects that would result in "take" of any federally listed threatened or endangered species are required to obtain permits from the USFWS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of the FESA, depending on the involvement by the federal government in permitting and/or funding of the project. The permitting process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. "Take" under federal definition means to harass, harm (which



includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of the FESA; however, the USFWS advise project applicants that they could be elevated to listed status at any time. The California Endangered Species Act (CESA) (Fish and Game Code Section 2050 et seq.) regulates take of State listed as threatened or endangered species. Take authorized under the CESA is restricted to direct mortality of a listed species and does not prohibit indirect harm by way of habitat modification. The California Department of Fish and Wildlife (CDFW) prohibits take for species designated as Fully Protected.

- If feasible, initial ground disturbing activities adjacent to suitable habitat for these species should be conducted between May 1 and October 31 during dry weather conditions to minimize the potential for encountering CRLF, Alameda whipsnake, and CTS. Work should be restricted to daylight hours.
- Prior to start of project activities, a qualified biologist shall prepare and administer a Worker Environmental Awareness Program (WEAP) training to familiarize all personnel conducting project activities with the identification and life-history of CRLF, Alameda whipsnake, and CTS, and other special status species that have the potential to occur in the project area.
- A focused habitat assessment to determine the potential for CRLF, Alameda whipsnake, and CTS shall be conducted by a qualified biologist for all areas within 150 feet of the project alignment that may contain suitable habitat for the species (Segment 3 and its alternatives only). If suitable habitat is present and would be directly impacted by the project, protocol-level surveys to determine presence or absence of CRLF, Alameda whipsnake, and CTS are recommended. According to the CTS survey protocol (USFWS, 2003), a drift fence study conducted during each of two fall/winter rainy seasons with aquatic sampling in spring between the two fall/winter is the primary method used to study CTS in upland habitats.
- A qualified biologist shall be present on site during initial ground disturbance in portions of the project area that are suitable habitat for Alameda whipsnake, suitable upland habitat for CRLF or CTS or within 150 feet of potential CRLF or CTS aquatic habitat.
 - If CRLF, Alameda whipsnake, and CTS are found to be present, a federal permit for incidental take would be required from the USFWS under either Section 7 or Section 10 of the FESA. Take can be authorized under Section 7 if a federal agency is involved in the project (e.g., permitting or funding) and agrees to be the lead agency requesting Section 7 consultation. This consultation process takes 135 days from the official request that includes the preparation of a Biological Assessment (BA) of the predicted impacts of the project on the species with measures to avoid, minimize, and mitigate for such impacts. The result is a Biological Opinion (BO) issued by the USFWS that includes specified life stage(s) and allowable number of individuals for each life stage to which take can occur in addition to terms and conditions to minimize and offset such take. Take may or may not be issued for operation of the project. Section 10 is used to authorize incidental take when no federal permit or funding is involved. This process can take years to complete and involves preparation of a Habitat Conservation Plan (HCP) typically including protection of the covered species at a specific location



- in perpetuity. If no federal nexus can be invoked, the only option is to obtain a Section 10 permit through preparation and approval of a HCP.
- The CDFW may also require an incidental take permit (ITP) pursuant to Section 2081 of the California Fish and Game Code if CTS or Alameda Whipsnake presence is assumed or they are found to be onsite. The issuance of an ITP is dependent upon the following: 1) the authorized take is incidental to an otherwise lawful activity; 2) the impacts of the authorized take are minimized and fully mitigated; 3) the measures required to minimize and fully mitigate the impacts of the authorized take are roughly proportional in extent to the impact of the taking on the species, maintain the applicant's objectives to the greatest extent possible, and are capable of successful implementation; 4) adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with and the effectiveness of the measures; and 5) issuance of the permit will not jeopardize the continued existence of a State-listed species.
 - An alternative, depending on the planned components and activities of the project would be to obtain a "may affect but is not likely to adversely affect" concurrence from USFWS and/or consistency determination from CDFW through informal consultation.
 - To ensure that diseases are not conveyed between work sites by the qualified biologist, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force should be followed at all times.

Western Burrowing Owl - Recommended Measures

- Prior to start of project activities within suitable habitat for western burrowing owl, a qualified biologist shall conduct a WEAP training to familiarize all personnel conducting project activities with the identification and life-history of burrowing owls.
- Prior to the commencement of construction activities within suitable habitat for western burrowing owl, a qualified biologist should conduct protocol surveys in accordance with the 2012 CDFW Staff Report on Burrowing Owl Mitigation within all areas of the project area that contain suitable habitat for the species. The survey methodology shall consist of walking parallel transects 7 to 20 meters apart, adjusting for vegetation height and density as needed, and noting any potential burrows with fresh burrowing owl sign or presence of burrowing owls. Copies of the survey results shall be submitted to CDFW and Santa Clara County.
- If burrowing owls are detected on-site, no ground-disturbing activities, such as vegetation clearance or grading, shall be permitted within a buffer of no fewer than 100 meters (330 feet) from an occupied burrow during the breeding season (February 1 to August 31), unless otherwise authorized by CDFW. During the non-breeding (winter) season (September 1 to January 31), ground-disturbing work can proceed as long as the work occurs no closer than 50 meters (165 feet) from the burrow. Depending on the level of disturbance, a smaller buffer may be established in consultation with CDFW.
- If burrow avoidance is infeasible during the non-breeding season or during the breeding season (February 1 through August 31), where resident owls have not yet begun egg laying or incubation, or where the juveniles are foraging independently and capable of independent survival, a qualified biologist shall implement a passive relocation program in accordance with Appendix E1 (i.e., Example Components for Burrowing Owl



Artificial Burrow and Exclusion Plans) of the 2012 CDFW Staff Report on Burrowing Owl Mitigation.

- If passive relocation is required, a qualified biologist shall prepare a Burrowing Owl Exclusion and Mitigation Plan and Mitigation Land Management Plan in accordance with CDFW's 2012 Staff Report on Burrowing Owl Mitigation and for review by CDFW prior to passive relocation activities. The Burrowing Owl Exclusion and Mitigation Plan shall include all necessary measures to minimize impacts to burrowing owls during passive relocation, including all necessary monitoring of owls and burrows during passive relocation efforts. The Mitigation Land Management Plan shall include a requirement for the permanent conservation of off-site Burrowing Owl Passive Relocation Compensatory Mitigation.
- If passive relocation is required, the project proponent shall implement the Mitigation Land Management Plan and permanently conserve off-site habitat suitable for burrowing owl at a ratio of 15 acres per passively relocated burrowing owl pair, not to exceed the size of the final project footprint. Land identified to mitigate for passive relocation of burrowing owl may be combined with other off-site mitigation requirements of the project if the compensatory habitat is deemed suitable to support the species. The Passive Relocation Compensatory Mitigation plan shall be approved by CDFW. If the project is located within the service area of a CDFW-approved burrowing owl conservation bank, the project proponent may purchase available burrowing owl conservation bank credits in lieu of placing off-site habitat into a conservation easement, if acceptable to the CDFW.
- The project proponent shall mitigate for the loss of acres of burrowing owl foraging habitat by providing habitat management lands at a ratio of ten acres per burrow identified within the final project footprint. These lands must be on suitable habitat for burrowing owl within the Santa Clara County HCP prior to completion of the project. Land identified to mitigate for foraging habitat may be combined with other offsite mitigation requirements of the proposed project if the compensatory habitat is deemed suitable. A Foraging Habitat Compensatory Mitigation Plan describing the proposed mitigation, including suitability for meeting the objectives of the mitigation, and methods for preserving the mitigation values of the habitat shall be provided to the City of Milpitas and CDFW for approval.

Foothill Yellow-legged Frog (FYLF) - Recommended Measures

No suitable habitat for this species occurs in Segments 1, 2, 4 and 5 or their alternative alignments. Only project activities associated with Segment 3 and its alternatives have the potential to result in direct impacts to FYLF. The following measures are recommended for Segment 3 and its alternatives only to reduce impacts to FYLF to less than significant levels.

- Prior to start of project activities, a qualified biologist shall conduct a WEAP training to familiarize all personnel conducting project activities with the identification and life-history of FYLF.
- A focused habitat assessment to determine the potential for FYLF shall be conducted by a qualified biologist for all areas within 150 feet of the project alignment that may contain suitable habitat for the species (Segment 3 and its alternatives only).
- If the focused habitat assessment finds no suitable aquatic habitat for this species occurs within 150 feet of the proposed project, no further action is necessary



- If suitable aquatic habitat for this species is identified within 150 feet of the proposed project a qualified biologist shall conduct a survey within 48 hours of initial ground disturbing activities within FYLF habitat. The survey area should include all potential suitable habitat in the project area and suitable habitat located within a 100 feet of the project area.
 - If an FYLF is encountered, all activities within 100 feet of the species shall cease until the species leaves the site. If the species has become entrapped in the project area, it will be safely relocated by a qualified biologist 100 feet from the project area.
 - To ensure that diseases are not conveyed between work sites by the qualified biologist, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force should be followed at all times.
- A qualified biologist shall be present on site during initial ground disturbance in portions of the project area that are suitable upland habitat for FYLF and within 150 feet of potential aquatic habitat.

Western Pond Turtle (WPT) - Recommended Measures

Only project activities associated with Segment 3 and its alternatives have the potential to result in direct impacts to WPT. The following measures are recommended for Segment 3 and its alternatives only to reduce impacts to WPT to less than significant levels.

- Prior to start of project activities, a qualified biologist should conduct a WEAP training to familiarize all personnel conducting project activities with the identification and life-history of WPT.
- A pre-construction survey for WPT shall be conducted within suitable habitat that will be impacted by the proposed project, plus a 50-foot buffer, no more than 7 days prior to the initiation of construction.
- A qualified biologist shall be present on site during activities within 150 feet of aquatic habitat.
- If WPT is found and these individuals are likely to be killed or injured by construction activities, construction activities within 100 feet of the animal shall cease until a qualified biologist can capture and relocate the animals from the project area. A qualified biologist(s) should relocate the individuals the shortest distance possible to a location that contains suitable habitat not likely to be affected by activities associated with the proposed project.

Roosting Pallid Bats - Recommended Measures

- Prior to start of project activities, a qualified biologist should conduct a WEAP training to familiarize all personnel conducting project activities with the identification and life-history of pallid bats.
- A qualified biologist shall conduct a pre-construction survey for roosting pallid bats. The survey shall be conducted within 50 feet of project activities within 15 days prior to any grading of rocky outcrops or removal of trees (particularly trees 12 inches in diameter or greater at 4.5 feet above grade with loose bark or other cavities).



- If active maternity roosts or non-breeding bat hibernacula are found in trees scheduled to be removed, relocation or other measures shall be determined in consultation with the County and/or CDFW, as appropriate, and a qualified biologist.

General Wildlife - Recommended Measures

Implementation of these recommended measures would reduce potential impacts to special status animals to less than significant levels.

- Prior to start of project activities, a qualified biologist should conduct a WEAP training to familiarize all personnel conducting project activities with the identification and life-history of special status wildlife and plants.
- A qualified biologist should conduct a survey within 7 days of initial ground disturbing activities within suitable habitat for special status species. The survey area should include the project area and a 150 foot buffer.
- All work areas within 150 feet of suitable aquatic habitat should be flagged for monitoring during construction activity.
- All trash should be removed from the site daily and disposed of properly to avoid attracting potential predators to the site.
- No pets should be permitted on-site during project activities.
- All vehicles and equipment should be in good working condition and free of leaks. All leaks should be contained and cleaned up immediately to reduce the potential or soil/vegetation contamination.
- All refueling, maintenance, and staging of equipment and vehicles should occur at least 100 feet from riparian habitat or water bodies and in a location from where a spill would not drain directly toward aquatic habitat (e.g., on a slope that drains away from the water).
- The number of access routes, size of staging areas, and the total area of the activity should be limited to the minimum necessary to achieve the project goals.
- The biologist(s) should maintain sufficiently detailed records of any individual observed, captured, relocated, etc., including size, coloration, any distinguishing features and photographs (preferably digital) to assist him or her in determining whether translocated animals are returning to the project area.
- No herbicide should be used within 50 feet of water ways.

Impact BIO-3 Nesting Birds

All alignments of the proposed project have potential to result in direct impacts to nesting birds, including raptors such as white-tailed kite, passerine species such as tri-colored blackbird, and other species protected under the MBTA and/or CFGC. Birds nesting on or adjacent to the project area during construction activities may be killed or injured by crushing or tree/shrub removal (direct impact) or may abandon active nests as a result of construction activity and/or noise (indirect impact). The following avoidance, minimization, and mitigation measures are recommended to reduce potential impacts/adverse effects to nesting birds.

Recommended Measures

- Nesting bird surveys are not required for construction activities that occur between September 1 and January 31. If construction must occur within the bird breeding season



(February 1 through August 31), then no more than seven days prior to initiation of ground disturbance and/or vegetation removal, a nesting bird and raptor pre-construction survey should be conducted by a qualified biologist within the disturbance footprint plus a 300-foot buffer, where feasible. If the project is phased, a subsequent pre-construction nesting bird and raptor survey may be required prior to each phase of construction within the project area.

- Pre-construction nesting bird and raptor surveys should be conducted during the time of day when birds are active and should be of sufficient duration to reliably conclude presence/absence of nesting birds and raptors onsite and within the designated vicinity. A report of the nesting bird and raptor survey results, if applicable, should be submitted to the lead agency for review and approval prior to land use clearance for grading.
- If nests are found, their locations should be flagged. An appropriate avoidance buffer ranging in size from 25 to 50 feet for song birds, and up to 250 feet for raptors depending upon the species and the proposed work activity should be determined and demarcated by a qualified biologist with bright orange construction fencing or other suitable flagging. Active nests should be monitored at a minimum of once per week until it has been determined that the nest is no longer being used by either the young or adults. No ground disturbance should occur within this buffer until the qualified biologist confirms that the breeding/nesting is completed and all the young have fledged.

Implementation of these recommended measures would reduce potential impacts to nesting birds and raptors to less than significant levels.

Impact BIO-4 **Sensitive Vegetation Communities**

Vegetation communities with a ranking of G or S as 1 through 3 considered special-status. This includes the Valley oak stand along Segment 3d. Oak woodland communities with a ranking of S4 may not require analysis under CEQA, however the County of Santa Clara considers oak woodland to be a sensitive biological resource. In addition, riparian habitats typically fall under the jurisdiction of CDFW. Impacts can be considered significant and adverse effects may be substantial without mitigation.

Recommended Measures

- **Vegetation Mapping.** Following the selection of the preferred alignment, a qualified biologist shall conduct a survey to map all existing vegetation communities within 150 feet of the proposed alignment. Vegetation mapping will be done by visual observation and walking surveys. The extent of vegetation communities will be recorded using a GPS and vegetation classification will follow in *The Manual of California Vegetation*.
- **Minimize impacts to the Native Vegetation.** Habitat disturbance to mapped special status communities and woodlands shall be minimized to the extent feasible.
- **Riparian Habitats.** If impacts to riparian communities cannot be avoided then a Streambed Alteration Agreement pursuant to Section 1600 et seq. of the California Fish and Game Code will be required. Temporary impacts to riparian habitats should be mitigated at no less than a 1:1 ratio. More information regarding requirements under section 1600 of the California Fish and Game Code are discussed below in Impact BIO-5 Jurisdictional Waters.



- **Protected Tree Survey.** Following the selection of the preferred alignment, a tree survey shall be conducted by an International Society of Arboriculture (ISA) Certified Arborist/ City Qualified Arborist for protected trees that occur in riparian habitats within 25 feet of the impact area. The tree survey should identify protected trees (defined below in Impact BIO-6 Protected trees), including protected oak trees and woodlands. During the survey, each tree having a caliper measure of 1 inch at 12 inches above grade shall be assigned a number and will be physically tagged in the field. The biologist shall document qualifying data for each oak tree on the site, including:
 - Location
 - Height
 - Diameter of dripline
 - Number and size of trunks
 - Health characteristics

- **Impacts to Valley Oak Woodlands.** Valley oak woodland was identified in Segments 3d. If impacts to Valley oak woodland cannot be avoided, the habitat should be mitigated as follows:
 - A tree removal plan and an arborist report (if requested) shall be submitted which identifies the species type, diameter, and amount of canopy of oak trees proposed for removal within the woodland.
 - Planting Replacement Oak Trees:

Tree replacement can be dependent upon the amount of canopy of the removed trees, the number and size of trees to be removed, steepness of the slope on which trees will be removed, or the amount of room on a parcel in which trees can be planted. The objective of tree planting shall be to restore former oak woodland at a ratio of 2:1 or 3:1 based on the condition of the oak woodland habitat. 2:1 restoration is recommended for medium quality oak woodland habitat, and 3:1 restoration is recommended for high quality oak woodland habitat.

 - The following minimum standard mitigation ratios shall be used unless otherwise accepted by the Santa Clara County Planning Office based on site specific characteristics:
 - For the removal of one small tree (5" -18"):
 - (2) 24" boxed trees or (3) 15 gallon trees
 - For the removal of 1 medium tree (18-24"):
 - (3) 24" boxed trees or (4) 15 gallon trees
 - For the removal of a tree larger than 24":
 - (4) 24" boxed trees or (5) 15 gallon trees
 - All tree replacement shall be with in-kind species.
 - A Tree Planting and Maintenance Plan shall be submitted showing species, size, spacing and location of plantings and the location and species of established vegetation. The plan may be required to be prepared by a Licensed Landscape Architect will be subject to approval by the Santa Clara County Planning Office.



- **Impacts to Other Oak Woodlands.** Segments 3a, 3b, and 3c are located within a Santa Clara County mapped oak woodland area (ICF, 2012). Per Santa Clara County thresholds, if project activities were to impact a half-acre or more of “other oak woodland”, this would be considered a significant impact. Therefore, the following mitigation measures are options to reduce impacts to oak woodlands to less than significant levels if impacts are expected to exceed 0.5 acre:
 - If the proposed project is within the mapped oak woodland area, and proposes oak tree removal, a tree removal plan and an arborist report (if requested) shall be submitted which identifies the species type, diameter, and amount of canopy of oak trees proposed for removal within the woodland.
 - Planting Replacement Oak Trees
Planting of oaks shall not fulfill more than 50 percent of the mitigation requirement for the proposed project. Tree replacement can be dependent upon the amount of canopy of the removed trees, the number and size of trees to be removed, steepness of the slope on which trees will be removed, or the amount of room on a parcel in which trees can be planted. The objective of tree planting shall be to restore former oak woodland at a ratio of 2:1 or 3:1 based on the condition of the oak woodland habitat. 2:1 restoration is recommended for medium quality oak woodland habitat, and 3:1 restoration is recommended for high quality oak woodland habitat.
 - The following minimum standard mitigation ratios shall be used unless other ratios are approved by the Lead Agencies’ Planning Office(s) based on site specific characteristics:
 - For the removal of one small tree (5”-18”):
 - (2) 24” boxed trees or (3) 15 gallon trees
 - For the removal of 1 medium tree (18-24”):
 - (3) 24” boxed trees or (4) 15 gallon trees
 - For the removal of a tree larger than 24”:
 - (4) 24” boxed trees or (5) 15 gallon trees
 - All tree replacement shall be with in-kind species.
 - A Tree Planting and Maintenance Plan shall be submitted showing species, size, spacing and location of plantings and the location and species of established vegetation. The plan may be required to be prepared by a Licensed Landscape Architect will be subject to approval by the Santa Clara County Planning Office.
 - Conservation Easement.
Protect existing native oak trees on or off the proposed project area from future development through a conservation easement or fee title dedication to the County or a land conservation group approved by the County. Oak woodland offered as mitigation must be configured in such a manner as to best preserve the integrity of the oak ecosystem and minimize the ratio of edge to area. Priority should be given to conserving oak habitat adjacent to existing woodlands under conservation easements, public lands or open space lands. As a general guide, the protection of existing oak woodlands through conservation easements should



mitigate for the loss of oaks at a ratio equal to 2:1 or 3:1 based on the condition of the oak woodland habitat. 2:1 conservation is recommended for medium quality oak woodland habitat, and 3:1 conservation is recommended for high quality oak woodland habitat. Land proposed as mitigation, when viewed with adjacent conservation land, should not result in conserved parcels of less than 1 acre.

o Other options.

If the onsite preservation of oak woodlands and / or tree planting is not feasible, oak woodland mitigation may occur in the form of in lieu fees paid to an agency, acceptable to the Planning Office, which shall use the fees for the preservation, restoration, or creation of oak woodland habitat. There must be a direct nexus between the amount of fees paid and mitigation required in terms of oak tree replacement and oak woodland preservation.

- In-lieu fees shall be paid to a natural resource agency or nonprofit organization (i.e. Open Space, Parks) for planting of oak trees to create oak woodland habitat located in Santa Clara County. The project proponent must obtain documentation from the local agency or organization confirming receipt of the payment, and that the funds will be used for planting of oak trees for preservation, restoration, or creation of oak woodland habitat at the required ratio

Impact BIO-5 **Jurisdictional Waters**

The proposed project has potential to result in direct impacts to jurisdictional waters and non-wetland waters. The following avoidance, minimization, and mitigation measures are recommended to reduce potential impacts/adverse effects to these features.

Recommended Measures

- To determine the presence and extent of federal and state waters that may fall under the jurisdiction of the CDFW, USACE, or RWQCB a formal jurisdictional delineation should be conducted for project activities that have the potential to impact jurisdictional waters. The delineation should be conducted in accordance with the USACE Wetlands Delineation Manual (Environmental Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (United States Army Corps of Engineers, 2008). If jurisdictional areas are expected to be impacted, then the RWQCB will require a Waste Discharge Requirements (WDR) permit and/or Section 401 Water Quality Certification (depending upon whether or not the feature falls under federal jurisdiction). If CDFW asserts its jurisdictional authority, then a Streambed Alteration Agreement pursuant to Section 1600 et seq. of the California Fish and Game Code could also be required prior to construction within the areas of CDFW jurisdiction. If the USACE asserts its authority, then a permit pursuant to Section 404 of the Clean Water Act will likely be required.
- Temporary impacts to jurisdictional features should be compensated at a minimum 1:1 ratio and permanent impacts at a minimum 2:1 ratio to reduce impacts to less than significant under CEQA. Mitigation should be based on the type of impact and the type of habitat impacted. Final ratios negotiated through the agency permitting process may differ, but mitigation must meet the minimum ratios outlined above.



- Best Management Practices, such as silt fencing, that will protect jurisdictional areas from erosion and sedimentation shall be implemented during project construction activities.

Impact BIO-6 **Protected Trees**

All alignments within the proposed project have the potential to impact trees considered protected by the City of Milpitas or the County of Santa Clara. Protected trees under these municipalities are described in Section 4.5.1 and 4.5.2 of this report. Accordance with the Tree Maintenance and Protection Ordinance of the City of Milpitas (Ord. 201.5 (1) (part) for activities that may impact protected trees within the City of Milpitas are expected to reduce impacts to special status trees to less than significant. Accordance with the with the Santa Clara County's Municipal Code for *Tree Preservation and Removal (Division C-16)*, for activities that may impact protected trees in unincorporated areas of Santa Clara County are expected to reduce impacts/adverse effects to special status trees to less than significant. Note that Impact BIO-6 addresses potential impacts to trees outside of oak woodlands discussed in Impact BIO-4 above.

Recommended Measures

- Following the selection of the preferred alignment, a tree survey shall be conducted by an International Society of Arboriculture (ISA) Certified Arborist/City Qualified Arborist for protected trees that occur within 25 feet of the impact area. The tree survey should identify protected trees (defined below in E6-Protected trees), including protected oak trees and woodlands. During the survey, each tree having a caliper measure of 1 inch at 12 inches above grade shall be assigned a number and will be physically tagged in the field.
- The Tree Maintenance and Protection Ordinance of the City of Milpitas (Ord. 201.5 (1) (part), 10/16/07) regulates removing and pruning trees in or adjacent to streets and within easements, in rights-of-way and other public places within the City of Milpitas and on private property. A permit is required from the City Public Works Department for the removal or pruning of a protected tree. A permit is not required for removing less than 10 percent of the tree canopy, sucker growth, watersprouts, and low hanging branches less than 4" in diameter causing obstructions.
 - Compensation for removing protected trees consists of the following:
 - Reimbursement to the City for the full costs of time and materials to prune, remove and/or replace trees within the public right-of-way or tree planting easements;
 - Reimbursement to the City for the value of the removed or damaged tree as determined by an arborist certified by the International Society of Arboriculture utilizing the current edition of the "*Guide for Plant Appraisal, International Society of Arboriculture*"; or
 - A combination of the above terms as determined by the Public Works Director.
- In accordance with Santa Clara County's Municipal Code for *Tree Preservation and Removal (Division C-16)*, a permit is required from the County Planning Office or the Department of Roads and Airports for the removal or adverse pruning of protected trees. Removal of any tree, regardless of size, located within a County road right-of-way shall require an encroachment permit from the Department of Roads and Airports not



less than 60 days prior to planned removal. Heritage trees include any tree which, because of its history, girth, height, species, or other unique quality, has been recommended for inclusion on the heritage resource inventory by the Historical Heritage Commission and found by the Board of Supervisors to have special significance to the community, and which has therefore been included in the heritage resource inventory adopted by resolution of the Board of Supervisors. The removal of a heritage tree requires that the Planning Office submit the permit to County Historical Heritage Commission (HHC).

- A written evaluation of the status of the tree may be required at the expense of the applicant and the Commission will conduct a hearing to approve or deny the permit application.
 - A tree survey and replanting plan that describes tree replacement details is required as part of the permit application. Replacement trees should be in-kind if the removed tree is a native species, or an appropriate species as determined by the Planning Office.
 - Replacement trees should be at least a five-gallon size. The ratio of trees removed to trees planted shall be determined by the Planning Department.
 - An erosion control plan may also be required where deemed appropriate by the County.



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6 LIMITATIONS, ASSUMPTIONS, AND USER RELIANCE

This BRA has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The biological investigation is limited by the scope of work performed; namely, only a reconnaissance survey was conducted. Biological surveys for the presence or absence of certain taxa have been conducted as part of this assessment but were not performed during a particular blooming period, nesting period, or particular portion of the season when positive identification would be expected if present, and therefore, cannot be considered definitive. The biological surveys are limited also by the environmental conditions present at the time of the surveys. In addition, general biological (or protocol) surveys do not guarantee that the organisms are not present and will not be discovered in the future within the site. In particular, mobile wildlife species could occupy the site on a transient basis, or re-establish populations in the future. Our field studies were based on current industry practices, which change over time and may not be applicable in the future. No other guarantees or warranties, expressed or implied, are provided. The findings and opinions conveyed in this report are based on findings derived from site reconnaissance, jurisdictional areas, review of CNDDDB RareFind3, and specified historical and literature sources. Standard data sources relied upon during the completion of this report, such as the CNDDDB, may vary with regard to accuracy and completeness. In particular, the CNDDDB is compiled from research and observations reported to CDFW that may or may not have been the result of comprehensive or site-specific field surveys. Although Rincon believes the data sources are reasonably reliable, Rincon cannot and does not guarantee the authenticity or reliability of the data sources it has used. Additionally, pursuant to our contract, the data sources reviewed included only those that are practically reviewable without the need for extraordinary research and analysis.



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Appendix A

Regulatory Framework

Appendix A Regulatory Framework

The following is a brief summary of the regulatory context under which biological resources are managed at the federal and state levels. A number of federal and state statutes provide a regulatory structure that guides the protection of biological resources. Agencies with the responsibility and regulatory guiding documents for protection of biological resources within the project area include:

- *U.S. Army Corps of Engineers (wetlands and other waters of the United States);*
- *U.S. Fish and Wildlife Service (federally listed species and migratory birds);*
- *California Department Fish and Wildlife (formerly California Department of Fish and Game) (riparian areas and other waters of the State, state-listed species);*
- *Regional Water Quality Control Board (waters of the State).*

These agencies are responsible for ensuring the implementation of regulations under the following acts and laws:

- *California Environmental Quality Act (CEQA);*
- *Federal Endangered Species Act (FESA);*
- *California Endangered Species Act (CESA);*
- *Federal Clean Water Act (CWA);*
- *California Fish and Game Code (CFGC);*
- *Migratory Bird Treaty Act (MBTA);*
- *The Bald and Golden Eagle Protection Act; and*
- *Porter-Cologne Water Quality Control Act.*

Federal Regulations

Federal Endangered Species Act. The Endangered Species Act (ESA) provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The lead federal agencies for implementing ESA are the U.S. Fish and Wildlife Service (USFWS) and the U.S. National Oceanic and Atmospheric Administration Fisheries Service or National Marine Fisheries Service (NMFS). The USFWS maintains a worldwide list of endangered species. Species include birds, insects, fish, reptiles, mammals, crustaceans, flowers, grasses, and trees.

The law requires federal agencies, in consultation with the USFWS and/or NMFS, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. The law also prohibits any action that causes a "taking" of any listed species of endangered fish or wildlife. Likewise, import, export, interstate, and foreign commerce of listed species are all generally prohibited.

Clean Water Act and U.S. Army Corps of Engineers. Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) has authority to regulate activities that could discharge fill of material or otherwise adversely modify wetlands or other "waters of the

United States.” Perennial and intermittent creeks are considered waters of the United States if they are hydrologically connected to other jurisdictional waters. The USACE also implements the federal policy embodied in Executive Order 11990, which is intended to result in no net loss of wetland value or acres. In achieving the goals of the Clean Water Act, the USACE seeks to avoid adverse impacts and offset unavoidable adverse impacts on existing aquatic resources. Any fill or adverse modification of wetlands that are hydrologically connected to jurisdictional waters would require a permit from the USACE prior to the start of work. Typically, when a project involves impacts to waters of the United States, the goal of no net loss of wetland acres or values is met through compensatory mitigation involving the creation or enhancement of similar habitats.

State Water Resources Control Board. The CWA established the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards, granting these agencies the responsibility for controlling water quality in California. This act created a water quality policy, enforced standards for water quality, and regulated the discharge of pollutants from point and non-point sources. The State Control Board was additionally authorized to establish water quality guidelines for long range resource planning concerning ground and surface water management and the use of recycled water. This act has become the cornerstone of water protection regulations in California and was used as the basis of several sections of the Federal Water Pollution Control Act Amendments of 1972.

Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act (Cal. Water Code § 13000 et seq.) provides for implementation of the federal CWA by SWRCB, including issuance of Section 401 Certifications and Section 402 NPDES Permits. Issuance of a Section 401 Certification requires documenting compliance with state water quality standards, including watershed plans, designated beneficial uses, and the total maximum daily load (TMDL) program. The Porter-Cologne Water Quality Control Act requires the regulation of all pollutant discharges, including wastes in Project runoff that could affect the quality of the state’s water. Any entity proposing to discharge a waste must file a Report of Waste Discharge with the appropriate RWQCB or SWRCB. The RWQCBs are responsible for implementing CWA Sections 401, 402, and 303(d). The act also provides for the development and periodic reviews of basin plans that designate beneficial uses of California’s major rivers and groundwater basins and establish water quality objectives for those waters. The Act regulates discharges that could affect the quality of waters of the state and requires a waste discharge requirements (WDR) form be obtained for discharges, including fill of wetlands that are not otherwise authorized by Section 404 or Section 402 of the federal CWA.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act (16 United States Code [USC] Section 703-711) implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Under the Act, taking, killing or possessing migratory birds is unlawful. Unless permitted by regulations, the Act provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. According to the Act, a person, association, partnership or corporation which violates the Act or its regulations is guilty of a misdemeanor and subject to a fine of up to \$500, jail up to six months, or both. Anyone who knowingly takes a migratory bird and intends

to, offers to, or actually sells or barter the bird is guilty of a felony, with fines up to \$2,000, jail up to two years, or both. (Permissible fines are increased significantly by the Sentencing Reform Act of 1984, as amended in 1987, which is summarized separately in this Handbook.). The Act should not be construed to prevent states and territories from making or enforcing laws or regulations not inconsistent with the Act or which give further protection to migratory birds, nests and eggs, if such laws and regulations do not extend open seasons.

The Bald and Golden Eagle Protection Act. The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), enacted in 1940, and amended several times since then, prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." As defined by the act "Disturb" means: "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior." In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment. A violation of the Act can result in a fine of \$100,000 (\$200,000 for organizations), imprisonment for one year, or both, for a first offense. Penalties increase substantially for additional offenses, and a second violation of this Act is a felony.

U.S. Fish and Wildlife Service and National Marine Fisheries Service. The USFWS implements the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (16 USC Section 668). The USFWS and NMFS share responsibility for implementing the FESA (16 USC § 153 *et seq.*). The USFWS generally implements the FESA for terrestrial and freshwater species, while the NMFS implements the FESA for marine and anadromous species. Projects that would result in "take" of any federally listed threatened or endangered species are required to obtain permits from the USFWS or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of FESA, depending on the involvement by the federal government in permitting and/or funding of the project. The permitting process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species.

"Take" under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of FESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.

State Regulations

California Endangered Species Act. The California Endangered Species Act (CESA) states that all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved. The California Department of Fish and Wildlife will work with all interested persons, agencies and organizations to protect and preserve such sensitive resources and their habitats. CESA allows for take incidental to otherwise lawful activity. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate mitigation planning to offset project caused losses of listed species.

California Department of Fish and Wildlife. The California Department of Fish and Wildlife (CDFW, formerly the California Department of Fish and Game) derives its authority from the Fish and Game Code (Code) of California. The California Endangered Species Act (CESA) (Fish and Game Code Section 2050 *et. seq.*) prohibits take of state listed threatened, endangered or fully protected species. Take under CESA is restricted to direct mortality of a listed species and does not prohibit indirect harm by way of habitat modification. The CDFW also prohibits take for species designated as Fully Protected under Fish and Game Code.

California Fish and Game Code sections 3503, 3503.5, and 3511 describe unlawful take, possession, or destruction of birds, nests, and eggs. Fully protected birds (Section 3511) may not be taken or possessed except under specific permit. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs.

Species of Special Concern (SSC) is a category used by the CDFW for those species which are considered to be indicators of regional habitat changes or are considered to be potential future protected species. Species of Special Concern do not have any special legal status except that which may be afforded by the Fish and Game Code as noted above. The SSC category is intended by the CDFW for use as a management tool to include these species into special consideration when decisions are made concerning the development of natural lands.

The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (Fish and Game Code Section 1900 *et seq.*). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Under Section 1913(c) of the NPPA, the owner of land where a rare or endangered native plant is growing is required to notify the department at least 10 days in advance of changing the land use to allow for salvage of plant.

Perennial and intermittent streams and associated riparian vegetation, when present, also fall under the jurisdiction of the CDFW. Section 1600 *et seq.* of the Fish and Game Code (Lake and Streambed Alteration Agreements) gives the CDFW regulatory authority over work within the stream zone (which could extend to the 100-year flood plain) consisting of, but not limited to, the diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream or lake.

Regional Water Quality Control Board. The State Water Resources Control Board (SWRCB) and the local Central Coast Regional Water Quality Control Board (RWQCB) have jurisdiction over “waters of the State,” pursuant to the Porter-Cologne Water Quality Control Act, which are defined as any surface water or groundwater, including saline waters, within the boundaries of the State. The SWRCB has issued general Waste Discharge Requirements (WDRs) regarding discharges to “isolated” waters of the State (Water Quality Order No. 2004-0004-DWQ, Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction). The Central Coast RWQCB enforces actions under this general order for isolated waters not subject to federal jurisdiction, and is also responsible for the issuance of water quality certifications pursuant to Section 401 of the Clean Water Act for waters subject to federal jurisdiction.

Appendix B

Regionally Occurring Special Status Species

Appendix B - Regionally Occurring Special Status Species

Table B1. Special Status Plants

Scientific Name/ Common Name Family (Plants Only)	Status Federal/State/ CRPR- Other	Distribution	Habitat Requirements	Period of Identification	Rationale
Plants					
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch Fabaceae	--/--/1B.2	Alameda, Contra Costa*, Merced, Monterey*, Napa, San Benito*, Santa Clara*, San Francisco*, San Joaquin*, Solano, Sonoma*, Stanislaus*, and Yolo counties.	Occurs in alkaline regions within playas, adobe clay valley and foothill grassland, and vernal pools. Elevations: 1-60 meters.	March-June	No. Suitable habitat for this species does not occur within the project site. The project site does not support alkaline substrates.
<i>Atriplex depressa</i> brittlescale Chenopodiaceae	--/--/1B.2	Alameda, Contra Costa, Colusa, Fresno, Glenn, Kern, Merced, Solano, Stanislaus, Tulare, and Yolo counties.	Alkaline flats and scalds, and sandy soils in chenopod scrub, valley and foothill grassland, and meadows. Elevations: 1- 320 meters.	April-October	No. Suitable habitat for this species does not occur within the project site. The project site does not support alkaline substrates.
<i>Atriplex joaquinana</i> San Joaquin sparscale Chenopodiaceae	--/--/1B.2	<i>Alameda, Contra Costa, Colusa, Fresno, Gl enn, Merced, Monterey, Napa, San Benito, Santa Clara*, San Joaquin*, San Luis Obispo?, Solano, Tulare? *, and Yolo counties.</i>	<i>Occurs on alkaline substrates within chenopod scrub, meadows and seeps, playas, and valley and foothill grassland. Elevations: 1-835 meters.</i>	April - October	No. Suitable habitat for this species does not occur within the project site. The project site does not support alkaline substrates.
<i>Atriplex minuscula</i> lesser saltscale Chenopodiaceae	--/--/1B.1	Alameda, Butte, Fresno, Kern, Madera, Merced, Stanislaus*, and Tulare counties.	Alkaline, sandy soils in chenopod scrub, playas, and valley and foothill grassland. Elevations: 5-200 meters.	May - October	No. Suitable habitat for this species does not occur within the project site. The project site does not support alkaline substrates.

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Scientific Name/ Common Name Family (Plants Only)	Status Federal/State/ CRPR- Other	Distribution	Habitat Requirements	Period of Identification	Rationale
<i>Campanula exigua</i> chaparral harebell Campanulaceae	--/--/1B.2	Alameda, Contra Costa, Merced, San Benito, Santa Clara, and Stanislaus counties.	Chaparral in rocky, usually serpentinite substrates. Elevations: 275-1250 meters.	May - June	No. Suitable habitat for this species does not occur within the project site. The project site does not support serpentinite substrates.
<i>Centromadia parryi</i> ssp. <i>congdonii</i> Congdon's tarplant Asteraceae	--/--/1B.1	Alameda, Contra Costa, Monterey, Santa Clara, Santa Cruz*, San Luis Obispo, San Mateo, and Solano* counties.	Occurs on alkaline substrates within valley and foothill grassland. Elevations: 0-230 meters.	May-November	No. Suitable habitat for this species does not occur within the project site. The project site does not support alkaline substrates.
<i>Chloropyron maritimum</i> ssp. <i>palustre</i> Point Reyes salty bird's-beak Orobanchaceae	--/--/1B.2	Alameda*, Humboldt, Marin, Santa Clara*, San Francisco, San Mateo*, and Sonoma counties.	Coastal salt marsh. Elevations: 0-10 meters.	June - October	No. Suitable habitat for this species does not occur within the project site. The project site does not contain coastal salt marsh habitat.
<i>Chorizanthe robusta</i> var. <i>robusta</i> robust spineflower Polygonaceae	FE/--/1B.1	Alameda*, Monterey, Marin?, Santa Clara*, Santa Cruz, San Francisco, and San Mateo*, counties.	Cismontane woodland (openings), coastal dunes and coastal scrub. Sandy terraces and bluffs or in loose sand or gravel. Elevations: 3-120 meters.	April-September	No. Suitable habitat for this species does not occur within the project site. The project site does not support sandy substrates.
<i>Clarkia concinna</i> ssp. <i>automixa</i> Santa Clara red ribbons	--/--/4.3, S3	Northern Coast Ranges from Santa Clara County to Humboldt County and the Sierra foothills.	Chaparral and cismontane woodland on slopes and near drainages at elevations of 90 to 1,500 meters.	April - September	Yes. Oak woodlands in the project site are potentially suitable habitat for this species.
<i>Eryngium aristulatum</i> var. <i>hooveri</i> Hoover's button-celery Apiaceae	--/--/1B.1	Alameda, San Benito, Santa Clara*?, San Diego, and San Luis Obispo counties.	Vernal pools. Elevations: 3-45 meters.	June - August	No. Suitable habitat for this species does not occur within the project site. The project site does not contain vernal pool habitat.

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Scientific Name/ Common Name Family (Plants Only)	Status Federal/State/ CRPR- Other	Distribution	Habitat Requirements	Period of Identification	Rationale
<i>Fritillaria liliacea</i> fragrant fritillary Liliaceae	--/--/1B.2	Alameda, Contra Costa, Monterey, Marin, San Benito, Santa Clara, San Francisco, San Mateo, Solano, and Sonoma counties.	Often occurs on serpentine substrates within cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland. Elevations: 3-410 meters.	February-April	Yes. Oak woodlands and grasslands in the project site are potentially suitable habitat for this species.
<i>Lasthenia conjugens</i> Contra Costa goldfields Asteraceae	FE/--/1B.1	Alameda, Contra Costa, Mendocino*, Monterey, Marin, Napa, San Barbara*, Santa Clara*, San Francisco, San Mateo, Solano, and Sonoma counties.	In vernal pools, swales, and low depressions, in open grassy areas within valley and foothill grassland and cismontane woodland, and alkali playas. Extirpated from most of its range. 1-445 meters. Elevations: 0-470 meters.	March-June	No. Suitable habitat for this species does not occur within the project site. The project site does not contain vernal pool habitat.
<i>Malacothamnus arcuatus</i> arcuate bush-mallow Malvaceae	--/--/1B.2	Santa Clara, Santa Cruz, and San Mateo counties.	Chaparral and cismontane woodland. Elevations: 15-355 meters.	April - September	Yes. Oak woodlands in the project site are potentially suitable habitat for this species.
<i>Malacothamnus hallii</i> Hall's bush-mallow Malvaceae	--/--/1B.2	Contra Costa, Lake, Mendocino, Merced, Santa Clara, San Mateo, and Stanislaus counties.	Chaparral and coastal scrub. Elevations: 10-760 meters.	May - October	No. Suitable habitat for this species does not occur within the project site. The project site does not contain chaparral or coastal scrub habitats.
<i>Navarretia prostrata</i> prostrate vernal pool navarretia Polemoniaceae	--/--/1B.1	Alameda, Fresno, Los Angeles, Merced, Monterey, Orange, Riverside, San Bernardino*?, San Benito, Santa Clara, San Diego, and San Luis Obispo counties.	Alkaline soils in grassland or in vernal pools within coastal scrub and valley and foothill grassland habitats. Elevations: 3 - 1210 meters.	April - July	No. Suitable habitat for this species does not occur within the project site. The project site does not support alkaline substrates.

Scientific Name/ Common Name Family (Plants Only)	Status Federal/State/ CRPR- Other	Distribution	Habitat Requirements	Period of Identification	Rationale
<i>Plagiobothrys glaber</i> hairless popcornflower Boraginaceae	--/--/1A	San Felipe*, Hollister*, Los Gatos*, San Jose West*, San Jose East*, Altamont*, Dublin, Hayward, Newark*, and San Rafael* counties.	Coastal salt marshes and alkaline meadows. Elevations 5-180 meters.	March - May	No. Last confirmed sighting in 1954. Possibly relocated near Antioch; identification uncertain. Suitable habitat for this species does not occur within the project site.
<i>Sidalcea malachroides</i> mapleleaf checkerbloom	--/--/4.2, S3	Del Norte, Humboldt, Mendicino, Monterey, Santa Clara, Santa Cruz, and Sonoma counties.	In clearings in broadleaved upland forest, coastal prairie, coastal scrub, and north coast coniferous forest near the coast at elevations from 0 to 730 meters; often in disturbed areas.	March-August	No. Suitable habitat for this species does not occur within the project site. The project site lacks upland and coniferous forests, coastal prairie, and coastal scrub habitats.
<i>Streptanthus albidus</i> ssp. <i>peramoenus</i> most beautiful jewel-flower Brassicaceae	--/--/1B.2	Alameda, Contra Costa, Fresno, Monterey Santa Clara, and San Luis Obispo counties.	Chaparral, valley and foothill grassland, and cismontane woodland on ridges and slopes in serpentine outcrops. Elevations: 95-1000 meters.	March-October	No. Suitable habitat for this species does not occur within the project site. The project site does not support serpentine substrates.
<i>Suaeda californica</i> California seablite	FE/--/1B.1	Alameda*, Contra Costa*, Santa Clara*, San Francisco*, and San Luis Obispo counties.	Coastal salt marsh. Elevations: 0-15 meters.	July-October	No. Suitable habitat for this species does not occur within the project site. The project site does not contain coastal salt marsh habitat.
<i>Trifolium hydrophilum</i> saline clover Fabaceae	--/--/1B.2	Alameda, Contra Costa, Colusa?, Lake, Monterey, Napa, Sacramento, San Benito, Santa Clara, Santa Cruz, San Luis Obispo, San Mateo, Solano, Sonoma, and Yolo counties.	Mesic, alkaline areas in vernal pools, seasonal wetlands, and marshes within valley and foothill grassland. Elevations: 0-300 meters.	April-June	No. Suitable habitat for this species does not occur within the project site. The project site does not support alkaline substrates.

Table B2. Special Status Wildlife

Scientific Name/ Common Name Family (Plants Only)	Status Federal/State/ CRPR- Other	Distribution	Habitat Requirements	Period of Identification	Rationale
Invertebrates					
<i>Bombus crotchii</i> Crotch bumble bee	--/--, S1S2	Coastal California east to Sierra-Cascade crest and south into Mexico	Grassland and scrub habitats; food plant genera include <i>Antirrhinum</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , and <i>Eriogonum</i>	Spring through Summer	Yes. Suitable habitat for this species' food plant genera occurs in grassland on the project site.
<i>Lepidurus packardi</i> vernal pool tadpole shrimp	FE/--/--	Sacramento Valley	Inhabits vernal pools, seasonal wetlands, and swales.	Winter to Spring	No. Suitable habitat for this species does not occur within the project site (i.e., no vernal pools occur onsite).
Fish					
<i>Oncorhynchus mykiss irideus</i> steelhead - central California coast DPS	FT/--/--	Central coastal California	From Russian River, south to Soquel Creek and to, but not including, Pajaro River. Also San Francisco and San Pablo Bay basins.	Year Round	No. Suitable habitat for this species does not occur within the project site (i.e., no streams occur onsite).
Amphibians					
<i>Ambystoma californiense</i> California tiger salamander Central CA DPS	FT/CT, CSSC/--	Central Valley and surrounding Sierra Nevada foothills and Coast Ranges, occurs from northern Yolo County, near the town of Dunnigan, southward to northwestern Kern County and northern Tulare and Kings counties. Along the coast the range includes southern San Mateo County south to San Luis Obispo County.	Breeding and aestivation habitat includes vernal pools, seasonal and perennial ponds, and surrounding upland areas in grassland and oak savannah.	Adults: wet season (approximately September-April with at least 70% average rainfall) Aquatic Larvae: March-May	Yes. Suitable breeding habitat for this species does not occur in the project site, but is documented within 1.2 miles of the project site. The project site could provide suitable burrows for CTS and CTS could be dispersing throughout the project site during migration periods.

Scientific Name/ Common Name Family (Plants Only)	Status Federal/State/ CRPR- Other	Distribution	Habitat Requirements	Period of Identification	Rationale
<i>Rana boylei</i> foothill yellow-legged frog	--/CSSC/--	Occurs in the Coast Ranges from the Oregon border south to the Transverse Mountains in Los Angeles Co., in most of northern California west of the Cascade crest, and along the western flank of the Sierra south to Kern Co. Isolated population also known to occur in San Joaquin Co. in the Central Valley in Los Angeles County in the mountains.	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats, including chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, riparian forest, and riparian woodland. Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.	Year Round	Yes. Suitable breeding and upland habitat for this species potentially occurs in the project site. Small rodent burrows present in the project site could provide summer refugia and grasslands could provide dispersal habitat. There is a non-breeding record of FYLF within the project site.
<i>Rana draytonii</i> California red-legged frog	FT/CSSC/--	Found primarily in coastal drainages of central California, from Marin County, south to San Diego County. Also found inland as far north as Shasta County south, west of the crest of the Sierra Nevada in a few isolated locations, south to eastern Tulare County. Current range does not include the Central Valley.	Found in permanent and temporary pools of deep water in streams, marshes, and ponds with dense grassy, shrubby, or emergent vegetation and sometimes in stock ponds without emergent vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to upland aestivation habitat.	November-June	Yes. Suitable breeding and upland habitat for this species potentially occurs in the project site. Small rodent burrows present in the project site could provide summer refugia and grasslands could provide dispersal habitat. There is a non-breeding record of CRLF within the project site.
Reptiles					
<i>Emys marmorata</i> western pond turtle	--/CSSC/--	Found along the entire western part of California, including the coast ranges and the central valley, west of the crest of Cascades and Sierra Nevadas.	Occurs in ponds, marshes, rivers, streams, and irrigation canals with moderate amounts of riparian and emergent vegetation. Requires open sunny sites for basking and gently sloped open upland habitat for egg laying.	March-October	Yes. Potentially suitable aquatic and breeding habitat for this species occurs in the project site.

Scientific Name/ Common Name Family (Plants Only)	Status Federal/State/ CRPR- Other	Distribution	Habitat Requirements	Period of Identification	Rationale
<i>Masticophis lateralis euryxanthus</i> Alameda whipsnake	FT/ST/--	Inner Coast Range in western and central Contra Costa, Alameda, San Joaquin, and Santa Clara Counties (five isolated populations).	Typically found in chaparral and scrub habitats but will also use adjacent grassland, oak savanna and woodland habitats. Mostly south-facing slopes and ravines, with rock outcrops, deep crevices or abundant rodent burrows, where shrubs form a vegetative mosaic with oak trees and grasslands. They shelter in rocks, outcrops, or small mammal burrows.	Year round	Yes. Potentially suitable habitat for this species occurs in the project site in chaparral, riparian woodland, and oak woodlands, and grasslands.
Birds					
<i>Agelaius tricolor</i> tricolored blackbird	--/CE/--	Breeds primarily in the Central Valley and a few other locations west of the Cascades and Sierra Nevadas.	Requires riparian habitat, ponds, and other wetland features with emergent vegetation such as cattails or blackberry for nesting. Forages in open fields, grasslands, and agricultural croplands.	Year Round	No. Potentially suitable nesting habitat for this species does not occur in the project site.
<i>Aquila chrysaetos</i> golden eagle	--/ CFP/--	Resident and migrant in California. Breeds throughout California, except the Central Valley.	Broadleaved upland forest, cismontane woodland, coastal prairie, Great Basin grassland, Great Basin scrub, lower montane coniferous forest, pinon and juniper woodlands, upper montane coniferous forest, and valley and foothill grassland. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Year Round	Yes. Potentially suitable foraging habitat occurs adjacent to the project site.
<i>Ardea herodias</i> great blue heron	--/--, S4	Resident throughout most of California except at high elevation montane areas.	Shallow, open water in estuaries, and fresh and saline emergent wetlands; uses salt ponds in summer months. Perches and roosts in tall secluded trees. Usually nests in colonies in secluded large snags or live trees.	Year Round	No. Potentially suitable foraging and breeding habitat is not present within the project site.

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Scientific Name/ Common Name Family (Plants Only)	Status Federal/State/ CRPR- Other	Distribution	Habitat Requirements	Period of Identification	Rationale
<i>Athene cunicularia</i> burrowing owl	--/CSSC/--	Occurs throughout the Central Valley, the Modoc Plateau and northeastern California, and the southeastern portions of the State.	Occurs in open dry grasslands and desert habitats. Also occurs in open areas within pinyon-juniper shrublands.	Year Round	Yes. Potentially suitable habitat for this species occurs in the project site. Ground squirrels and burrows were observed in the project site. Fairly open non-native grasslands occur in the project site and adjacent to the project site.
<i>Accipiter striatus</i> Sharp-shinned hawk	--/--/, S4/WL	Winters throughout most of California except at high elevations of Sierra Nevada; year-round resident and breeder in mid-elevation habitats.	Cismontane woodland, lower montane coniferous forest, and riparian forest/woodland; prefers riparian areas. Wooded, north-facing slopes with plucking perches are critical requirements; nests within 275 feet of water in dense, small-tree conifer stands.	Winter (but potential for year round occurrence in project vicinity).	Yes. Limited suitable foraging habitat for this species is present on the project site. Not expected to breed on-site due to lack of specific breeding habitat requirements.
<i>Buteo swainsoni</i> Swainson's hawk	--/ CT/--	Breeds primarily in the Central Valley and Great Basin, as well as Shasta Valley, the Owens Valley, and the Mohave Desert.	Great Basin grassland, riparian forest, riparian woodland, and valley & foothill grassland. Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Year Round	No. This area is generally outside the breeding range of this species. There is only one CNDDDB record within five miles of the project site. It is from 1889 and is possibly extirpated.
<i>Charadrius alexandrinus nivosus</i> western snowy plover	FT/CSSC/--	Breed along the coast of California, with larger number of breeding birds occurring from south San Francisco Bay to southern Baja California.	Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	Year Round	No. Suitable habitat for this species does not occur within the project site.

Scientific Name/ Common Name Family (Plants Only)	Status Federal/State/ CRPR- Other	Distribution	Habitat Requirements	Period of Identification	Rationale
<i>Circus cyaneus</i> northern harrier	--/CSSC/--	Occurs in California in coastal areas, Central Valley, northeastern California, and Sierra Nevada region up to 3,600 feet.	Open areas, particularly in grasslands, wet meadows and marshes; requires larger areas for foraging. Nests and forages in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation.	Year Round	Present. This species was observed in a tree in the project site at the Sandy Wool Lake at the Ed Levin County Park. Potentially suitable nesting habitat and foraging habitat for this species occurs in the project site.
<i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo	FT/CE/--	In California, primarily breeds in the upper Sacramento River from Red Bluff to Colusa, and at the South Fork Kern River.	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Needs large riparian blocks for nesting. Nests in riparian woodlands and forests in willow (<i>Salix</i> spp.), often mixed with cottonwoods (<i>Populus</i> spp.), w/ lower story of blackberry (<i>Rubus</i> spp.), nettles (<i>Urtica</i> sp.), or wild grape (<i>Vitis californica</i>).	Year Round	No. Suitable habitat for this species does not occur within the project site.
<i>Elanus leucurus</i> white-tailed kite	--/CFP/--	Occurs throughout most of California's coastal and valley regions excluding the Cascades, Sierra Nevadas, Mojave Desert, and Peninsular Ranges.	Grasslands, meadows, marshes, dry farmed agricultural fields, savannahs and relatively open oak woodlands, and other relatively open lowland scrublands. Dense-topped trees for nesting and perching.	Year Round	Present. This species was observed foraging in grasslands in the project site adjacent to the Summitpointe Golf Club. Potentially suitable nesting habitat for this species occurs in the project site. Large mature trees may provide suitable nesting sites. Non-native grasslands provide potential foraging habitat.

Scientific Name/ Common Name Family (Plants Only)	Status Federal/State/ CRPR- Other	Distribution	Habitat Requirements	Period of Identification	Rationale
<i>Falco peregrinus anatum</i> American peregrine falcon	FD/CD, CFP/--	Breeding range in California includes the Channel Islands, the coast of southern and central California, inland north coastal mountains, the Klamath Mountains and Cascade Range, and the Sierra Nevada.	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	Year Round	No. Suitable breeding habitat for this species does not occur within the project site.
<i>Geothlypis trichas sinuosa</i> saltmarsh common yellowthroat	--/CSSC/--	Resident of the San Francisco Bay region.	Freshwater marshes and salt marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule (<i>Schoenoplectus</i> spp.) patches, willows (<i>Salix</i> spp.) for nesting.	Year Round	No. Suitable breeding habitat for this species does not occur within the project site.
<i>Lanius ludovicianus</i> loggerhead shrike	--/CSSC/--	Breeds throughout much of California except northwestern California and the high Sierras.	Occurs in broken woodlands, savannah, pinyon-juniper, Joshua tree, riparian woodlands, desert oases, and scrub and washes. Nests in dense shrubs and prefers open grasslands for perching and hunting.	Year Round	Yes. Potentially suitable nesting habitat for this species occurs in the project site in shrubs in the grasslands in the project site. Grasslands in the project site also provide potential foraging habitat.
<i>Melospiza melodia pusillula</i> Alameda song sparrow	--/CSSC/--	Resident of the San Francisco Bay region.	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits Salicornia marshes; nests low in gumplant (<i>Grindelia</i> sp.) shrubs (high enough to escape high tides) and in pickleweed (<i>Salicornia</i> sp.).	Year Round	No. Suitable habitat for this species does not occur within the project site.
<i>Rallus longirostris obsoletus</i> California clapper rail	FE/CE,CFP/--	Resident of the San Francisco Bay region.	Salt marshes and brackish marshes traversed by tidal sloughs. Associated with abundant growths of pickleweed (<i>Salicornia</i> spp.), but feeds away from cover on invertebrates from mud-bottomed sloughs.	Year Round	No. Suitable habitat for this species does not occur within the project site.
Mammals					

Scientific Name/ Common Name Family (Plants Only)	Status Federal/State/ CRPR- Other	Distribution	Habitat Requirements	Period of Identification	Rationale
<i>Antrozous pallidus</i> pallid bat	--/CSSC/--	Occurs throughout California except for the high Sierra range.	Typically inhabits deserts, grasslands, shrublands, woodlands and forests in arid to semi-arid areas. Most common in open, dry habitats with rocky areas for roosting. Prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings. Very sensitive to disturbance of roosting sites.	Year Round	Yes. Potentially suitable roosting habitat for this species occurs in trees in the project site. Non-native grasslands and chaparral in the project site potentially provide foraging habitat.
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	--/C, CSSC/--	Throughout California.	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Year Round	No. Suitable roosting habitat for this species does not occur within the project site, but potential foraging sites are present in grasslands in the project site.
<i>Dipodomys heermannii berkeleyensis</i> Berkeley kangaroo rat	--/--, S1	Uncertain but historical occurrences reported from east San Francisco Bay hills and Mt. Diablo.	Hilltops with open grassland and open areas in chaparral and oak or pine woodlands; requires deep, well-drained soil for burrowing.	Year Round (?)	Yes. Potential suitable habitat (grassland and oak woodland) for this species occurs within the project site.
<i>Reithrodontomys raviventris</i> salt-marsh harvest mouse	FE/SE, CFP/--	San Francisco Bay and its tributaries.	Saline marshes. Pickleweed (<i>Salicornia</i> sp.) is primary habitat. Does not burrow, build loosely organized nests. Requires higher areas for flood escape.	Year Round	No. Suitable habitat for this species does not occur within the project site.
<i>Sorex vagrans halicoetes</i> salt-marsh wandering shrew	--/CSSC/--	South San Francisco Bay.	Salt marshes that are medium high 6-8 ft above sea level where abundant driftwood is scattered among pickleweed (<i>Salicornia</i> sp.).	Year Round	No. Suitable habitat for this species does not occur within the project site.

STATUS CODES

FE: Federally Endangered
 FT: Federally Threatened
 FD: Federally Delisted
 C: Candidate Threatened

CE: California Endangered

CT: California Threatened

CR: California Rare

CSSC: California Species of Special Concern

CD: State Delisted

CFP: California Fully Protected

CRPS 1A: Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere

CRPS 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere

CRPS 2: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

CRPS 4.2: Plants of Limited Distribution, Moderately Threatened in California.

CRPS 4.3: Plants of Limited Distribution, Not Very Threatened in California.

State Rank: S1 = Critically Imperiled in California; S2 = Imperiled in California; S3 = Vulnerable in California; S4 = Apparently Secure in California.

WL: California Department of Fish and Wildlife Watch List

? Uncertain About Distribution or Identity

* May be Extirpated

Sources: CDFW, 2015a; USFWS, 2015b; and CNPS, 2015.

Appendix C

Site Photographs

Appendix C
Representative Site Photographs



Photo 1. Summitpointe Golf Club pond along proposed pipeline route.



Photo 2. Summitpointe Golf Club pond.



Photo 3. Pipeline route along Country Club Drive.



Photo 4. Pipeline route adjacent to non-native grassland on unnamed road off of County Club Drive.



Photo 5. Staging Area at Ed Levin County Park.



Photo 6. Unnamed creek at Ed Levin County Park.



Photo7. Sandy Wool Lake at Ed Levin County Park (adjacent to



Photos 8. Arroyo de los Coches Creek along Calaveras Road.

Appendix D

Plant Species Observed in the Vicinity of the Project Area

Appendix D
Plant Species Observed in the Vicinity of the Project Site¹

December 2 and 18, 2015

Family Name	Scientific Name	Common Name	Origin (Native or Non-native)
Adoxaceae	<i>Sambucus nigra ssp. caerulea</i>	blue elderberry	Native
Agavaceae	<i>Chlorogalum pomeridianum</i>	soap plant	Native
Apiaceae	<i>Foeniculum vulgare</i>	sweet fennel	Non-native*
Apocynaceae	<i>Nerium oleander</i>	oleander	Non-native
Anacardaceae	<i>Toxicodendron diversilobum</i>	western poison oak	Native
Anacardaceae	<i>Schinus molle</i>	California pepper	Non-native*
Araliaceae	<i>Hedera helix</i>	English ivy	Non-native*
Asteraceae	<i>Artemisia californica</i>	California sagebrush	Native
Asteraceae	<i>Artemisia douglasiana</i>	mugwort	Native
Asteraceae	<i>Baccharis pilularis</i>	coyote brush	Native
Asteraceae	<i>Bellis perennis</i>	English daisy	Non-native
Asteraceae	<i>Carduus pycnocephalus</i>	Italian thistle	Non-native*
Asteraceae	<i>Centaurea calcitrapa</i>	purple star thistle	Non-native*
Asteraceae	<i>Cirsium vulgare</i>	bull thistle	Non-native*
Asteraceae	<i>Cotula coronopifolia</i>	brass buttons	Non-native*
Asteraceae	<i>Cynara cardunculus</i>	artichoke thistle	Non-native*
Asteraceae	<i>Dittrichia graveolens</i>	stinkwort	Non-native*
Asteraceae	<i>Erigeron canadensis</i>	horseweed	Native
Asteraceae	<i>Helminthotheca echioides</i>	bristly ox-tongue	Non-native*
Asteraceae	<i>Lactuca serriola</i>	prickly lettuce	Non-native
Asteraceae	<i>Silybum marianum</i>	milk thistle	Non-native*
Asteraceae	<i>Senecio vulgaris</i>	common groundsel	Non-native
Asteraceae	<i>Sonchus asper ssp. asper</i>	common sow thistle	Non-native
Asteraceae	<i>Pseudognaphalium luteoalbum</i>	Jersey cudweed	Non-native
Betulaceae	<i>Alnus rhombifolia</i>	white alder	Native
Betulaceae	<i>Corylus cornuta ssp. californica</i>	beaked hazelnut	Native
Brassicaceae	<i>Brassica nigra</i>	black mustard	Non-native*
Brassicaceae	<i>Nasturtium officinale</i>	watercress	Native
Caprifoliaceae	<i>Symphoricarpos albus var. laevigatus</i>	common snowberry	Native
Cupressaceae	<i>Juniperus sp.</i>	juniper	Non-native
Cupressaceae	<i>Sequoia sempervirens</i>	coast redwood	Native
Cyperaceae	<i>Cyperus eragrostis</i>	tall flatsedge	Native
Cyperaceae	<i>Schoenoplectus acutus</i>	hardstem bulrush	Native

Family Name	Scientific Name	Common Name	Origin (Native or Non-native)
Cyperaceae	<i>Schoenoplectus californicus</i>	California bulrush	Native
Equisetaceae	<i>Equisetum</i> sp.	horsetail	Native
Fabaceae	<i>Trifolium hirtum</i>	rose clover	Non-native*
Fabaceae	<i>Vicia</i> sp.	vetch	Non-native
Fagaceae	<i>Quercus agrifolia</i>	coast live oak	Native
Fagaceae	<i>Quercus lobata</i>	valley oak	Native
Geraniaceae	<i>Erodium cicutarium</i>	redstem filaree	Non-native*
Geraniaceae	<i>Erodium moschatum</i>	white stemmed filaree	Non-native
Geraniaceae	<i>Geranium molle</i>	dove's foot geranium	Non-native
Hamamelidaceae	<i>Liquidambar</i> sp.	Sweet gum	Non-native
Juglandaceae	<i>Juglans hindsii</i>	northern California black walnut	Native
Juncaceae	<i>Juncus</i> sp.	rush	Native
Lauraceae	<i>Cinnamomum camphora</i>	camphor tree	Non-native
Lauraceae	<i>Umbellularia californica</i>	California bay	Native
Lythraceae	<i>Lythrum hyssopifolia</i>	hyssop loosestrife	Non-native*
Malvaceae	<i>Malva</i> sp.	mallow	Non-native
Malvaceae	<i>Malvella leprosa</i>	alkali mallow	Native
Myrtaceae	<i>Eucalyptus</i> sp.	eucalyptus	Non-native
Myrtaceae	<i>Eucalyptus globulus</i>	blue gum	Non-native*
Myrtaceae	<i>Eucalyptus polyanthemos</i>	silver dollar	Non-native
Myrtaceae	<i>Eucalyptus sideroxylon</i>	red ironbark	Non-native
Myrtaceae	<i>Melaleuca</i> sp.	paperbark tree	Non-native
Oleaceae	<i>Olea europaea</i>	European olive	Non-native*
Onagraceae	<i>Epilobium brachycarpum</i>	fireweed	Native
Onagraceae	<i>Epilobium ciliatum</i>	fringed willowherb	Native
Plantaginaceae	<i>Plantago major</i>	common plantain	Non-native
Platanaceae	<i>Platanus racemosa</i>	western sycamore	Native
Pinaceae	<i>Pinus</i> sp.	pine	Non-native
Pinaceae	<i>Pinus pinea</i>	Italian stone pine	Non-native
Poaceae	<i>Avena</i> sp.	wild oat	Non-native*
Poaceae	<i>Bromus diandrus</i>	ripgut grass	Non-native*
Poaceae	<i>Cynodon dactylon</i>	Bermuda grass	Non-native
Poaceae	<i>Elymus caput-medusae</i>	Medusa head	Non-native*
Poaceae	<i>Elymus triticoides</i>	creeping wild rye	Native
Poaceae	<i>Festuca perennis</i>	rye grass	Non-native*
Poaceae	<i>Hordeum murinum</i> ssp. <i>leporinum</i>	foxtail barley	Non-native*
Poaceae	<i>Phalaris aquatica</i>	Harding grass	Non-native*
Poaceae	<i>Paspalum dilatatum</i>	Dallis grass	Non-native

Family Name	Scientific Name	Common Name	Origin (Native or Non-native)
Poaceae	<i>Polypogon monspeliensis</i>	rabbitsfoots grass	Non-native*
Poaceae	<i>Poa annua</i>	annual bluegrass	Non-native
Polygonaceae	<i>Polygonum</i> sp.	smartweed	Native or Non-native
Polygonaceae	<i>Rumex crispus</i>	curly dock	Non-native*
Rosaceae	<i>Rubus armeniacus</i>	Himalayan blackberry	Non-native*
Rubiaceae	<i>Galium aparine</i>	common bedstraw	Native
Salicaceae	<i>Populus nigra</i> 'Italica'	Lombardy poplar	Non-native
Salicaceae	<i>Salix babylonica</i>	weeping willow	Non-native
Salicaceae	<i>Salix exigua</i>	narrow-leaved willow	Native
Salicaceae	<i>Salix laevigata</i>	red willow	Native
Salicaceae	<i>Salix lasiolepis</i>	arroyo willow	Native
Sapindaceae	<i>Aesculus californica</i>	California buckeye	Native

Notes:

¹This list includes plants species that were observed within the project site and the immediate vicinity of the project. The biological study area consisted of a 75-foot buffer along both sides of the centerline of the pipeline alignments and a 50-foot buffer around the footprint of the two tank sites and staging area.

This list does not include all ornamental trees and shrubs in the vicinity of the project site.

* Indicates a non-native species that is recognized and being tracked by the California Invasive Plant Council (Cal-IPC).

Appendix E

Wildlife Species Observed in the Vicinity of the Project Area

Appendix E
Animal Species Observed in the Vicinity of the Project Site¹

December 2 and 18, 2015

Common Name	Scientific Name
AMPHIBIANS	
Sierran treefrog	<i>Pseudacris sierra</i> [<i>Pseudacris regilla</i>]
BIRDS	
western scrub-jay	<i>Aphelocoma californica</i>
Canada goose	<i>Branta canadensis</i>
red-tailed hawk	<i>Buteo jamaicensis</i>
great egret	<i>Ardea alba</i>
turkey vulture	<i>Cathartes aura</i>
killdeer	<i>Charadrius vociferous</i>
northern harrier	<i>Circus cyaneus</i> *
American crow	<i>Corvus brachyrhynchos</i>
white-tailed kite	<i>Elanus leucurus</i> **
northern mockingbird	<i>Mimus polyglottos</i>
house sparrow	<i>Passer domesticus</i> *
ruby-crowned kinglet	<i>Regulus calendula</i>
black phoebe	<i>Sayornis nigricans</i>
American robin	<i>Turdus migratorius</i>
golden-crowned sparrow	<i>Zonotrichia atricapilla</i>
MAMMALS	
black-tailed jackrabbit	<i>Lepus californicus</i>
black-tailed deer	<i>Odocoileus hemionus</i>
California ground squirrel	<i>Otospermophilus beecheyi</i>

Notes:

¹This list includes plants species that were observed in the immediate vicinity of the project site as well as the project site. The biological study area consisted of a 75-foot buffer along both sides of the centerline of the pipeline alignments and a 50-foot buffer around the footprint of the two tank sites and staging area.

*Indicates a non-native species.

**Indicates a special-status species

Appendix C - Hazardous Materials Database Search Results

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Appendix C: Hazardous Materials Database Search Results

	Site Name	Location	Status
1	Devcon Construction (GeoTracker - T0608501634)	555 Los Coches Street	LUST Cleanup Site: Completed – Case Closed
2	Shell (GeoTracker - T0608592466)	950 Calaveras Blvd	LUST Cleanup Site: Completed – Case Closed
3	Shell (T0608501315)	950 E Calaveras Blvd	LUST Cleanup Site: Completed – Case Closed
4	Exxon #7-8993 (GeoTracker - T0608500573)	39 S Park Victoria Dr	LUST Cleanup Site: Completed – Case Closed
5	Unocal #5130 (GeoTracker - T0608502234)	27 S Park Victoria Dr	LUST Cleanup Site: Completed – Case Closed
6	Unocal #5130 (GeoTracker - T0608501513)	27 S Park Victoria Dr	LUST Cleanup Site: Completed – Case Closed
7	Victorian Square Cleaners (GeoTracker - T1000004709)	1285 E Calaveras Blvd	Cleanup Program Site: Open – Site Assessment
8	Shell – 12 N Park Victoria (GeoTracker - T0608501249)	12 N Park Victoria	LUST Cleanup Site: Completed – Case Closed
9	Shell (GeoTracker - T0608591760)	990 Jacklin Rd	LUST Cleanup Site: Completed – Case Closed
10	Shell (GeoTracker – T0608565949)	990 Jacklin Rd	LUST Cleanup Site: Completed – Case Closed
11	Private Residence (GeoTracker - T0608500641)	Private Residence	LUST Cleanup Site: Completed – Case Closed
12	Fox Hollow – Park Victoria Site (GeoTracker - T1000008074)	Park Victoria and Fox Hollow	Cleanup Program Site: Open – Site Assessment
13	Prudential Properties (GeoTracker - T1000008057)	1051 S Milpitas Blvd	Cleanup Program Site: Open – Inactive
14	Olympian Oil (GeoTracker – T0608502432)	800 Ames Ave	LUST Cleanup Site: Completed – Case Closed
15	Balch Petroleum (GeoTracker – T0608532324)	930 Ames Ave	LUST Cleanup Site: Completed – Case Closed
16	Great Western Stinnes Western Chem (GeoTracker – T0608591605)	945 Ames Ave	Cleanup Program Site: Open – Remediation (<i>Land Use Restrictions</i>)
17	Talley Property (GeoTracker – T0608502382)	893 Ames Ave	LUST Cleanup Site: Completed – Case Closed
18	Mission Linen (GeoTracker – T0608500912)	1180 Ames Ave	LUST Cleanup Site: Completed – Case Closed
19	Sipex Corporation (EnviroStor – 71003694)	233 S Hillview Dr	Tiered Permit – Inactive – Needs Evaluation
20	Cook Paint and Varnish Company (EnviroStor - 43280132)	201 Sinclair Frontage Rd	State Response – Certified as of 3/29/1988
21	Great Western Chemical Co (EnviroStor – CAD095991253)	945 Ames Ave	Haz Waste - Closed

22	Great Western Chemical Co (EnviroStor – 80001721)	945 Ames Ave	Corrective Action – Refer: RWQCB
23	Great Western Chemical Co. – Milpitas (EnviroStor – 71002637)	945 Ames Ave	Tiered Permit – Inactive – Needs Evaluation
24	Sherwin Williams Company (EnviroStor – 80001382)	805 Sinclair Frontage Rd	Corrective Action – Inactive – Needs Evaluation